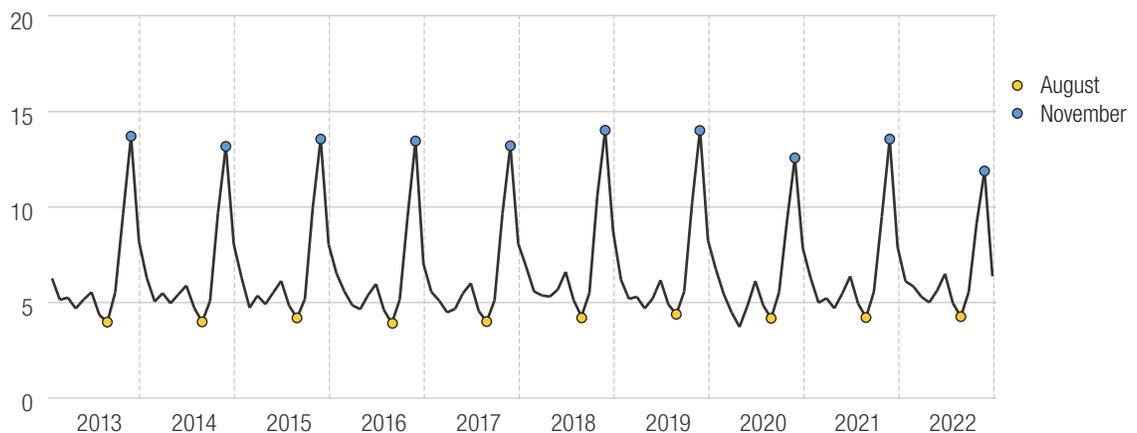




Losses due to animal strikes

Animal strike claims exhibit significant seasonal variation, with claims peaking in the month of November. This analysis of claims from 2013 through 2022 shows that the average claim frequency in November was more than twice the average for the study period and nearly 3.2 times 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. November claim frequency was lowest in 2022 (11.9 claims per 1,000 insured vehicle years). Claim frequency was lowest in August for all years examined, except for 2020, when claim frequency was lowest in April.

National animal strike claim frequency, January 2013–December 2022



► 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, and this report has been updated 12 times since then. The most recent update was published in December 2022. 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 31 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 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 37 companies that currently report information on losses under comprehensive coverage to HLDI, only 25 provide information on animal strikes. Vehicle exposure from these 25 companies represents 40 percent of the HLDI database.

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 claims divided by the number of claims paid. Claim severity is measured in dollars per claim. 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 579 million insured vehicle years and more than 3.7 million claims. Total exposure measured in insured vehicle years and claims by calendar year are shown in **Table 1**.

	Exposure (insured vehicle years)	Claims
2013	45,617,687	296,975
2014	49,192,898	320,097
2015	51,569,247	339,892
2016	54,142,067	346,698
2017	56,560,564	358,804
2018	58,425,094	408,132
2019	65,211,505	436,695
2020	66,430,537	418,801
2021	66,037,188	433,699
2022	65,832,928	419,564
Total	579,019,716	3,779,357

Subject vehicles

The study period was from January 2013 through December 2022 and included passenger vehicles up to 31 years old. For example, in calendar year 2013, we looked at model years 1982 to 2014, while in calendar year 2022, we considered model years 1991 to 2023. 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 6.5 claims per 1,000 insured vehicle years. November claim frequency was lowest in 2022 (11.9 claims per 1,000 insured vehicle years). Claim frequency was lowest in August for all years examined except for 2020, when it was lowest in April.

