

PUBLISH DATE: OCTOBER 27, 2024

**EASTERN NORTH CAROLINA
MONTHLY CLIMATE REPORT**

SEPTEMBER 2024

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

National Weather Service

NEWPORT/MOREHEAD CITY, NC

MONTHLY SUMMARY

September continued the streak of wet weather from the prior two months, primarily due to the offshore development of low pressure well, which funneled moisture and precipitation along the coast. The heaviest rain from what would be designated Potential Tropical Cyclone Eight (PTC8) would impact areas from Wilmington south, but several locations received over half a foot of rain. Both Cape Hatteras and New Bern broke daily rainfall records during the storm. By the end of the month, the forecast area averaged 6.70" or about 100-150% of normal.

Temperatures held near average in September. Before PTC8 impacted the region, cooler high pressure nosed into the Carolinas and nudged temperatures below average. Inland areas felt it more than along the coast, and New Bern tied a record low during this time. Above-average temperatures returned at the end of September. The average temperature across the area was 73.6°F, or roughly half a degree above normal.

The heavy rain from PTC 8 kept drought conditions at bay. By the beginning of October, no portion of eastern North Carolina was abnormally dry.

For more information on Potential Tropical Cyclone Eight, please visit <https://www.weather.gov/mhx/TropicalEventSummary>

Due to Hurricane Helene's impacts on the National Centers for Environmental Information (NCEI) in Asheville, some graphics are unavailable in this report.

TEMPERATURES

Temperatures in North Carolina remained only slightly above average in September. The average temperature for the month was 71.2°F, or 0.4°F above the 1991-2020 average. This was the 47th warmest September since records began in 1895, with 130 years of data.

Across Eastern North Carolina, temperatures were close to the statewide average and about 0.6°F above the 20th-century average. Since their respective records began, September 2024 was the 40th warmest at New Bern and the 50th warmest at Cape Hatteras. Additional observations can be found in Appendix A.

MHX Select Site Temperature Statistics: September 2024

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Beaufort (KMRH)	82.6	71.3	77.0	75.4	1.6
Hatteras (KHSE)	80.8	70.6	75.7	76.9	-1.2
New Bern (KEWN)	82.7	66.9	74.8	74.2	0.6

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).

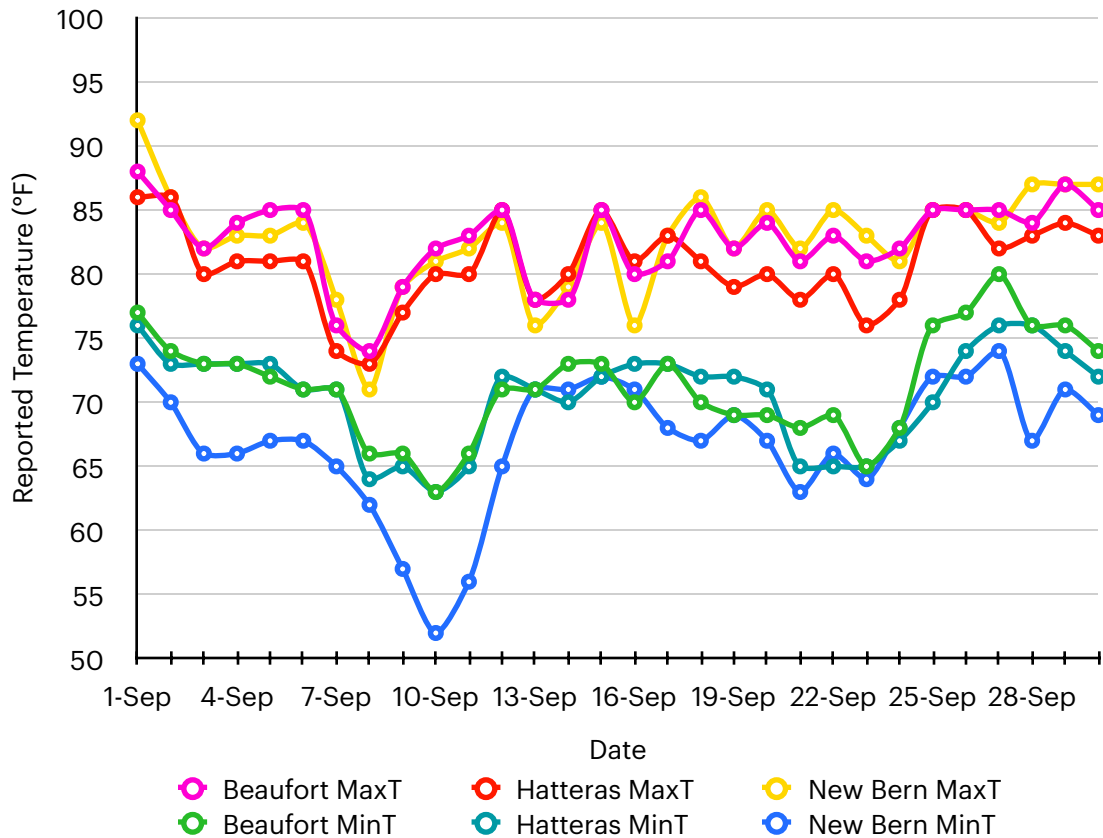
County	Avg. Temperature (°F)	Mean (°F)	Departure (°F)	Rank
Beaufort	73.5	72.8	0.7	52 W
Carteret	74.9	74.4	0.5	58 W
Craven	73.8	73.0	0.8	51 W
Dare	74.5	73.7	0.8	50 W
Duplin	73.0	72.6	0.4	54 W
Greene	72.8	72.3	0.5	56 W
Hyde	74.4	73.7	0.7	52 W
Jones	73.3	72.6	0.7	52 W
Lenoir	72.9	72.5	0.4	58 W
Martin	72.4	71.7	0.7	54 W
Onslow	73.6	73.2	0.4	58 W
Pamlico	74.3	73.9	0.4	59 W
Pitt	72.8	72.3	0.5	56 W
Tyrrell	74.0	72.9	1.1	46 W
Washington	73.2	72.1	1.1	46 W
Area Average	73.6	72.9	0.6	

