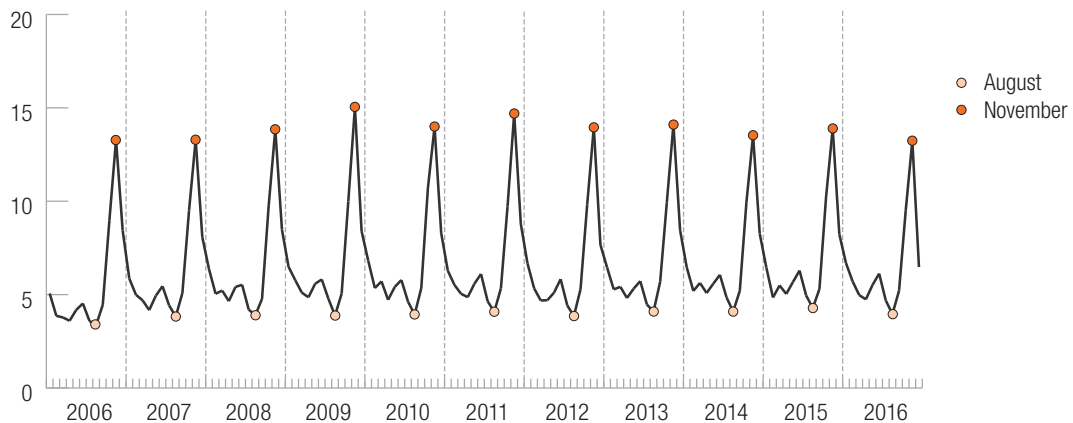




Losses due to animal strikes

Animal strike claims typically rise dramatically in the fall, peaking in November. This analysis of claims from 2006 through 2016 shows claim frequency in November was more than twice the average for the study period and 3½ 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 Pennsylvania are the states with the highest November claim frequency for animal strikes.

**National comprehensive claim frequencies for animal strikes,
January 2006–December 2016**



► Introduction

Damage caused to vehicles in collisions with animals is insured under comprehensive coverage. This Highway Loss Data Institute (HLDI) bulletin presents 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 (Vol. 25, No. 8), again in September 2009 (Vol. 26, No. 5), and more recently in April 2012, 2013, 2014, 2015, and 2016. This bulletin updates the prior results and shows consistent trends.

► Methods

Insurance data

Automobile insurance covers damage to vehicles and property, as well as injuries to people involved in 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 or physical damage to insured people's own vehicles that occurs for reasons other than crashes. Losses due to animal strikes are covered under comprehensive coverage.

Of the 42 companies that currently report comprehensive coverage to HLDI, only 25 provide information on animal strikes covered under comprehensive insurance. Vehicle exposure from the 25 companies represents 33.9 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, 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 one year, two for six 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 to settle a claim. It is not a measure of vehicle speed in a crash or injury severity. Overall losses is the product of claim frequency and claim severity, expressed as dollars per insured vehicle year. This is an insurance measure and represents the average annual dollars spent to settle claims. Results were based on more than 400 million insured vehicle years and more than 2.6 million claims. Total exposure measured in insured vehicle years and claims by calendar year are shown in **Table 1**.

	Exposure	Claims
2006	25,780,248	145,364
2007	26,586,521	165,629
2008	27,227,662	175,883
2009	27,311,012	184,898
2010	31,265,910	212,500
2011	35,327,660	239,039
2012	37,537,236	242,734
2013	43,057,381	288,516
2014	46,719,366	312,159
2015	48,979,435	330,434
2016	51,354,630	329,671
Total	401,147,060	2,626,827

Subject vehicles

The study period was from January 2006 through December 2016, and study vehicles included 1998–2017 model year passenger vehicles. Motorcycles were not included.

► Results

Figure 1 shows comprehensive claim frequencies for animal strikes during the 132-month study period per 1,000 insured vehicle years. Claim frequencies followed a consistent pattern — rising dramatically in October, peaking in November, and then dropping off in December and January. Claim frequencies during the study period averaged 6.5 claims per 1,000 insured vehicle years.