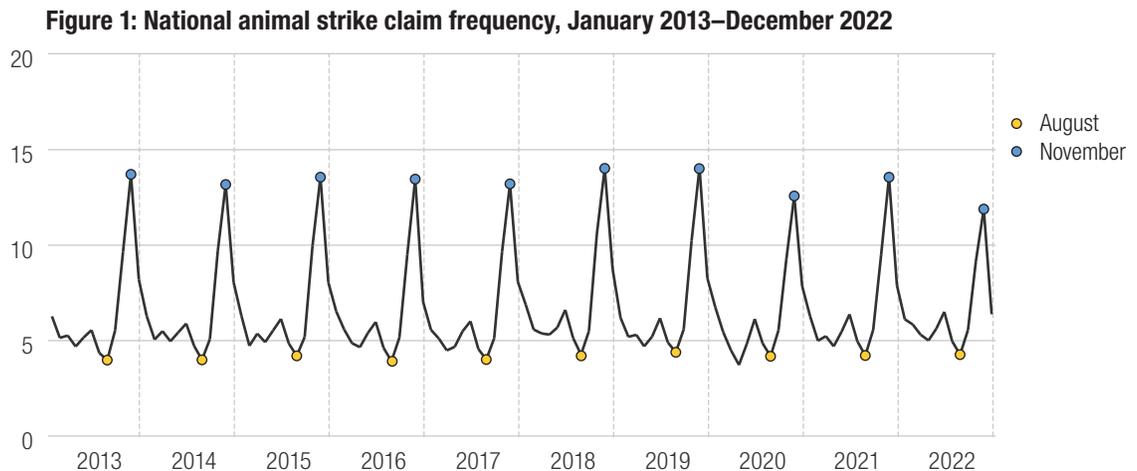


Figure 2 averages the monthly variation in animal strike claim frequency across the 10-year study period. Claim frequency was on average lowest in August (4.2 claims per 1,000 insured vehicle years) and highest in November (13.3 claims). The average November claim frequency was nearly 3.2 times the average August claim frequency.

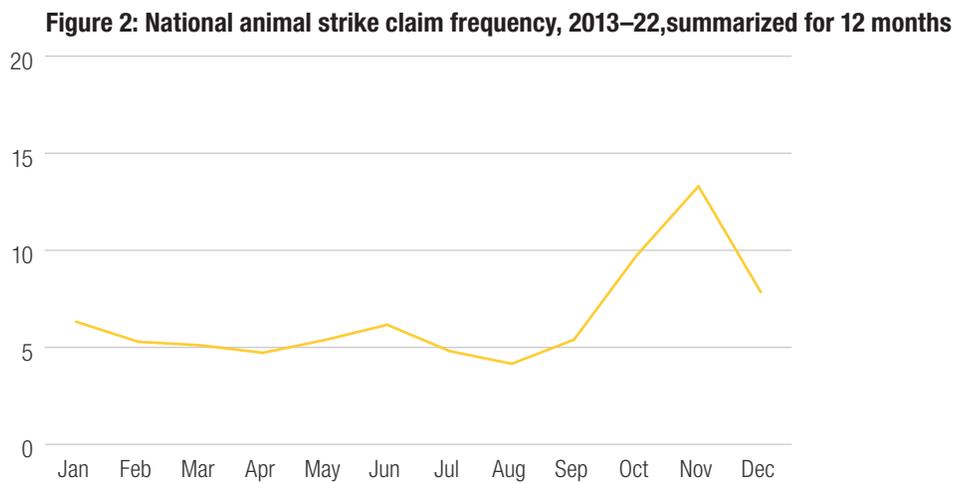


Figure 3 shows animal strike claim severity during the 10-year study period. Monthly variation in claim severity followed a pattern similar to the one observed for claim frequency. In general, claim severity has increased over time, likely due to increasing vehicle prices. Claim severity during the study period averaged \$4,038 per claim. In 2022, the most recent year, the average claim severity was \$5,447, compared with \$3,022 in 2013.

Figure 3: National animal strike claim severity, January 2013–December 2022

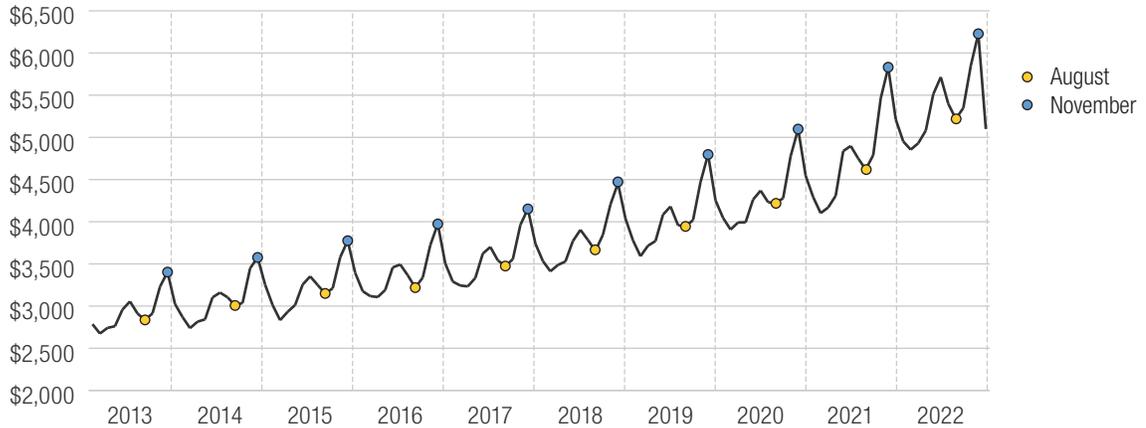


Figure 4 averages the monthly variation in claim severity for animal strikes across the 10-year study period. Like claim frequency, claim severity was highest in November (\$4,600 per claim). However, unlike claim frequency, claim severity was lowest in February (\$3,552). The variation between minimum and maximum monthly claim severity (30 percent) was not nearly as pronounced as the corresponding variation for claim frequency.