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

There were two distinctive periods of anomalous temperatures in September. The first was a sharp cooldown in the second week as cooler high pressure built into the area, knocking lows out of the 70s after a summer of seemingly unrelenting humidity. Sites away from the beach cooled considerably, and some record lows were set. **New Bern** touched 52°F on September 10, tying the old record set in 1956. Overall, average

temperatures during this period were around 5 degrees below normal. Warmer-than-average temperatures returned for the month's final week, as overnight lows climbed well into the 70s. Temperatures during this period were around 5 degrees above normal.

Daily Maximum and Minimum Temperatures



PRECIPITATION

Analysis conducted by the National Centers for Environmental Information depicted a continuation of very wet weather across North Carolina. Statewide, precipitation averaged 7.95", or 2.79" above the 30-year average. This was the 9th wettest observed September for the state since records began in 1895.

Eastern North Carolina was slightly drier than the rest of the state but still wetter than the 30-year average. New Bern recorded its 37th wettest September, while Cape Hatteras recorded its 16th. Average accumulation across the MHX forecast area was 6.70", or roughly 1.5" inches above the 20th-century average.

MHX Select Site Precipitation Statistics: September 2024

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Beaufort (KMRH)	16.79	8.46	8.33
Hatteras (KHSE)	10.25	7.63	2.62
New Bern (KEWN)	5.66	6.33	-0.67

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).