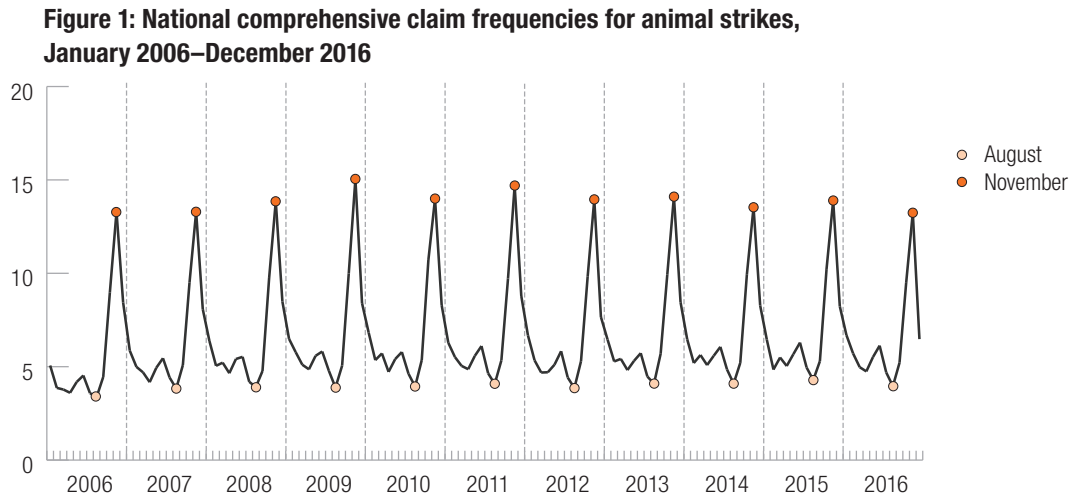


Figure 2 averages the monthly variation in comprehensive animal strike claim frequencies across the 11-year study period. Claim frequencies were lowest in August (4.0 claims per 1,000 insured vehicle years) and highest in November (13.9 claims). The increase between August and November was about 3½ times.

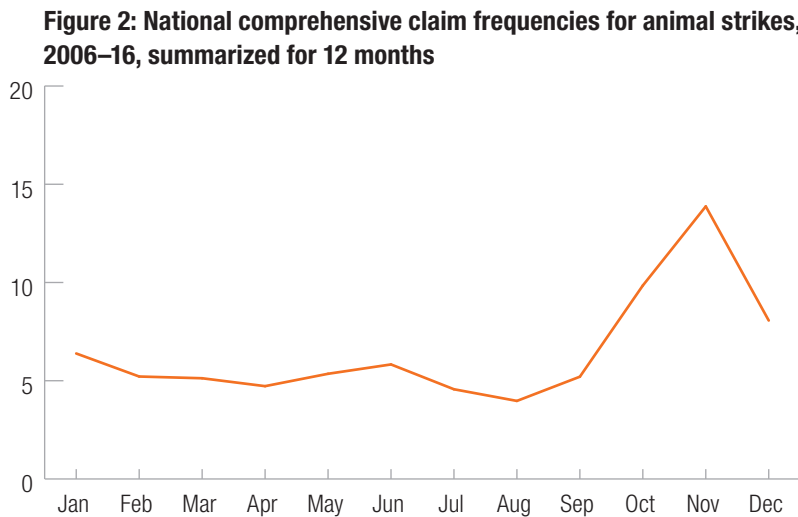


Figure 3 shows comprehensive claim severities for animal strikes during the 132-month study period. Monthly variations in claim severities followed a pattern similar to that for claim frequencies. In general, over time there has been an increasing trend in claim severity. This increase is believed to be associated with the increase in vehicle prices. Claim severities during the study period averaged \$2,992 per claim. In 2016, the most recent year, the average claim severity was \$3,464, compared with \$2,424 in 2006.