Figure 4: National animal strike claim severity, 2013–22, summarized for 12 months

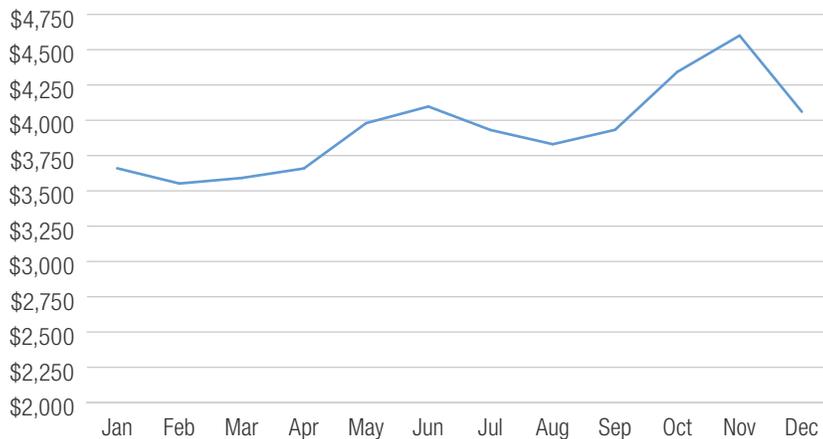


Figure 5 shows overall losses for animal strikes during the 10-year study period. The monthly variation in overall losses followed the same pattern as claim frequency. Overall losses during the study period averaged \$26.35 per insured vehicle year.

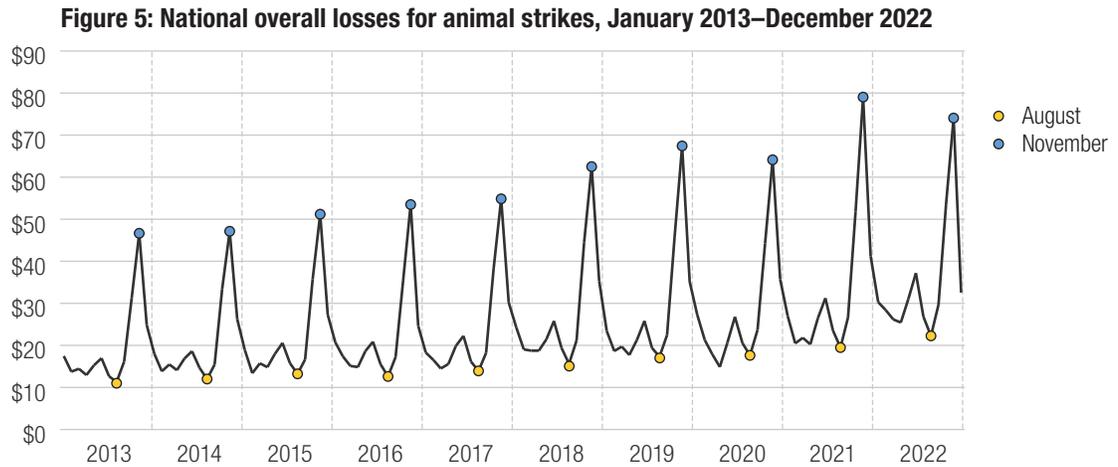


Figure 6 averages the monthly variation in overall losses for animal strikes across the 10-year study period. Overall losses were lowest in August (\$15.91 per insured vehicle year) and highest in November (\$61.19). In November, overall losses were almost 4 times the overall losses in August.

