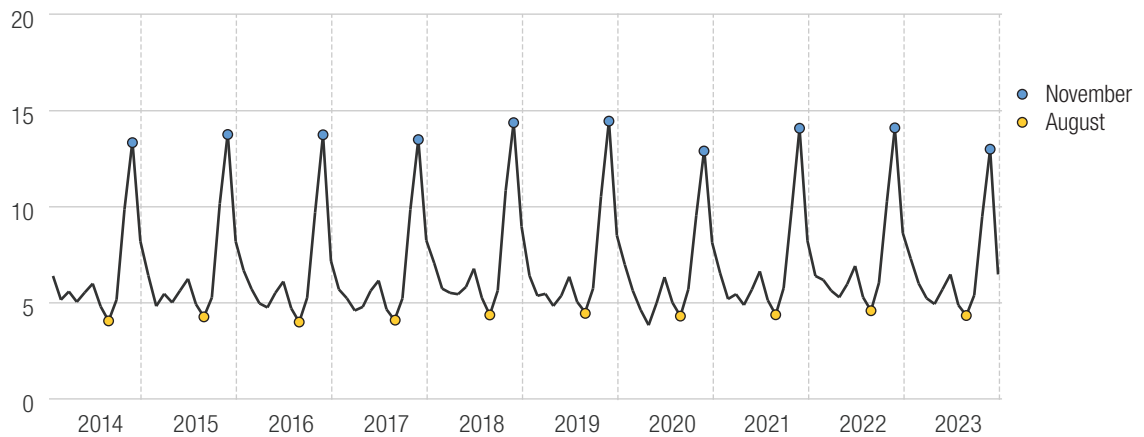




Losses due to animal strikes

Animal strike claims exhibit significant seasonal variation, with claims peaking in the month of November. This analysis of claims from 2014 through 2023 shows that the average claim frequency in November was more than twice the average for the study period and more than 3 times as high as the average for August, when such claims are least likely to be filed. Although information on the type of animal involved is not available, most of these crashes are believed to involve deer, and the peak in claim frequency coincides with their mating season. West Virginia, Iowa, and South Dakota are the states with the highest November claim frequency for animal strikes. Over the 10 year study period, 2020 and 2023 had the lowest November animal strike claim frequency (13 claims per 1,000 insured vehicle years), 10% below the peak in 2019.

National animal strike claim frequency, January 2014–December 2023



► Introduction

Damage caused to vehicles in collisions with animals is insured under comprehensive coverage. This Highway Loss Data Institute (HLDI) bulletin presents the results of an analysis of comprehensive claims to determine whether losses from vehicle–animal collisions vary significantly by calendar month and whether these variations differ among states and counties. HLDI first reported on losses due to animal strikes in December 2008. The most recent update was published in April 2023. This bulletin updates the prior results but restricts the data to the 10 most recent calendar years. The model years of the vehicles studied vary by calendar year; only vehicles up to 18 years old are included. The trends shown in the current study are consistent with previous reports.

► Method

Insurance data

Automobile insurance covers damage to vehicles and property in crashes as well as injuries to people involved in the crashes. Different insurance coverages pay for vehicle damage versus injuries, and different coverages may apply depending on who is at fault. The current study is based on comprehensive coverage. Comprehensive coverage insures against theft and physical damage to the insured vehicle that occurs for reasons other than crashes. Animal strikes, unlike collisions with guard rails and other stationary objects, are also covered under comprehensive coverage.

Of the 35 companies that currently report information on losses under comprehensive coverage to HLDI, only 26 provide information on animal strikes. Vehicle exposure from these 26 companies represents 51% of the HLDI database.

All Massachusetts data is supplied to HLDI by the Automobile Insurance Bureau of Massachusetts. It does not provide data on animal strikes, and therefore Massachusetts has been excluded in this study.

Insurance measures

Claim frequency is defined as the number of claims for a group of vehicles divided by the exposure for that group and is expressed as claims per 1,000 insured vehicle years. Exposure is the length of time a vehicle is insured under a given coverage type and is measured in insured vehicle years. An insured vehicle year is one vehicle insured for 1 year, two vehicles insured for 6 months, etc. Claim severity is the total of all loss payments made for the claims divided by the number of claims paid. Claim severity is measured in dollars paid. It is not a measure of vehicle speed in a crash or injury severity. Overall losses are the product of claim frequency and claim severity and are expressed as dollars per insured vehicle year. This is an insurance measure and represents the average annual dollars spent to settle claims.