Figure 3: National comprehensive claim severities for animal strikes, January 2006–December 2016

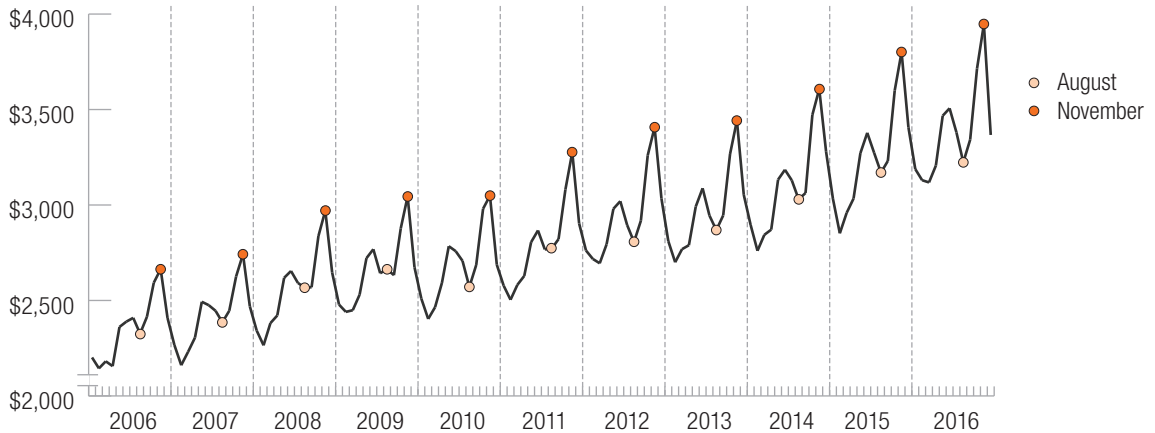


Figure 4 averages the monthly variation in comprehensive animal strike claim severities across the 11-year study period. Like claim frequencies, claim severities were highest in November (\$3,359 per claim). However, unlike claim frequencies, claim severities were lowest in February (\$2,640). The variation between minimum and maximum monthly claim severities (27 percent) was not nearly as pronounced as the corresponding variation for claim frequencies.

Figure 4: National comprehensive claim severities for animal strikes, 2006–16, summarized for 12 months

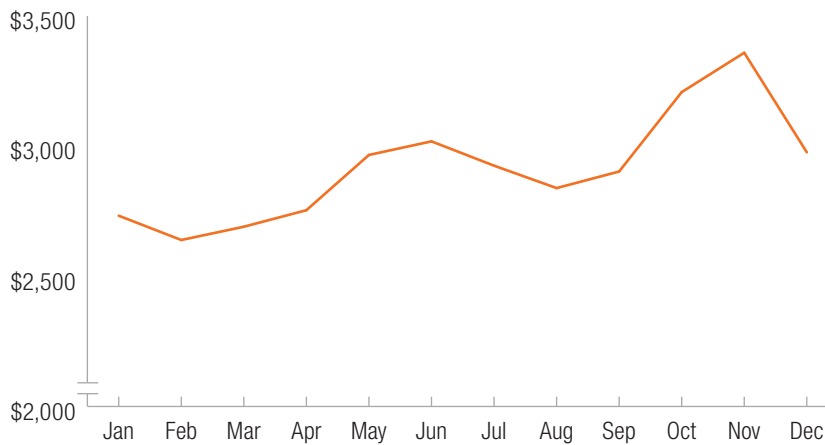


Figure 5 shows comprehensive overall losses for animal strikes during the 132-month study period. The monthly variation in overall losses followed the same pattern as that for claim frequencies. Overall losses during the study period averaged \$19.59 per insured vehicle year.