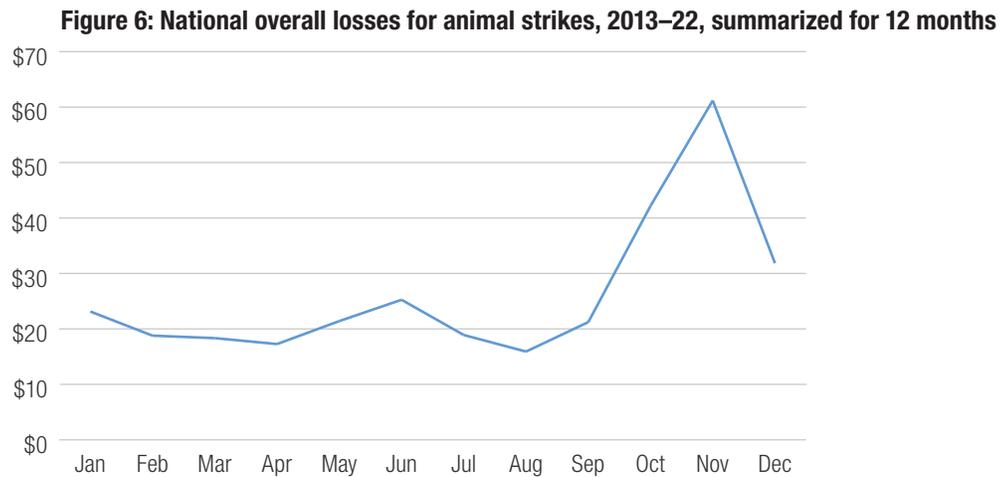


Table 2 summarizes the animal strike loss results by month. The average claim frequency across all 12 months was 6.5 claims per 1,000 years of exposure with a claim severity of \$4,038, resulting in overall losses of \$26.35.

Table 2: Animal strike losses, 2013–22, summarized for 12 months			
	Claim frequency	Claim severity	Overall losses
January	6.3	\$3,660	\$23.14
February	5.3	\$3,552	\$18.78
March	5.1	\$3,591	\$18.34
April	4.7	\$3,659	\$17.27
May	5.4	\$3,980	\$21.41
June	6.2	\$4,098	\$25.25
July	4.8	\$3,931	\$18.90
August	4.2	\$3,830	\$15.91
September	5.4	\$3,932	\$21.22
October	9.7	\$4,343	\$42.17
November	13.3	\$4,600	\$61.19
December	7.8	\$4,061	\$31.84
Total	6.5	\$4,038	\$26.35

Table 3 lists comprehensive coverage losses for the 10 states with the highest claim frequencies for animal strikes 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.

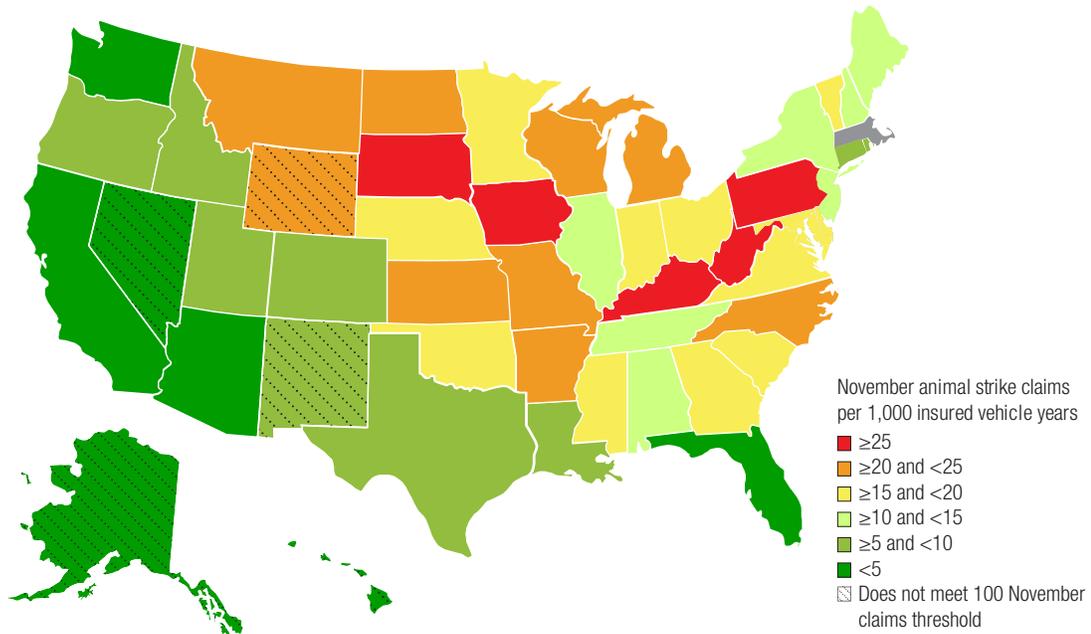
West Virginia tops the list with a November claim frequency of 44.1 — more than 3 times both the national average for November and the state’s August claim frequency. North Dakota, which is 10th on the list, had a November claim frequency that was about 60 percent higher than the national average for November. The largest claim frequency difference between August and November was observed in Pennsylvania, where the November claim frequency was almost 4 times 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, 2013–22									
	Claim frequency			Claim severity			Overall losses		
	August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
West Virginia	14.4	44.1	207.0%	\$3,489	\$4,232	21.3%	\$50	\$187	272.4%
Iowa	9.0	31.6	253.2%	\$4,107	\$5,063	23.3%	\$37	\$160	335.3%
South Dakota	11.0	30.0	172.9%	\$4,446	\$5,169	16.3%	\$49	\$155	217.3%
Pennsylvania	7.0	27.9	299.2%	\$3,522	\$4,263	21.0%	\$25	\$119	383.2%
Kentucky	7.1	27.6	289.1%	\$3,655	\$4,652	27.3%	\$26	\$129	395.3%
Montana	14.2	24.2	70.2%	\$5,303	\$5,422	2.2%	\$75	\$131	74.0%
Arkansas	7.0	23.0	228.2%	\$3,777	\$4,659	23.4%	\$26	\$107	304.8%
Wisconsin	6.6	22.4	238.0%	\$3,835	\$4,591	19.7%	\$25	\$103	304.5%
Michigan	6.1	22.3	262.8%	\$3,652	\$4,735	29.6%	\$22	\$105	370.3%
North Dakota	9.7	21.8	124.9%	\$4,474	\$5,427	21.3%	\$43	\$118	172.8%
National*	4.2	13.6	222.8%	\$3,808	\$4,590	20.5%	\$16	\$62	289.1%