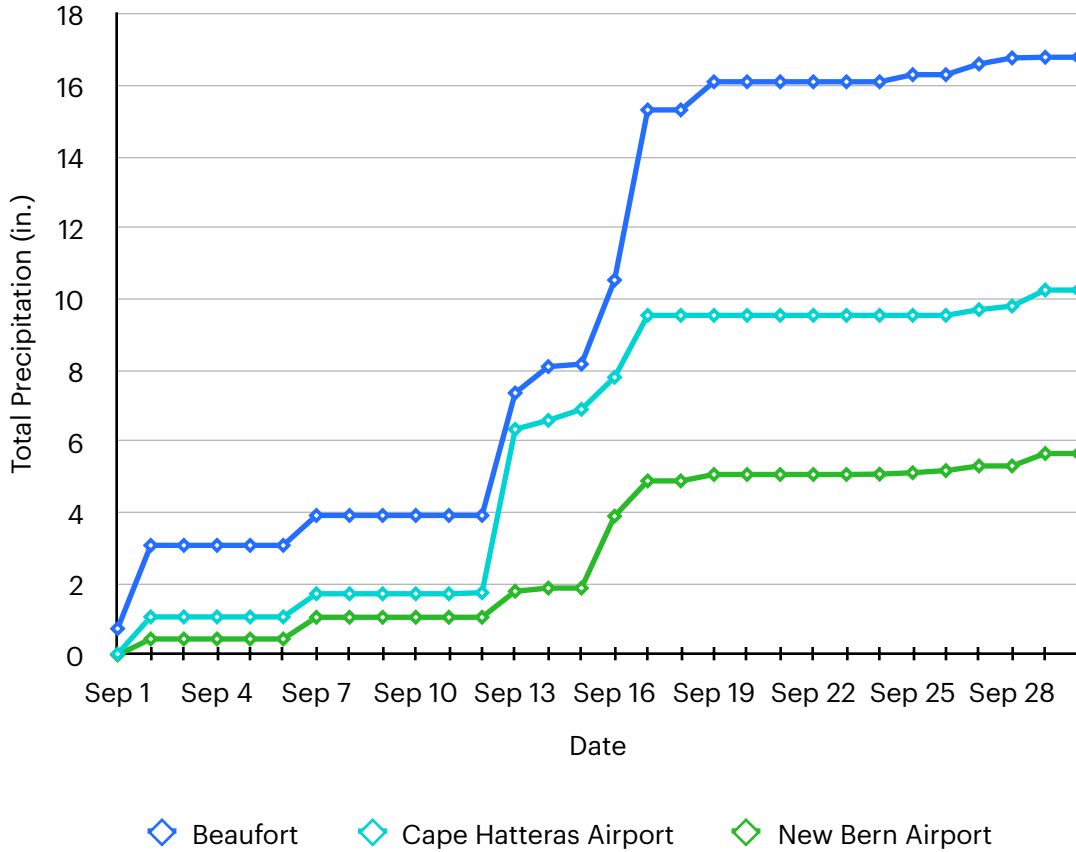
County	Avg. Accum. (in.)	Mean (in.)	Departure (in.)	Rank
Beaufort	6.11	5.17	0.94	40 W
Carteret	8.35	5.88	2.47	24 W
Craven	7.33	5.48	1.85	32 W
Dare	6.55	4.94	1.61	33 W
Duplin	7.68	5.03	2.65	21 W
Greene	7.04	4.65	2.39	23 W
Hyde	6.63	5.24	1.39	31 W
Jones	7.38	5.47	1.91	27 W
Lenoir	7.11	4.97	2.14	27 W
Martin	4.98	4.56	0.42	41 W
Onslow	8.38	5.71	2.67	22 W
Pamlico	7.37	5.56	1.81	27 W
Pitt	6.40	4.70	1.70	28 W
Tyrrell	4.96	4.90	0.06	50 W
Washington	4.26	4.87	-0.61	62 W
Area Average	6.70	5.14	1.56	

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

Rainfall across eastern NC was defined primarily by one system, a developing low well off the coast of the Carolinas that funneled moisture and precipitation across much of the coast for several days. Although the system did have tropical origins, it never developed into a tropical cyclone and was labeled Potential Tropical Cyclone Eight. Both **New Bern** and **Cape Hatteras** set daily rainfall records. New Bern’s total of 2.02” on Sept 16 tied the

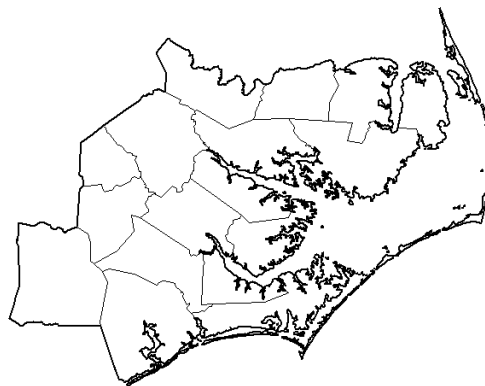
record set in 1981, and Hatteras’s 4.59” on Sept 13 broke the old record of 4.26” set in 2018. Areawide, precipitation ranged from 100-150% of normal.

Monthly Accumulated Precipitation



Despite the bulk of rainfall falling on a single period and only minor events outside of PTC 8, it was enough to keep drought conditions at bay for a second month. No areas in Eastern NC were considered abnormally dry by the beginning of October.

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



October 1, 2024
(Released Thursday, Oct. 3, 2024)
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 09-24-2024	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 07-02-2024	0.00	100.00	91.91	32.76	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 10-03-2023	100.00	0.00	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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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 2024

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Greenville	81.5	66.2	73.9	73.6	0.3
Kinston	82.1	64.4	73.3	74.0	-0.8
Williamston	81.5	64.6	73.1	73.0	0.1
Plymouth	81.3	65.5	73.4	73.3	0.1
Bayboro	82.4	65.6	74.0	73.1	0.9
Manteo	78.7	69.0	73.9	73.9	-0.1

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

Maximum and Minimum Monthly Temperatures: September 2024

Site	Max High (°F)	Date Observed	Min Low (°F)	Date Observed
Beaufort (KMRH)	88	Sept 1	63	Sept 10
Hatteras (KHSE)	86	Sept 1-2	63	Sept 10
New Bern (KEWN)	92	Sept 1	52	Sept 10
Greenville	91	Sept 1	55	Sept 9-10
Kinston	91	Sept 2	52	Sept 10
Williamston	91	Sept 2	54	Sept 9-12
Plymouth	89	Sept 2	52	Sept 9-10
Bayboro	90	Sept 2	51	Sept 10-11
Manteo	91	Sept 2	57	Sept 10-11