Figure 5: National comprehensive overall losses for animal strikes, January 2006–December 2016

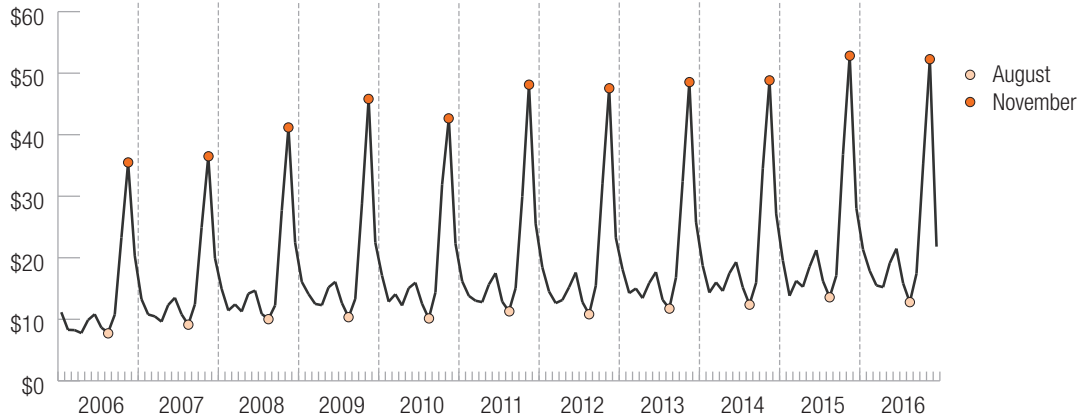


Figure 6 averages the monthly variation in comprehensive animal strike overall losses across the 11-year study period. Overall losses were lowest in August (\$11.28 per insured vehicle year) and highest in November (\$46.60). Overall losses in November were 4.1 times as high as those in August.

Figure 6: National comprehensive overall losses for animal strikes, 2006–16, summarized for 12 months

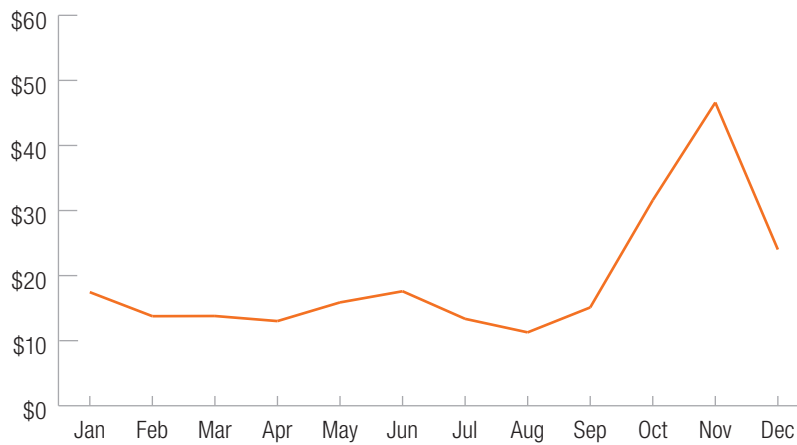


Table 2 summarizes the animal strike loss results by month. The national claim frequency was 6.5 claims per 1,000 years of exposure with a claim severity of \$2,992, resulting in an overall loss of \$19.59.

Table 2: Comprehensive coverage losses for animal strikes, 2006–16, summarized for 12 months			
	Claim frequency	Claim severity	Overall loss
January	6.4	\$2,733	\$17.45
February	5.2	\$2,640	\$13.76
March	5.1	\$2,691	\$13.79
April	4.7	\$2,754	\$13.01
May	5.4	\$2,966	\$15.88
June	5.8	\$3,018	\$17.60
July	4.6	\$2,925	\$13.36
August	4.0	\$2,839	\$11.28
September	5.2	\$2,903	\$15.11
October	9.8	\$3,208	\$31.59
November	13.9	\$3,359	\$46.60
December	8.1	\$2,977	\$24.01
Total	6.5	\$2,992	\$19.59