This study was based on more than 573 million insured vehicle years and more than 3.8 million claims. Total exposure measured in insured vehicle years and claims by calendar year are shown in **Table 1**.

	Exposure (insured vehicle years)	Claims
2014	47,776,435	316,619
2015	49,982,378	335,899
2016	52,307,132	342,317
2017	54,511,535	354,083
2018	56,117,355	402,438
2019	62,285,593	429,869
2020	63,145,345	411,525
2021	62,302,117	425,575
2022	63,172,309	448,534
2023	61,603,920	406,243
Total	573,204,119	3,873,102

Subject vehicles

The study period was from January 2014 through December 2023 and included passenger vehicles up to 18 years old. For example, in calendar year 2014, we looked at model years 1996 to 2015, while in calendar year 2023, we considered model years 2005 to 2024. Motorcycles were not included.

► Results

Figure 1 shows claim frequency for animal strikes per 1,000 insured vehicle years during the 10 most recent calendar years. Claim frequency followed a consistent pattern — rising dramatically in October, peaking in November, and then dropping off in December and January. Claim frequency during the study period averaged 6.8 claims per 1,000 insured vehicle years. Over the 10-year study period, 2020 and 2023 had the lowest November animal strike claim frequency (13 claims per 1,000 insured vehicle years), 10% below the peak in 2019. Claim frequency was lowest in August for all years examined except for 2020, when it was lowest in April.

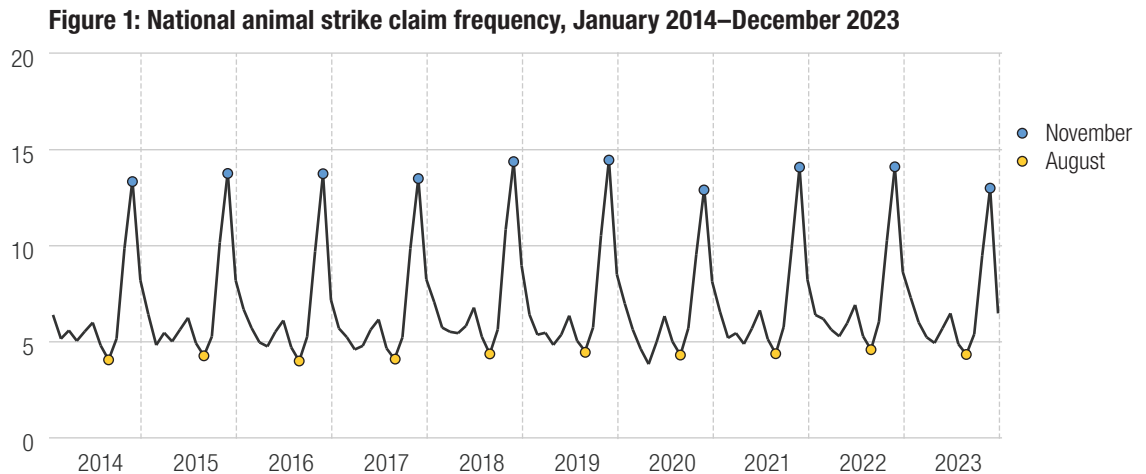


Figure 2 averages the monthly variation in animal strike claim frequency across the 10-year study period. Claim frequency was lowest in August (4.3 claims per 1,000 insured vehicle years) and highest in November (13.8 claims per 1,000 insured vehicle years). The average November claim frequency was more than 3 times as high as the August claim frequency.

