



**RESEARCH**

# **Brush, Grass and Forest Fires – Northeast Region Supporting Tables**

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

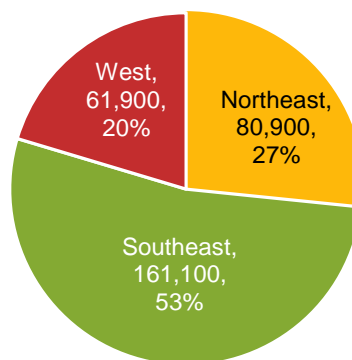
The tables that follow provide more details about local fire department responses to brush, grass and forest fires, including unclassified vegetation fires, in the Northeast region. The Wildland Fire Executive Council’s Cohesive Strategy Regions were used for this analysis. Please refer back to the text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

For more information, see the national report, national supporting tables, and comparable tables about these fires in the Southeast 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**



### Local Fire Department Responses to Brush, Grass, and Forest Fires in the Northeast, by

Table	Local Fire Department Responses to Brush, Grass and Forest Fires - The Northeast Region, by:	Page
Table 1.	Incident Type	2
Table 2.	Month	2
Table 3.	Day of Week	3
Table 4.	Alarm Time	4
Table 5.	Major Cause	5
Table 6.	Major Cause and Month	6
Table 7.	Cause of Ignition	8
Table 8.	Factor Contributing to Ignition	9
Table 9.	Heat Source	10
Table 10.	Equipment Involved in Ignition	11
Table 11.	Item First Ignited	12
Table 12.	Type of Material First Ignited	13
Table 13.	Acres Burned	14
Table 14.	Number of Buildings Involved	14

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

Incident Type	Fires	
Brush, or brush and grass mixture fire	40,100	(50%)
Grass fire	20,400	(25%)
Forest, woods or wildland fire	6,800	(8%)
Unclassified natural vegetation fire	13,600	(17%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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

Month	Fires	
January	2,400	(3%)
February	2,700	(3%)
March	9,500	(12%)
April	16,900	(21%)
May	10,200	(13%)
June	6,600	(8%)
July	8,900	(11%)
August	6,000	(7%)
September	4,700	(6%)
October	4,800	(6%)
November	6,300	(8%)
December	1,800	(2%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>
<b>Average</b>	<b>6,700</b>	<b>(8%)</b>

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 Northeast**  
**by Day of Week**  
**2011-2015 Annual Averages**

Day of Week	Fires	
Sunday	13,200	(16%)
Monday	11,600	(14%)
Tuesday	10,400	(13%)
Wednesday	10,800	(13%)
Thursday	10,400	(13%)
Friday	10,900	(13%)
Saturday	13,700	(17%)
Total	80,900	(100%)
Average	11,600	(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 Northeast**  
**by Alarm Time**  
**2011-2015 Annual Averages**

Alarm Time	Fires	
Midnight- 12:59 a.m.	1,000	(1%)
1:00-1:59 a.m.	700	(1%)
2:00-2:59 a.m.	500	(1%)
3:00-3:59 a.m.	400	(1%)
4:00-4:59 a.m.	400	(1%)
5:00-5:59 a.m.	500	(1%)
6:00-6:59 a.m.	800	(1%)
7:00-7:59 a.m.	1,000	(1%)
8:00-8:59 a.m.	1,200	(1%)
9:00-9:59 a.m.	1,500	(2%)
10:00-10:59 a.m.	2,400	(3%)
11:00-11:59 a.m.	3,900	(5%)
12:00-12:59 p.m.	5,900	(7%)
1:00-1:59 p.m.	7,900	(10%)
2:00-2:59 p.m.	9,200	(11%)
3:00-3:59 p.m.	9,200	(11%)
4:00-4:59 p.m.	8,500	(10%)
5:00-5:59 p.m.	7,100	(9%)
6:00-6:59 p.m.	5,500	(7%)
7:00-7:59 p.m.	4,300	(5%)
8:00-8:59 p.m.	3,400	(4%)
9:00-9:59 p.m.	2,600	(3%)
10:00-10:59 p.m.	1,900	(2%)
11:00-11:59 p.m.	1,300	(2%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>
<b>Average by alarm hour</b>	<b>3,400</b>	<b>(4%)</b>

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 Northeast, by Major Cause**  
**2011-2015 Annual Averages**

Major Cause	Fires	
Intentional	16,000	(20%)
Outside/open fire for debris or waste disposal	13,200	(16%)
Smoking materials	10,600	(13%)
Electrical power or utility line	6,100	(7%)
Agriculture or land management burns	3,300	(4%)
Garden tools or agricultural equipment	3,000	(4%)
Playing with heat source	2,800	(3%)
Rekindle	2,000	(2%)
Fireworks	1,800	(2%)
Outside/open fire for warming or cooking	1,600	(2%)
Spontaneous combustion or chemical reaction	1,400	(2%)
Lightning	1,300	(2%)
Shop tools and industrial equipment, including torches	1,300	(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 Northeast, by Major Cause and Month**  
**2011-2015 Annual Averages**

Peak months for each cause are in red.

