



RESEARCH

Brush, Grass and Forest Fires – Southeast Region Supporting Tables

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Supporting Tables for Local Fire Department Responses to Brush, Grass, and Forest Fires: the Southeast Region

The tables that follow provide more details about local fire department responses to brush, grass and forest fires, including unclassified vegetation fires, in the Southeast region. The Wildland Fire Executive Council’s Cohesive Strategy Regions were used for this analysis. Please refer back to the text for a discussion of key points and methodology. More than half of the country’s local fire department responses to these incidents were in the Southeast.

For more information, see the national report, national supporting tables, and comparable tables about these fires in the Northeast and West. Please see the national report for a discussion of methodology.

**Cohesive Strategy Regions
identified by the Wildland Fire
Executive Council**



**Local Fire Department
Responses to Brush, Grass
and Forest Fires
by Region: 2011-2015**

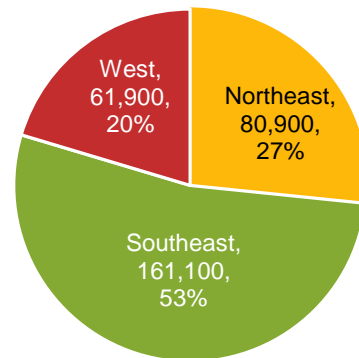


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Table 1.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Incident Type
2011-2015 Annual Averages

Incident Type	Fires	
Grass fire	68,000	(42%)
Brush, or brush and grass mixture fire	60,200	(37%)
Forest, woods or wildland fire	19,000	(12%)
Unclassified natural vegetation fire	13,800	(9%)
Total	161,100	(100%)

Table 2.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Month
2011-2015 Annual Averages

Month	Fires	
January	16,900	(11%)
February	17,100	(11%)
March	20,800	(13%)
April	15,300	(9%)
May	12,600	(8%)
June	12,800	(8%)
July	15,000	(9%)
August	12,500	(8%)
September	10,300	(6%)
October	9,800	(6%)
November	10,400	(6%)
December	7,800	(5%)
Total	161,100	(100%)
Average	13,400	(8%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 3.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Day of Week
2011-2015 Annual Averages

Day of Week	Fires	
Sunday	24,700	(15%)
Monday	22,700	(14%)
Tuesday	20,800	(13%)
Wednesday	21,100	(13%)
Thursday	21,500	(13%)
Friday	21,900	(14%)
Saturday	28,400	(18%)
Total	161,100	(100%)
Average	23,000	(14%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Alarm Time
2011-2015 Annual Averages

Alarm Time	Fires	
Midnight- 12:59 a.m.	2,300	(1%)
1:00-1:59 a.m.	1,500	(1%)
2:00-2:59 a.m.	1,100	(1%)
3:00-3:59 a.m.	1,000	(1%)
4:00-4:59 a.m.	900	(1%)
5:00-5:59 a.m.	1,000	(1%)
6:00-6:59 a.m.	1,300	(1%)
7:00-7:59 a.m.	1,600	(1%)
8:00-8:59 a.m.	1,900	(1%)
9:00-9:59 a.m.	2,800	(2%)
10:00-10:59 a.m.	4,800	(3%)
11:00-11:59 a.m.	8,500	(5%)
12:00-12:59 p.m.	12,700	(8%)
1:00-1:59 p.m.	16,600	(10%)
2:00-2:59 p.m.	18,600	(12%)
3:00-3:59 p.m.	18,200	(11%)
4:00-4:59 p.m.	16,100	(10%)
5:00-5:59 p.m.	13,400	(8%)
6:00-6:59 p.m.	10,500	(7%)
7:00-7:59 p.m.	8,100	(5%)
8:00-8:59 p.m.	6,600	(4%)
9:00-9:59 p.m.	5,100	(3%)
10:00-10:59 p.m.	3,800	(2%)
11:00-11:59 p.m.	2,700	(2%)
Total	161,100	(100%)
Average by alarm hour	6,700	(4%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast, by Major Cause
2011-2015 Annual Averages

Major Cause	Fires	
Intentional	28,800	(18%)
Outside/open fire for debris or waste disposal	26,000	(16%)
Electrical power or utility line	17,400	(11%)
Smoking materials	14,200	(9%)
Lightning	7,400	(5%)
Garden tool or agricultural equipment	7,100	(4%)
Rekindle	7,000	(4%)
Playing with heat source	6,700	(4%)
Fireworks	5,700	(4%)
Agriculture or land management burns	5,400	(3%)
Shop tool or industrial equipment, including torches	4,600	(3%)
Exposure fire	3,600	(2%)

Note: Major causes were extracted from cause of ignition, factors contributing to ignition, heat source and equipment involved in ignition. Unknowns were allocated separately for each data element. Double counting does occur. For example, some fireworks and intentional fires were caused by playing with heat source. Some open burning fires were considered intentional. Causal factors that did not describe a specific scenario are not shown but can be found in the respective data elements. Sums do *not* add to 100% or monthly totals. These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 6A.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast, by Major Cause and Month
2011-2015 Annual Averages

Peak months for each cause are in red.

Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Total Fires
Intentional	11%	12%	15%	10%	7%	6%	7%	6%	6%	7%	8%	6%	100%	28,800
Open burning	14%	14%	16%	9%	6%	5%	5%	5%	5%	6%	8%	6%	100%	26,000
Electrical power or utility line	8%	9%	10%	9%	8%	11%	11%	10%	7%	7%	6%	5%	100%	17,400
Smoking materials	8%	9%	13%	14%	10%	9%	8%	8%	6%	6%	6%	4%	100%	14,200
Lightning	1%	1%	3%	7%	13%	22%	23%	19%	8%	2%	1%	1%	100%	7,400
Garden tool or agricultural equipment	6%	6%	11%	8%	9%	12%	12%	11%	10%	7%	6%	3%	100%	7,100
Rekindle	7%	8%	12%	9%	7%	10%	11%	12%	9%	6%	6%	3%	100%	7,000
Playing with heat source	12%	9%	12%	9%	6%	7%	21%	5%	4%	4%	5%	5%	100%	6,700
Fireworks	16%	3%	3%	2%	2%	7%	54%	3%	2%	1%	1%	6%	100%	5,700
Agriculture or land management burns	11%	14%	21%	10%	6%	7%	5%	5%	5%	6%	6%	5%	100%	5,400
Shop tool or industrial equipment, including torches	12%	11%	16%	6%	6%	7%	8%	10%	8%	6%	5%	4%	100%	4,600
Exposure fire	14%	14%	17%	10%	6%	4%	6%	6%	6%	5%	8%	5%	100%	3,600
All brush, grass and forest fires	11%	11%	13%	9%	8%	8%	9%	8%	6%	6%	6%	5%	100%	161,100

Note: Major causes were extracted from cause of ignition, factors contributing to ignition, heat source and equipment involved in ignition. Unknowns were allocated separately for each data element. Double counting does occur. For example, some fireworks and intentional fires were caused by playing with heat source. Some open burning fires were considered intentional. Causal factors that did not describe a specific scenario are not shown but can be found in the respective data elements. Sums do *not* add to 100% or monthly totals. These are national estimates of fires reported to U.S. local fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 6B.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast, by Major Cause and Month
2011-2015 Annual Averages

The most common causes for each month are in red.

Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Intentional	3,200	3,300	4,200	2,800	2,100	1,800	2,000	1,700	1,600	2,000	2,300	1,800	28,800
Open burning	3,700	3,700	4,300	2,300	1,500	1,300	1,300	1,400	1,300	1,500	2,100	1,700	26,000
Electrical power or utility line	1,500	1,500	1,700	1,500	1,400	1,800	1,900	1,800	1,200	1,200	1,000	800	17,400
Smoking materials	1,100	1,200	1,800	2,000	1,500	1,300	1,100	1,100	900	900	800	600	14,200
Lightning	100	100	200	500	1,000	1,600	1,700	1,400	600	100	0	0	7,400
Garden tool or agricultural equipment	400	400	800	600	600	900	800	800	700	500	400	200	7,100
Rekindle	500	600	800	600	500	700	800	800	600	400	400	200	7,000
Playing with heat source	800	600	800	600	400	500	1,400	300	200	300	300	300	6,700
Fireworks	900	200	200	100	100	400	3,100	100	100	100	100	300	5,700
Agriculture or land management burns	600	800	1,100	600	300	400	300	300	300	300	400	300	5,400
Shop tool or industrial equipment, including torches	600	500	700	300	300	300	400	500	400	300	200	200	4,600
Exposure fire	500	500	600	300	200	200	200	200	200	200	300	200	3,600
All brush, grass and forest fires	16,900	17,100	20,800	15,300	12,600	12,800	15,000	12,500	10,300	9,800	10,400	7,800	161,100

Note: Major causes were extracted from cause of ignition, factors contributing to ignition, heat source and equipment involved in ignition. Unknowns were allocated separately for each data element. Double counting does occur. For example, some fireworks and intentional fires were caused by playing with heat source. Some open burning fires were considered intentional. Causal factors that did not describe a specific scenario are not shown but can be found in the respective data elements. Sums do *not* add to 100% or monthly totals. These are national estimates of fires reported to U.S. local fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 7.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast, by Cause of Ignition
2011-2015 Annual Averages

Cause of Ignition	Fires	
Unintentional	96,000	(60%)
Intentional	28,800	(18%)
Act of nature	13,800	(9%)
Unclassified cause	13,500	(8%)
Failure of equipment or heat source	9,100	(6%)
Total	161,100	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Fires in which the cause of ignition was unknown or not reported were allocated proportionally among fires of known cause of ignition. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 8.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Factor Contributing to Ignition
2011-2015 Annual Averages

Factor Contributing	Fires	
Outside/open fire for debris or waste disposal	26,000	(16%)
High wind	25,800	(16%)
Abandoned or discarded material or product	19,000	(12%)
Unclassified natural condition	13,100	(8%)
Electrical failure or malfunction	10,900	(7%)
Unclassified factor contributed to ignition	10,400	(6%)
Fire spread or control, other	8,000	(5%)
Rekindle	7,000	(4%)
Playing with heat source	6,700	(4%)
Storm	6,600	(4%)
Unclassified misuse of material or product	6,400	(4%)
Heat source too close to combustibles	6,100	(4%)
Agriculture or land management burns	5,400	(3%)
Mechanical failure or malfunction	5,000	(3%)
Exposure fire	3,600	(2%)
Other known factor contributing to ignition	7,900	(5%)
Total fires	161,100	(100%)
Total factors*	168,000	(104%)

*Multiple entries are allowed, resulting in more factor entries than fires.