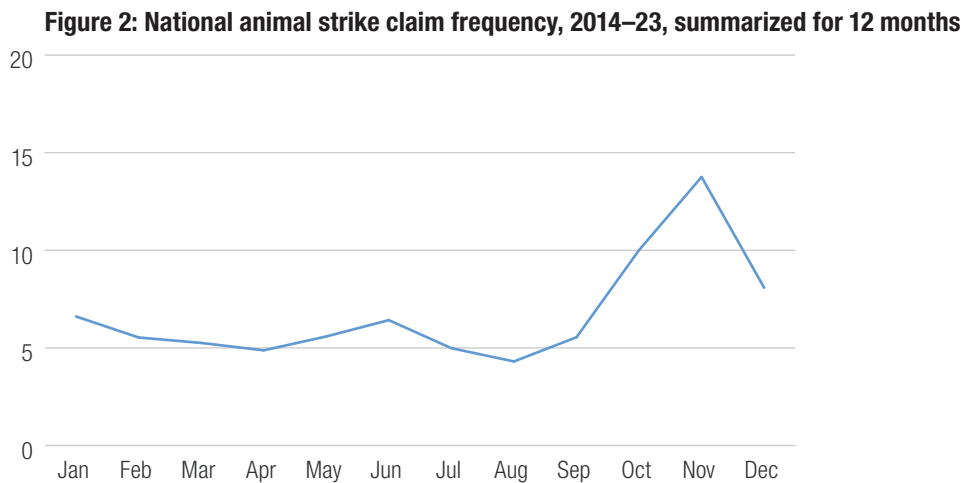


Figure 3 shows animal strike claim severity during the 10-year study period. Monthly variation in claim severity followed a pattern similar to the one observed for claim frequencies. In general, claim severity has increased over time, likely due to increasing vehicle prices. Claim severity during the study period averaged \$4,373 per claim. In 2023, the most recent year, the average claim severity was \$5,980, compared with \$3,176 in 2014.

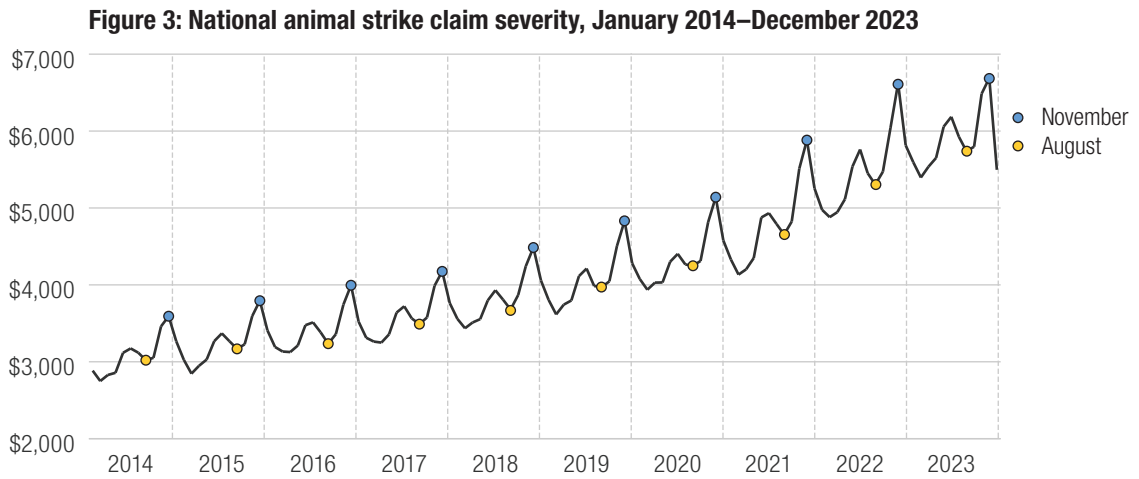


Figure 4 averages the monthly variation in claim severity for animal strikes across the 10-year study period. Like claim frequency, claim severity was highest in November (\$4,997 per claim). However, unlike claim frequency, claim severity was lowest in February (\$3,854). The variation between minimum and maximum monthly claim severity (30%) was not nearly as pronounced as the variation for claim frequency.