<b>Cause</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Total</b>	<b>Total Fires</b>
Intentional	4%	4%	14%	21%	10%	7%	8%	7%	6%	7%	9%	3%	100%	16,000
Open burning	5%	5%	19%	26%	9%	5%	6%	5%	4%	6%	9%	3%	100%	13,200
Smoking materials	1%	2%	6%	19%	19%	12%	14%	10%	7%	5%	4%	1%	100%	10,600
Electrical power or utility line	3%	3%	7%	16%	12%	11%	16%	8%	7%	6%	9%	2%	100%	6,100
Agricultural burn	4%	3%	24%	32%	9%	4%	3%	3%	3%	5%	8%	3%	100%	3,300
Garden tool or agricultural equipment	1%	1%	7%	14%	9%	8%	13%	10%	8%	14%	14%	1%	100%	3,000
Playing with heat source	3%	3%	10%	18%	11%	10%	20%	6%	5%	5%	6%	2%	100%	2,800
Rekindle	3%	3%	11%	24%	12%	5%	9%	7%	7%	7%	10%	1%	100%	2,000
Fireworks	2%	1%	3%	6%	5%	14%	58%	5%	2%	2%	1%	1%	100%	1,800
Outside/open fire for warming or cooking	3%	2%	11%	22%	14%	5%	8%	7%	8%	9%	8%	2%	100%	1,600
Spontaneous combustion or chemical reaction	4%	2%	5%	18%	18%	12%	12%	9%	7%	5%	6%	3%	100%	1,400
Shop tools and industrial equipment, including torches	3%	5%	13%	22%	12%	9%	9%	10%	6%	6%	5%	0%	100%	1,300
Lightning	0%	0%	3%	10%	14%	17%	26%	19%	7%	3%	1%	0%	100%	1,300
Exposure	5%	6%	21%	24%	10%	3%	7%	5%	3%	3%	10%	3%	100%	900
All brush, grass and forest fires	3%	3%	12%	21%	13%	8%	11%	7%	6%	6%	8%	2%	100%	80,900

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 Northeast, 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	600	600	2,300	3,300	1,700	1,200	1,300	1,100	900	1,100	1,500	500	16,000
Open burning	600	700	2,500	3,400	1,200	600	800	700	500	700	1,300	300	13,200
Smoking materials	100	200	600	2,000	2,000	1,200	1,500	1,100	800	500	400	100	10,600
Electrical power or utility line	200	200	500	1,000	700	600	1,000	500	400	400	500	100	6,100
Agricultural burn	100	100	800	1,100	300	100	100	100	100	200	300	100	3,300
Garden tool or agricultural equipment	0	0	200	400	300	200	400	300	200	400	400	0	3,000
Playing with heat source	100	100	300	500	300	300	600	200	100	100	200	100	2,800
Rekindle	100	100	200	500	200	100	200	100	100	100	200	0	2,000
Fireworks	0	0	100	100	100	200	1,000	100	0	0	0	0	1,800
Outside/open fire for warming or cooking	0	0	200	400	200	100	100	100	100	100	100	0	1,600
Spontaneous combustion or chemical reaction	100	0	100	300	300	200	200	100	100	100	100	0	1,400
Shop tools and industrial equipment, including torches	0	100	200	300	200	100	100	100	100	100	100	0	1,300
Lightning	0	0	0	100	200	200	300	200	100	0	0	0	1,300
Exposure	0	100	200	200	100	0	100	0	0	0	100	0	900
All brush, grass and forest fires	2,400	2,700	9,500	16,900	10,200	6,600	8,900	6,000	4,700	4,800	6,300	1,800	80,900

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 Northeast, by Cause of Ignition**  
**2011-2015 Annual Averages**

Cause of Ignition	Fires	
Unintentional	50,000	(62%)
Intentional	16,000	(20%)
Unclassified cause	6,600	(8%)
Act of nature	5,600	(7%)
Failure of equipment or heat source	2,600	(3%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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 Northeast**  
**by Factor Contributing to Ignition**  
**2011-2015 Annual Averages**

