





ARKANSAS LIGHTNING REPORT



ABOUT THIS REPORT

The 2020 Lightning Report was prepared by Earth Networks using the Earth Networks Total Lightning Network (ENTLN). The following report includes in-cloud, cloud-to-ground, and total lightning data for this state and the surrounding water bodies (if any) throughout 2020. Counts, densities, rankings, Dangerous Thunderstorm Alerts (DTAs), and Thunder Days in this report are from January 1, 2020 to December 31, 2020.

THE EARTH NETWORKS TOTAL LIGHTNING NETWORK (ENTLN)

The lightning data in this report is derived from the Earth Networks Total Lightning Network (ENTLN), which monitors the combination of in-cloud and cloud-to-ground lightning strikes over 100 countries. With over 1,800 sensors, the ENTLN is the most extensive and technologically advanced total lightning network in the world. ENTLN has been specifically deployed to detect real-time lightning and provide advanced warning for severe weather events that could threaten public safety and operational efficiency.

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REPORT TERMINOLOGY

To help you better understand the insights from this lightning report, we've included definitions of our frequently used report terminology below.

Lightning Pulse: This report measures lightning pulses. A pulse is a surge of electric current in lightning usually accompanied by a burst of light. Pulses are classified as In-cloud (IC) or Cloud-to-Ground (CG).

Lightning Flash: A lightning flash is a collection of pulses close in space and time that approximates the continuous ionized channels of a complete bolt of lightning.

Cloud-to-Ground Lightning (CG): Lightning that happens between opposite charges in a cloud and on the ground.

In-Cloud Lightning (IC): Lightning that occurs between opposite charges within a thunderstorm cloud.

Total Lightning Detection: The combination of all in-cloud and cloud-to-ground lightning activity.

Pulse Density: The number of lightning pulses per square mile per year.

Dangerous Thunderstorm Alerts (DTAs): Earth Networks patented advanced severe weather warnings that notify users of incoming storms up to 45 minutes before storm arrival.

Thunder Days: Any given day where lightning was detected in a certain area.

TOTAL LIGHTNING

is the combination of cloud-to-ground (CG) and in-cloud (IC) lightning strikes



Cloud-to-Ground lightning:

Lightning that happens between opposite charges in a cloud and on the ground

In-Cloud lightning:

Lightning that occurs between opposite charges within a thunderstorm cloud

ARKANSAS TOTAL LIGHTNING PULSES 11,417,155

9.63%

Total Lightning Type Percentages



LIGHTNING COUNT RANKINGS



Arkansas ranked 14 in total lightning pulses for 2020.



COUNTIES

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TOTAL (CG+IC) PULSE DENSITY MAP







Total Pulse Density (sqmi)

Pulse density is a better indicator of lightning activity than total lightning counts because it enables us to compare different sized areas (like states and counties) fairly.

We cluster pulses together into a flash. With every pulse we detect, we receive a more precise measure of lightning activity. At left, areas in bright yellow experienced the highest lightning pulse density per square mile in 2020.

500

TOTAL PULSE DENSITY RANKINGS

This chart shows the top 15 counties in the state ranked by total pulse density, which is the total lightning divided by the area of the county (in square miles).



EARTH NETWORKS 2020 U.S. Lightning Report

DANGEROUS THUNDERSTORM ALERTS IN THE U.S.



Earth Networks issued 29,401 Dangerous Thunderstorm Alerts (DTAs) in 2020. This year's map clearly shows the persistent drought conditions that have plagued the South and Southwest.

Dangerous Thunderstorm Alerts (DTAs), available exclusively to Earth Networks, provide **50% more lead time** to severe storms compared to publicly available alerts.

DANGEROUS THUNDERSTORM ALERTS BY MONTH

Earth Networks issued 815 Dangerous Thunderstorm Alerts for the state in 2020.

ARKANSAS



TOTAL STATE THUNDER DAYS: 211



-10 -5 -15 **Change in Thunder Days Map**

This year, the Southwest and Midwest experienced significantly less lightning than in previous years due to a persistent drought and weak monsoon. States in the Southeast experienced a substantial uptick in lightning activity this year, including Tennessee, North Carolina, South Carolina, Virginia, West Virginia, Georgia, Alabama, Mississippi, Florida, Louisiana, Arkansas, and Kentucky.

10

15

Thunder Days are the days we detected lightning over a certain area. The map shows a deviation from our 7-year average and illustrates our overall finding that lightning decreased about 15% from 2019.

EARTH NETWORKS®



THANK YOU

For additional insights or permission to use data or graphics from this report, please contact us at: info@earthnetworks.com or call 1 301.250.4000



APPENDIX

This table ranks all U.S. states by total lightning pulses, including in-cloud and cloudto-ground from highest to lowest. Total number of thunder days in each state (the total number of days in the year when lightning was detected by ENTLN) are also included. The period covered is January 1, 2020 to December 31, 2020.