*Only includes states with ≥100 claims in each November

Map 1 illustrates the November animal strike claim frequency by state. No threshold was applied to the map because results are expressed in ranges. 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, 2013–22



■ Note: 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.

Note: States are included on this map even if they did not meet the minimum claims threshold needed in Table 3.

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 2013–December 2022

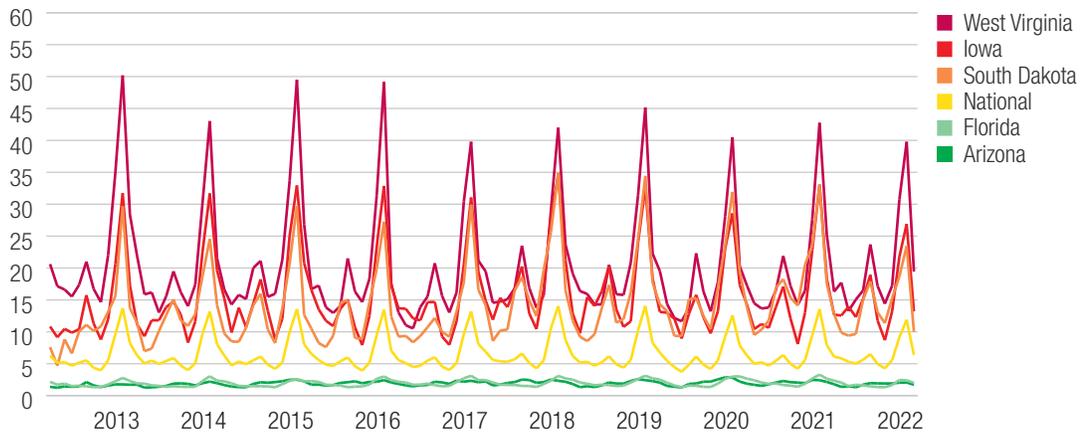


Table 4 lists animal strike losses for the 10 counties with the highest November animal strike claim frequencies. National data have been included for comparative purposes. While West Virginia, Iowa, and South Dakota appear in the list of the states with the highest animal strike claim frequencies in November, none of the counties from those states appear in **Table 4**. At the county level, none of the West Virginia, Iowa, or South Dakota counties had enough data to appear on the county list. To appear on the top 10 list, counties had to have at least 100 claims in November for each calendar year.