Factor Contributing	Fires	
Abandoned or discarded material or product	14,000	(17%)
Outside/open fire for debris or waste disposal	13,200	(16%)
High wind	10,700	(13%)
Unclassified natural condition	8,700	(11%)
Unclassified factor contributed to ignition	5,900	(7%)
Unclassified misuse of material or product	5,000	(6%)
Fire spread or control, other	4,400	(5%)
Heat source too close to combustibles	3,500	(4%)
Agriculture or land management burns	3,300	(4%)
Electrical failure or malfunction	3,200	(4%)
Playing with heat source	2,800	(3%)
Rekindle	2,000	(2%)
Mechanical failure or malfunction	1,700	(2%)
Outside/open fire for warming or cooking	1,600	(2%)
Storm	1,400	(2%)
Other known factor contributing to ignition	3,100	(4%)
<b>Total fires</b>	<b>80,900</b>	<b>(100%)</b>
<b>Total factors*</b>	<b>84,600</b>	<b>(104%)</b>

\*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 Northeast**  
**by Heat Source**  
**2011-2015 Annual Averages**

Heat Source	Fires	
Hot ember or ash	16,700	(21%)
Smoking materials	10,600	(13%)
Match	7,900	(10%)
Unclassified hot or smoldering object	6,700	(8%)
Unclassified heat source	6,400	(8%)
Flying brand, ember or spark	5,300	(7%)
Lighter	4,700	(6%)
Unclassified heat spread from another fire	3,200	(4%)
Arcing	3,000	(4%)
Flame or torch used for lighting	2,900	(4%)
Spark, ember or flame from operating equipment	1,900	(2%)
Fireworks	1,800	(2%)
Spontaneous combustion or chemical reaction	1,400	(2%)
Heat from direct flame or convection currents	1,300	(2%)
Lightning	1,300	(2%)
Other known heat source	5,800	(7%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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 Northeast**  
**by Equipment Involved in Ignition**  
**2011-2015 Annual Averages**

Equipment Involved in Ignition	Fires	
<b>No equipment involved in ignition</b>	<b>64,600</b>	<b>(80%)</b>
<b>Electrical distribution and lighting equipment</b>	<b>9,100</b>	<b>(11%)</b>
Electrical power or utility line	6,100	(7%)
Lamp, bulb or lighting	800	(1%)
Transformer or power supply	700	(1%)
Wiring and related equipment other than power or utility lines	1,300	(2%)
<b>Unclassified equipment involved in ignition</b>	<b>1,700</b>	<b>(2%)</b>
<b>Garden tool or agricultural equipment</b>	<b>3,000</b>	<b>(4%)</b>
Lawn mower	1,400	(2%)
Hay processing equipment	700	(1%)
<b>Shop tool or industrial equipment, including torches</b>	<b>1,300</b>	<b>(2%)</b>
Torch, burner or soldering iron	500	(1%)
<b>Other known equipment involved in ignition</b>	<b>3,000</b>	<b>(4%)</b>
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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 Northeast**  
**by Item First Ignited**  
**2011-2015 Annual Averages**

Item First Ignited	Fires	
Light vegetation including grass	50,400	(62%)
Unclassified organic materials	9,700	(12%)
Heavy vegetation including trees	8,700	(11%)
Unclassified item first ignited	3,500	(4%)
Chips, including wood chips	3,000	(4%)
Rubbish, trash, or waste	1,900	(2%)
Agricultural crop, including fruits and vegetables	1,500	(2%)
Other known item first ignited	2,300	(3%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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 Northeast**  
**by Type of Material First Ignited**  
**2011-2015 Annual Averages**

Type of Material First Ignited	Fires	
Unclassified natural product	30,200	(37%)
Wood chips, sawdust or shavings	18,000	(22%)
Unclassified type of material first ignited	9,200	(11%)
Hay or straw	6,900	(9%)
Multiple types of material first ignited	3,500	(4%)
Round timber, including round posts or poles	3,000	(4%)
Unclassified processed wood or paper	2,900	(4%)
Wood pulp	2,000	(2%)
Other known type of material	5,400	(7%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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 Northeast**  
**by Acres Burned**  
**2011-2015 Annual Averages**

Acres Burned	Fires	
Less than an acre	50,000	(62%)
1-10 acres	27,200	(34%)
11-50 acres	2,900	(4%)
More than 50 acres	800	(1%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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

Number of Buildings Involved	Fires	
No buildings involved	78,200	(97%)
1 building	2,600	(3%)
2 buildings	100	(0%)
3 or more buildings	100	(0%)
<b>Total</b>	<b>80,900</b>	<b>(100%)</b>

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.

We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

To learn more about research at NFPA visit [www.nfpa.org/research](http://www.nfpa.org/research).

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