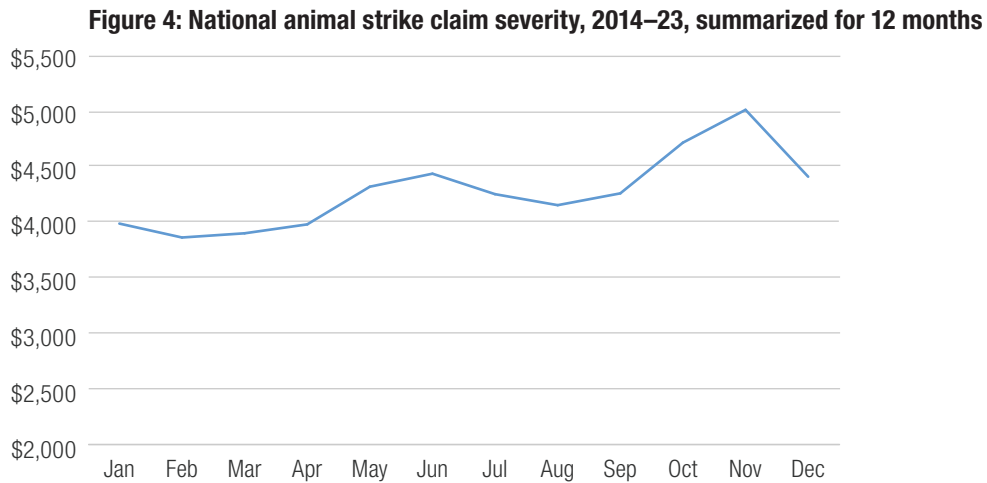


Figure 5 shows overall losses for animal strikes during the 10-year study period. The monthly variation in overall losses followed the same pattern as claim frequency. Overall losses during the study period averaged \$30 per insured vehicle year.

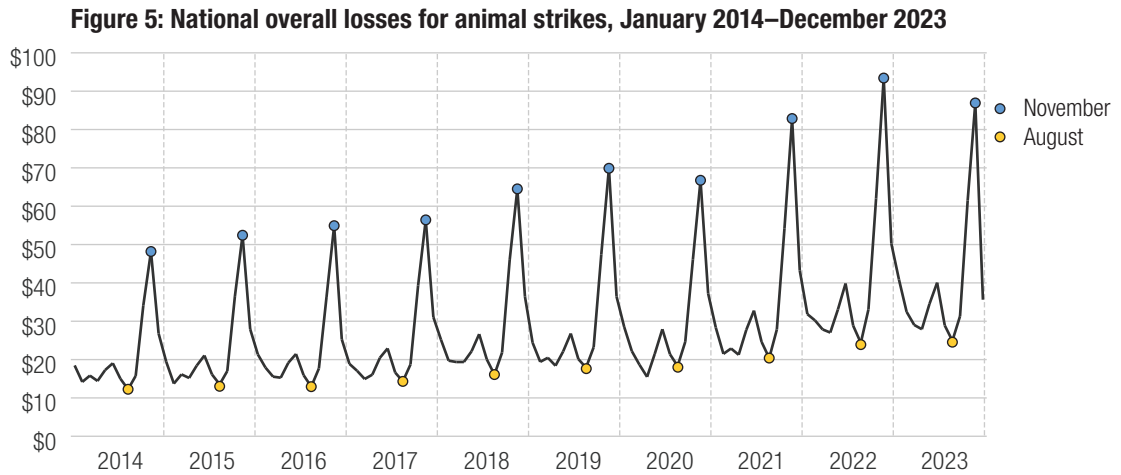


Figure 6 averages the monthly variation in overall losses for animal strikes across the 10-year study period. Overall losses were lowest in August (\$18 per insured vehicle years) and highest in November (\$69). In November, overall losses were nearly 4 times the overall losses in August.



Table 2 summarizes the animal strike loss results by month. The average claim frequency across all 12 months was 6.8 claims per 1,000 years of exposure with a claim severity of \$4,373, resulting in overall losses of \$30.

Table 2: Animal strike losses, 2014–23, summarized for 12 months			
	Claim frequency	Claim severity	Overall losses
January	6.6	\$3,979	\$26.30
February	5.5	\$3,854	\$21.33
March	5.3	\$3,892	\$20.45
April	4.9	\$3,972	\$19.37
May	5.6	\$4,309	\$24.07
June	6.4	\$4,425	\$28.42
July	5.0	\$4,242	\$21.15
August	4.3	\$4,144	\$17.85
September	5.5	\$4,249	\$23.57
October	10.0	\$4,703	\$47.09
November	13.8	\$4,997	\$68.75
December	8.1	\$4,399	\$35.55
Total	6.8	\$4,373	\$29.55

Table 3 lists animal strike losses for the 10 states with the highest claim frequencies in November. National data have been included for comparison. Only states with at least 100 claims in November for each year are included in the national total and in the top 10.