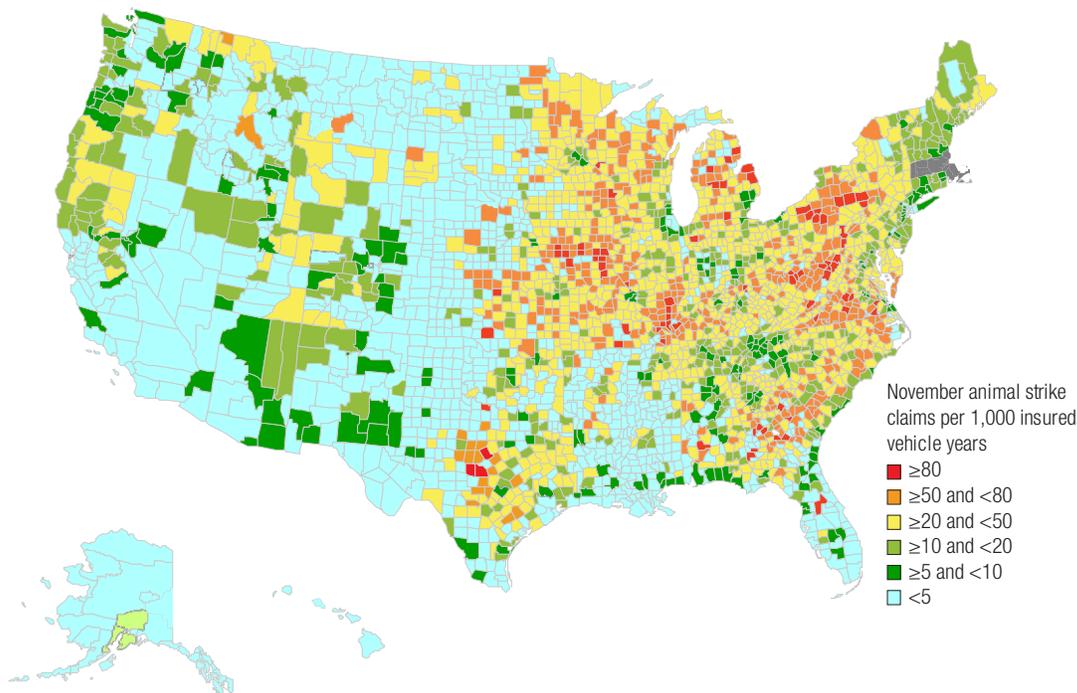
Crawford County, Pennsylvania, tops the list with a November claim frequency of 86.9 — more than 6.4 times the national average for November and about 3.2 times the county’s August claim frequency. All 10 counties had November claim frequencies that were more than twice the national average. Among the 10 counties, there was not as much variation in claim severity as there was in 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, 2013–22

State	County	Claim frequency			Claim severity			Overall losses		
		August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
PA	Crawford	26.6	86.9	226.1%	\$3,397	\$4,201	23.7%	\$91	\$365	303.3%
PA	Indiana	20.3	75.3	270.5%	\$3,414	\$3,911	14.6%	\$69	\$294	324.5%
PA	Somerset	20.3	68.5	236.9%	\$3,361	\$4,361	29.7%	\$68	\$299	337.1%
PA	Mercer	11.6	50.3	334.7%	\$3,462	\$3,962	14.5%	\$40	\$199	397.5%
PA	Butler	12.2	48.7	300.0%	\$3,653	\$4,180	14.4%	\$44	\$204	357.8%
PA	Fayette	9.6	44.6	364.3%	\$3,710	\$4,721	27.2%	\$36	\$211	490.8%
PA	Westmoreland	8.2	34.8	323.1%	\$3,517	\$4,242	20.6%	\$29	\$148	410.2%
NJ	Hunterdon	8.7	34.5	298.0%	\$3,863	\$4,575	18.4%	\$33	\$158	371.3%
PA	Washington	8.5	32.6	285.4%	\$3,829	\$4,583	19.7%	\$32	\$149	361.3%
NJ	Sussex	8.6	31.7	269.5%	\$3,812	\$4,444	16.6%	\$33	\$141	330.7%
National		4.2	13.6	222.8%	\$3,808	\$4,590	20.5%	\$16	\$62	289.1%

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

Map 2: November animal strike frequency by county, 2013–22



► 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.

The November animal strike claim frequency was lower in 2020 than in previous years. This is likely because there were fewer vehicles on the road during the first part of the COVID-19 pandemic. However, the lowest November claim frequency over the 10-year study period occurred in 2022. One possible explanation is that more companies started to provide data on animal strikes that year. HLDI will continue to monitor the trend as more data become available.

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

Highway Loss Data Institute. (2022). Losses due to animal strikes. *Loss Bulletin*, 39(23).



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