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Fires in which the factor contributing to ignition was undetermined, coded as “none,” or not reported were allocated proportionally among fires with known factor contributing to ignition. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 9.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Heat Source
2011-2015 Annual Averages

Heat Source	Fires	
Hot ember or ash	29,300	(18%)
Smoking materials	14,200	(9%)
Unclassified heat source	13,900	(9%)
Match	11,700	(7%)
Lighter	11,100	(7%)
Unclassified hot or smoldering object	10,700	(7%)
Arcing	10,500	(7%)
Flying brand, ember or spark	10,300	(6%)
Lightning	7,400	(5%)
Unclassified heat spread from another fire	7,300	(5%)
Spark, ember or flame from operating equipment	6,200	(4%)
Fireworks	5,700	(4%)
Heat from direct flame or convection currents	4,100	(3%)
Flame or torch used for lighting	3,600	(2%)
Heat or spark from friction	3,000	(2%)
Other known heat source	12,000	(7%)
Total	161,100	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Fires in which the heat source undetermined or not reported were allocated proportionally among fires with known heat source. The estimates of matches, lighters, smoking materials, flames or torches used for lighting and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 10.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Equipment Involved in Ignition
2011-2015 Annual Averages

Equipment Involved in Ignition	Fires	
No equipment involved in ignition	116,800	(73%)
Electrical distribution and lighting equipment	25,300	(16%)
Electrical power or utility line	17,400	(11%)
Wiring and related equipment other than power or utility lines	3,200	(2%)
Transformer or power supply	2,900	(2%)
Lamp, bulb or lighting	1,200	(1%)
Unclassified equipment involved in ignition	4,500	(3%)
Garden tool or agricultural equipment	7,100	(4%)
Lawn mower	3,400	(2%)
Hay processing equipment	2,500	(2%)
Shop tool or industrial equipment, including torches	4,600	(3%)
Torch, burner or soldering iron	2,500	(2%)
Other known equipment	2,800	(1%)
Total	161,100	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Fires in which the equipment involved in ignition was undetermined or not reported were allocated proportionally among fires with known equipment involved in ignition. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 11.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Item First Ignited
2011-2015 Annual Averages

Item First Ignited	Fires	
Light vegetation, including grass	113,800	(71%)
Heavy vegetation, including trees	19,900	(12%)
Unclassified organic materials	10,000	(6%)
Unclassified item first ignited	5,500	(3%)
Rubbish, trash, or waste	4,400	(3%)
Other known item first ignited	7,600	(5%)
Total	161,100	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Fires in which the item first ignited was undetermined or not reported were allocated proportionally among fires with known item first ignited. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 12.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Type of Material First Ignited
2011-2015 Annual Averages

Type of Material First Ignited	Fires	
Unclassified natural product	61,100	(38%)
Hay or straw	37,800	(23%)
Unclassified type of material first ignited	19,200	(12%)
Wood chips, sawdust or shavings	11,700	(7%)
Multiple types of material first ignited	6,600	(4%)
Round timber, including round posts or poles	5,600	(3%)
Unclassified processed wood or paper	3,800	(2%)
Wood pulp	2,500	(2%)
Other known type of material	12,800	(8%)
Total	161,100	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Fires in which the type of material first ignited was required but undetermined or not reported were allocated proportionally among fires with known type of material first ignited. Sums may not equal due to rounding errors.

Source: NFIRS 5.0 and NFPA fire experience survey.

Table 13.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Acres Burned
2011-2015 Annual Averages

Acres Burned	Fires	
Less than an acre	96,500	(60%)
1-10 acres	55,600	(35%)
11-50 acres	6,300	(4%)
More than 50 acres	2,600	(2%)
Total	161,100	(100%)

Table 14.
Local Fire Department Responses to Brush, Grass, and Forest Fires in the Southeast
by Number of Buildings Involved
2011-2015 Annual Averages

Number of Buildings Involved	Fires	
No buildings involved	155,600	(97%)
1 building	5,000	(3%)
2 buildings	300	(0%)
3 or more buildings	200	(0%)
Total	161,100	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Sums may not equal due to rounding errors. Fires in which the number of acres burned or buildings involved were unknown were allocated proportionally.

Source: NFIRS 5.0 and NFPA fire experience survey.

Acknowledgements

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem.

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