West Virginia tops the list with a November claim frequency of 44.8 — more than 3 times both the national average for November and the state’s August claim frequency. North Dakota, which is 10th on the list, had a November claim frequency that was about 70% higher than the national average for November. The largest claim frequency difference between August and November was observed in Pennsylvania, where the November claim frequency was nearly 4 times as high as the August claim frequency. Among the 10 states, there was not as much variation in claim severity between August and November as there was in claim frequency. Differences between August and November overall losses among the states followed a similar pattern to claim frequencies.

Table 3: Animal strike losses for the 10 states with the highest animal strike claim frequencies in November, 2014–23									
	Claim frequency			Claim severity			Overall losses		
	August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
West Virginia	14.8	44.8	202.4%	\$3,784	\$4,623	22.2%	\$56	\$207	269.5%
Iowa	9.2	32.5	252.4%	\$4,393	\$5,481	24.8%	\$41	\$178	339.7%
South Dakota	11.4	31.3	174.3%	\$4,842	\$5,670	17.1%	\$55	\$178	221.2%
Pennsylvania	7.3	28.7	290.1%	\$3,820	\$4,611	20.7%	\$28	\$132	370.9%
Kentucky	7.5	28.6	283.6%	\$3,996	\$5,122	28.2%	\$30	\$147	391.6%
Montana	14.7	26.0	76.2%	\$5,642	\$5,896	4.5%	\$83	\$153	84.2%
Wisconsin	7.6	24.7	226.1%	\$4,092	\$5,083	24.2%	\$31	\$126	305.0%
Arkansas	6.9	23.7	243.2%	\$4,162	\$4,923	18.3%	\$29	\$116	306.0%
Missouri	6.3	23.6	271.9%	\$4,012	\$5,116	27.5%	\$25	\$121	374.3%
North Dakota	10.6	23.6	122.5%	\$4,723	\$5,828	23.4%	\$50	\$137	174.5%
National*	4.4	14.0	220.3%	\$4,130	\$4,992	20.8%	\$18	\$70	287.1%

*Only includes states with ≥100 claims in each calendar year.

Map 1 illustrates the November animal strike claim frequency by state. States that did not have a minimum of 100 claims in November for each year are noted in the map.