APPENDIX B: ADDITIONAL PRECIPITATION DATA

Cooperative Observation Site Precipitation Statistics: September 2024

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Greenville	7.57	7.33	0.24
Kinston	7.17	6.64	0.53
Williamston	4.34	6.92	-2.58
Plymouth	3.28	6.13	-2.85
Bayboro	9.11	7.14	1.97

Sites in red have missing data in their record.

CoCoRaHS Monthly Accumulated Precipitation: September 2024

Site	County	Amount (in.)
Aurora 4.8 NE	Beaufort	7.68
Bath 0.7 N	Beaufort	6.47
Pantego 0.4 WSW	Beaufort	5.25
Beaufort 3.6 N	Carteret	17.05
Morehead City 2.9 WNW	Carteret	16.98
Beaufort 3.8 N	Carteret	16.64
Beaufort 5.3 N	Carteret	15.25
Beaufort 0.5 W	Carteret	14.45
Atlantic Beach 1.0 E	Carteret	14.10
Morehead City 0.6 NW	Carteret	13.78
Newport 2.3 SE	Carteret	13.17

Site	County	Amount (in.)
Cedar Point 0.4 WSW	Carteret	13.17
Pine Knoll Shores 0.3 NE	Carteret	13.00
Cedar Point 0.7 NNE	Carteret	12.69
Newport 0.2 SW	Carteret	12.36
Cedar Point 0.9 WSW	Carteret	12.15
Swansboro 2.7 NE	Carteret	11.79
Swansboro 3.7 NNE	Carteret	11.73
Newport 1.0 N	Carteret	11.11
Beaufort 12.1 N	Carteret	9.80
New Bern 1.3 NNE	Craven	8.10
New Bern 5.3 SW	Craven	8.03
Trent Woods 1.0 NNE	Craven	7.14
Trent Woods 1.3 SSE	Craven	7.04
Trent Woods 1.2 ENE	Craven	6.90
New Bern 3.8 S	Craven	6.47
Brice Creek 0.9 WNW	Craven	6.32
Bridgeton 0.3 SSE	Craven	5.88
Buxton 0.3 ENE	Dare	8.92
Manteo 2.8 NW	Dare	5.92
Rodanthe 1.0 SSE	Dare	5.69
Mount Olive 2.4 SW	Duplin	7.45
Ayden 6.5 WNW	Greene	6.97
Ocracoke 0.6 SW	Hyde	11.48

Site	County	Amount (in.)
SQ Tower	Hyde	11.20
Ocracoke 0.2 ESE	Hyde	11.04
Engelhard 0.8 NW	Hyde	5.16
Kinston 3.7 WNW	Lenoir	8.46
Pink Hill 2.5 NE	Lenoir	7.67
Kinston 1.2 NW	Lenoir	7.16
Kinston 7.0 SW	Lenoir	6.83
Kinston 4.6 ESE	Lenoir	6.81
Kinston 5.1 WNW	Lenoir	6.16
Kinston 4.7 ESE	Lenoir	5.55
Williamston 8.9 SSE	Martin	3.72
Jamesville 6.1 SW	Martin	2.97
Swansboro 2.8 WSW	Onslow	12.06
Hubert 4.9 SE	Onslow	11.45
Sneads Ferry 3.3 SW	Onslow	11.17
Holly Ridge 5.0 E	Onslow	11.17
Jacksonville 2.4 NNE	Onslow	11.08
Sneads Ferry 1.2 SSW	Onslow	10.90
Jacksonville 4.5 NW	Onslow	10.14
Jacksonville 5.4 WSW	Onslow	9.42
Jacksonville 1.0 NW	Onslow	9.03
Oriental 2.1 WSW	Pamlico	8.99
Merritt 1.5 WSW	Pamlico	8.20

Site	County	Amount (in.)
Oriental 4.3 NNW	Pamlico	8.02
Oriental 1.7 WNW	Pamlico	7.97
Lowland 0.2 SE	Pamlico	7.50
Greenville 4.6 W	Pitt	7.96
Fountain 0.1 NE	Pitt	7.88
Winterville 3.5 W	Pitt	6.83
Winterville 2.5 NNW	Pitt	6.72
Greenville 7.1 SSE	Pitt	5.91
Greenville 5.0 SE	Pitt	5.78
Greenville 2.8 ESE	Pitt	5.31

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