STATE	TOTAL LIGHTNING PULSES	TOTAL THUNDER DAYS	
ТХ	63,683,799	278	
FL	35,430,198	246	
ОК	26,159,420	205	
KS	23,125,675	179	
IL	16,785,149	166	
NE	14,433,875	178	
МО	14,081,658	184	
VA	13,234,163	176	
GA	13,016,803	217	
ОН	12,009,955	143	
SD	11,940,870	156	
LA	11,787,379	230	
AL	11,448,621	202	
AR	11,417,155	211	
NC	10,666,834	203	
PA	10,024,978	151	
MS	9,236,279	210	
IN	9,175,986	149	
IA	9,121,097	140	
WI	8,812,327	145	
TN	8,458,373	186	
MN	8,009,792	148	
KY	7,974,926	166	
MI	7,769,382	159	
ND	7,634,287	131	
SC	7,454,219	197	
CO	7,360,769	185	
MD	6,666,766	124	
NM	5,819,550	196	
MT	5,107,593	154	
WY	4,951,397	166	
NY	4,943,122	152	
WV	4,684,226	150	
AZ	3,532,759	151	
	3,465,297	96	
	1,951,574	172	
	1,518,171	172	
	1,207,040	5U 146	
	1,237,002	00	
	056 197	151	
OP	930,187	131	
	\$13,633 802 252	70	
	618 242	70	
	402 333	117	
ME	358 334	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u>81</u></u>	
	254 695	75	
	190 992	42	
	130,332 AA 20A	47	
	47,204	** /	

APPENDIX

This table ranks all counties in the state by total lightning pulses, including in-cloud and cloud to-ground from highest to lowest. Total number of thunder days in each county (the total number of days in the year when lightning was detected by ENTLN) are also included. The period covered is January 1, 2020 to December 31, 2020.

COUNTY	TOTAL LIGHTNING PULSES	TOTAL THUNDER DAYS	COUNTY
Polk County	399,497	86	Monroe
Scott County	391,242	95	Lincoln (
Hempstead County	302,948	88	Dallas Co
Montgomery County	286,707	95	Greene
Yell County	258,999	92	Chicot C
Howard County	248,629	86	Jackson
Arkansas County	234,754	87	Ouachita
Clark County	232,078	88	Boone C
Logan County	228,516	91	Bradley
Jefferson County	228,110	90	Perry Co
Pulaski County	220,203	87	Prairie C
White County	220,068	84	Crittend
Sebastian County	213,492	78	Poinsett
Garland County	211,726	87	Fulton C
Miller County	207,131	82	Carroll C
Washington County	201,687	90	Faulkner
Benton County	201,261	86	St. Franc
Hot Spring County	196,055	87	Baxter C
Sevier County	185,396	79	Izard Co
Mississippi County	182,210	81	Calhoun
Little River County	180,417	82	Cleburne
Crawford County	175,141	74	Randolp
Grant County	173,973	83	Lawrenc
Lonoke County	167,861	86	Conway
Newton County	165,910	83	Indepen
Pike County	165,691	88	Cross Co
Drew County	158,099	87	Searcy C
Desha County	150,955	89	Stone Co
Ashley County	148,611	85	
Saline County	148,104	85	
Franklin County	147,196	81	
Union County	146,272	89	
Nevada County	139,044	90	
Lafayette County	138,177	78	
Woodruff County	135,818	75	
Johnson County	135,490	84	
Van Buren County	132,925	87	
Marion County	132,893	80	
Columbia County	131,160	75	
Pope County	129,988	96	
Phillips County	126,875	89	
Clay County	123,369	86	
Craighead County	122,734	84	
Madison County	121,456	83	
Cleveland County	120,736	83	
Lee County	120,481	79	
Sharp County	119,129	79	

TOTAL LIGHTNING PULSES	TOTAL THUNDER DAYS
115,908	77
113,251	84
112,558	83
112,426	79
109,845	80
107,817	78
107,690	90
107,672	79
106,312	86
104,530	82
102,237	81
101,229	81
101,122	83
98,947	75
96,703	82
95,717	81
95,027	75
94,423	76
92,913	68
89,259	77
88,783	78
85,717	80
85,576	77
83,631	77
76,494	81
73,937	74
67,855	84
65,010	76
	TOTAL LIGHTNING PULSES115,908113,251113,251112,558112,426109,845107,817107,690107,672106,312104,530102,237101,229101,12298,94796,70395,71795,02794,42392,91389,25988,78385,71785,57683,63176,49473,93767,85565,010

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