Map 1: November animal strike frequency by state, 2014–23

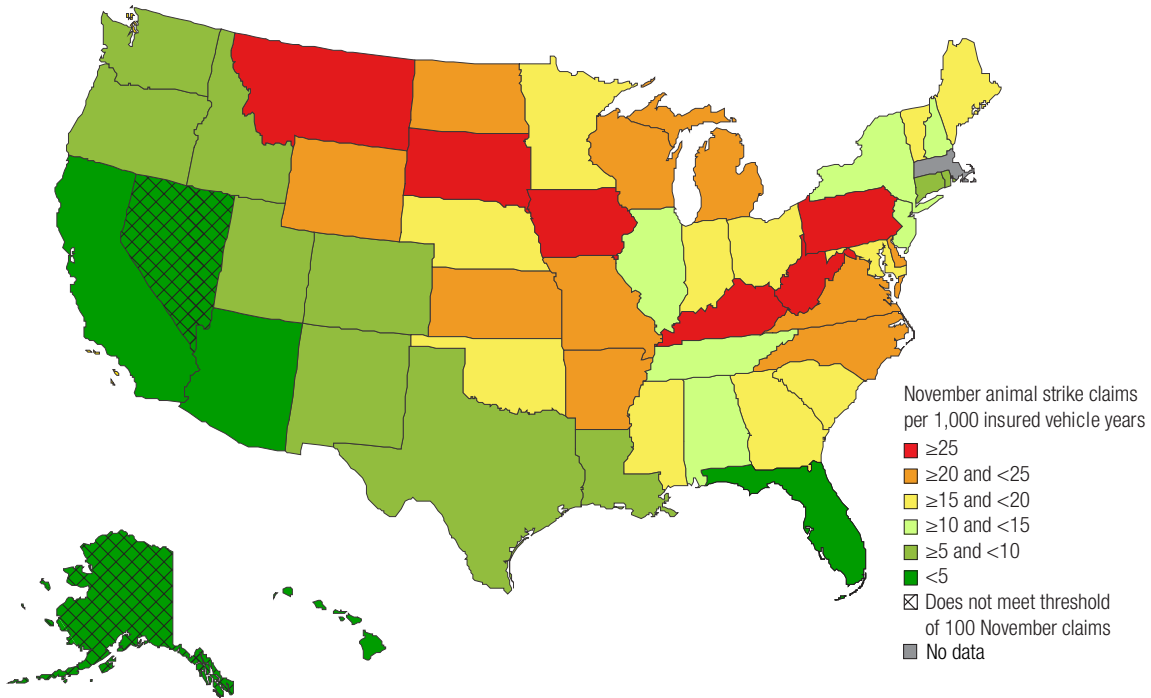


Figure 7 shows claim frequencies for animal strikes during the 10-year study period for the three states with the highest November claim frequencies (West Virginia, Iowa, and South Dakota) and two states with very low November claim frequencies (Florida and Arizona). Claim frequencies for West Virginia, Iowa, and South Dakota followed the national trend but were consistently higher than the national average. There was little variation in claim frequency for Florida and Arizona.

Figure 7: Animal strike claim frequencies in selected states compared with national average, January 2014–December 2023

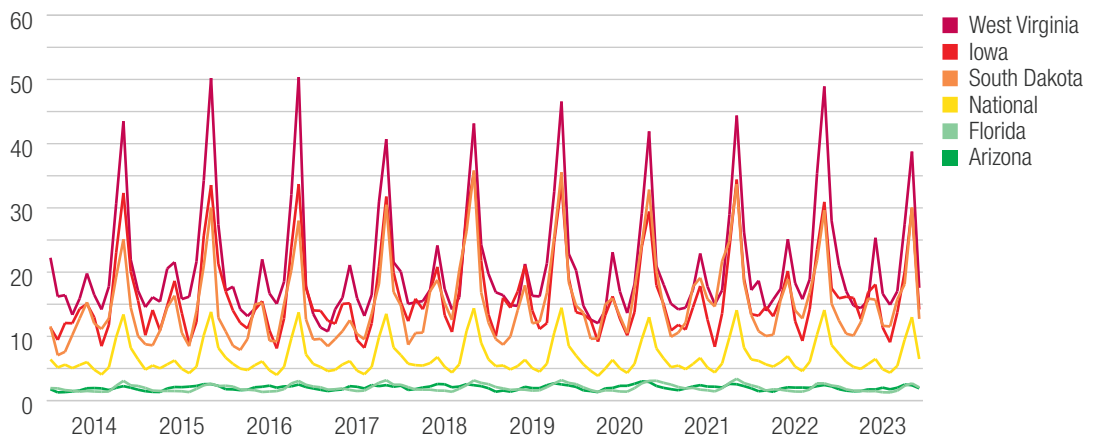


Table 4 lists animal strike losses for the 10 counties with the highest November animal strike claim frequencies. National data have been included for comparative purposes. While West Virginia, Iowa, and South Dakota appear in the list of the states with the highest animal strike claim frequencies in November, no counties from those states appear in **Table 4**. To appear on the top 10 list, counties had to have at least of 100 claims for each calendar year.

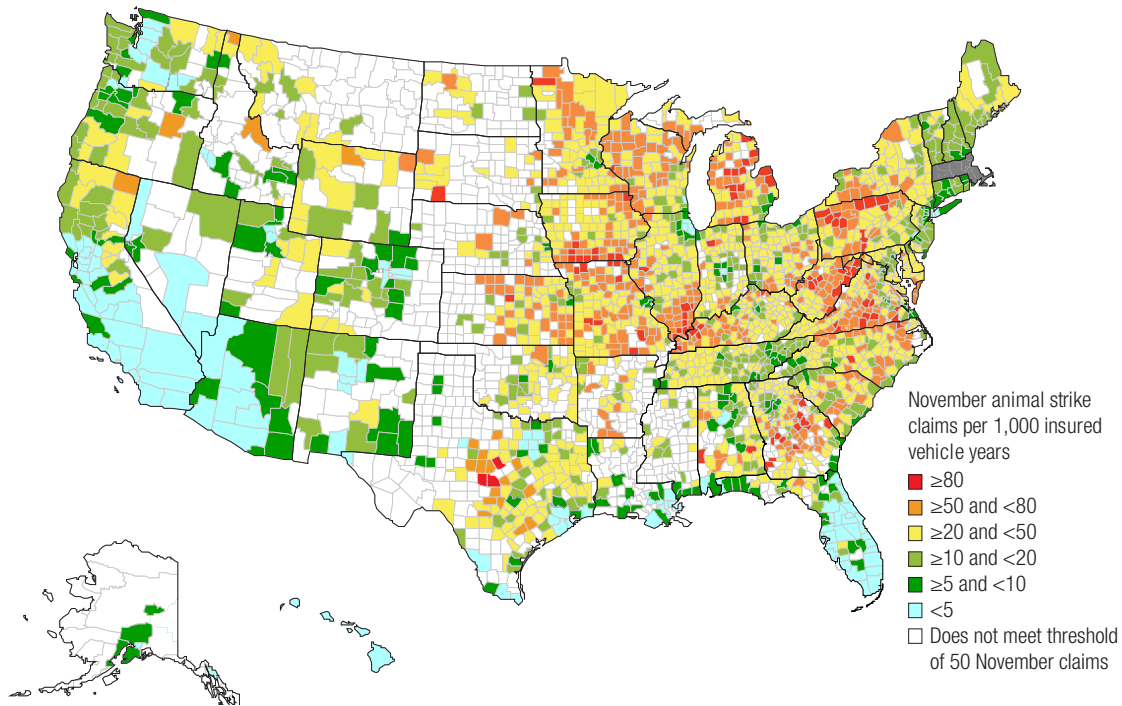
Nine of the 10 counties on the list are located in Pennsylvania. Crawford County, Pennsylvania, tops the list with a November claim frequency of 91 — about 6.5 times the national average for November and more than 3 times the county’s August claim frequency. All 10 counties had November claim frequencies that were more than twice the national average. Among the 10 counties, there was not as much variation in claim severity as there was for claim frequency. Differences between August and November overall losses among the counties followed a similar pattern to that of claim frequency.

Table 4: Animal strike losses for the 10 counties with the highest November animal strike claim frequencies, 2014–23

State	County	Claim frequency			Claim severity			Overall losses		
		August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
PA	Crawford	28.5	91.0	219.2%	\$3,772	\$4,565	21.0%	\$108	\$415	286.3%
PA	Bradford	24.8	89.3	259.9%	\$3,693	\$4,226	14.4%	\$92	\$378	311.9%
PA	Indiana	21.4	78.0	264.7%	\$3,724	\$4,265	14.5%	\$80	\$333	317.7%
PA	Somerset	21.6	72.6	235.5%	\$3,615	\$4,756	31.6%	\$78	\$345	341.4%
PA	Mercer	12.9	51.5	300.2%	\$3,731	\$4,388	17.6%	\$48	\$226	370.6%
PA	Butler	12.8	49.0	281.3%	\$4,164	\$4,607	10.6%	\$53	\$226	321.9%
PA	Fayette	10.2	47.1	360.9%	\$4,085	\$5,098	24.8%	\$42	\$240	475.2%
PA	Monroe	11.2	36.5	225.7%	\$4,219	\$4,975	17.9%	\$47	\$181	284.0%
PA	Westmoreland	8.7	35.9	315.0%	\$3,912	\$4,578	17.0%	\$34	\$165	385.7%
NJ	Hunterdon	8.7	35.7	312.5%	\$4,051	\$4,917	21.4%	\$35	\$176	400.7%
National		4.4	14.0	220.3%	\$4,130	\$4,992	20.8%	\$18	\$70	287.1%

Map 2 illustrates November animal strike claim frequency by county. A lower exposure and claim threshold was applied to the map. Northern and western Pennsylvania, northern West Virginia, and southern Iowa appear to have the highest concentration of high claim frequencies.

Map 2: November animal strike frequency by county, 2014–23



► Discussion

November is the peak month for animal strikes. Insurance claims for animal collisions are more than twice as high during November as in a typical month earlier in the year. The insurance claims data available to HLDI do not specify the animals involved, but deer are likely the main ones. The November peak in animal strike claims coincides with the deer mating season, when bucks are likely to be roaming. That may also help explain the rise in claim severity at this time. A greater proportion of the struck animals in October and November are likely to be deer, which cause more severe damage than smaller animals.

References

Highway Loss Data Institute. (2008). Losses due to animal strikes. *Loss Bulletin*, 25(8).

Highway Loss Data Institute. (2023). Losses due to animal strikes. *Loss Bulletin*, 40(5).



4121 Wilson Boulevard, 6th floor
Arlington, VA 22203
+1 703 247 1500
iihs-hldi.org

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