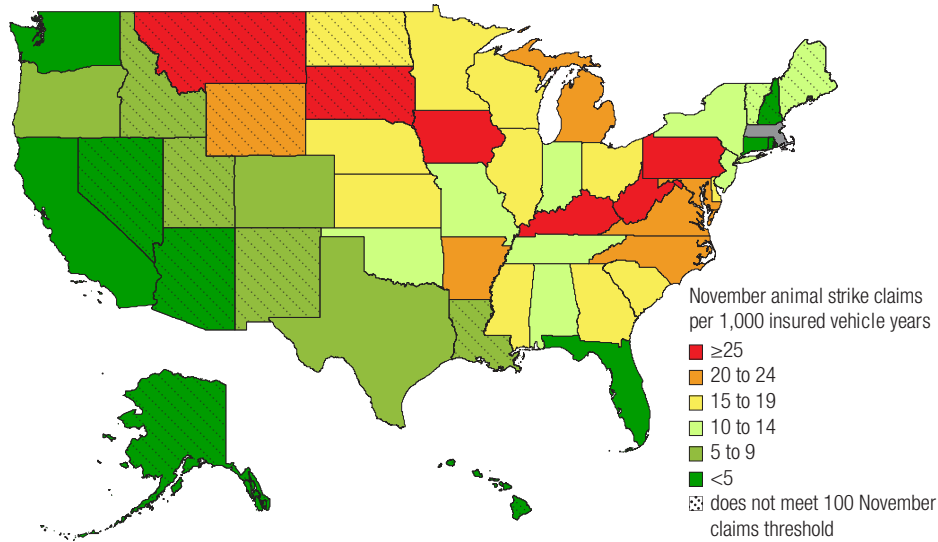
Table 3 lists comprehensive coverage losses for the 10 states with the highest claim frequencies for animal strikes in November. National data have been included for comparative purposes. To be included in the top 10 and in the national total, states were required to have a minimum of 100 claims in November for each year. West Virginia tops the list with a November claim frequency of 49.3 — more than 3 times the national average for November and the state’s August claim frequency. Delaware, which is 10th on the list, had a November claim frequency that was one-third higher than the national average for November. 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 pattern similar to that for claim frequencies. **Map 1** illustrates the November animal strike claim frequencies 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.

Table 3: Comprehensive coverage losses for 10 states with highest claim frequencies for animal strikes in November, 2006–16

	Claim frequency			Claim severity			Overall loss		
	August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
West Virginia	15.4	49.3	68.6%	\$2,639	\$3,060	13.8%	\$41	\$151	73.0%
Iowa	7.8	31.5	75.3%	\$3,241	\$3,855	15.9%	\$25	\$121	79.2%
Pennsylvania	6.2	29.4	79.0%	\$2,603	\$3,176	18.1%	\$16	\$93	82.8%
Kentucky	7.5	28.4	73.6%	\$2,741	\$3,501	21.7%	\$20	\$99	79.4%
Michigan	7.6	23.5	67.5%	\$2,722	\$3,343	18.6%	\$21	\$78	73.6%
North Carolina	5.9	23.4	74.8%	\$2,250	\$2,856	21.2%	\$13	\$67	80.1%
Arkansas	6.6	20.9	68.6%	\$2,760	\$3,237	14.8%	\$18	\$68	73.2%
Virginia	4.9	20.6	76.4%	\$2,500	\$3,060	18.3%	\$12	\$63	80.7%
Maryland	4.0	20.1	80.1%	\$2,834	\$3,434	17.5%	\$11	\$69	83.5%
Delaware	3.7	19.4	81.0%	\$2,917	\$3,564	18.2%	\$11	\$69	84.4%
National*	4.0	14.5	72.1%	\$2,795	\$3,343	16.4%	\$11	\$49	76.7%

*Only includes states with ≥100 claims in each November

Map 1: November animal strike frequency by state, 2006–16



■ 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 comprehensive claim frequencies for animal strikes during the 132-month study period for the three states with the highest November claim frequencies (West Virginia, Iowa, and Pennsylvania) and two states with very low November claim frequencies (California and Florida). Claim frequencies for West Virginia, Iowa, and Pennsylvania followed the national trend but were consistently higher than the national average. There was little variation in claim frequencies for California and Florida.

Figure 7: Comprehensive claim frequencies for animal strike in selected states compared with national average, January 2006–December 2016

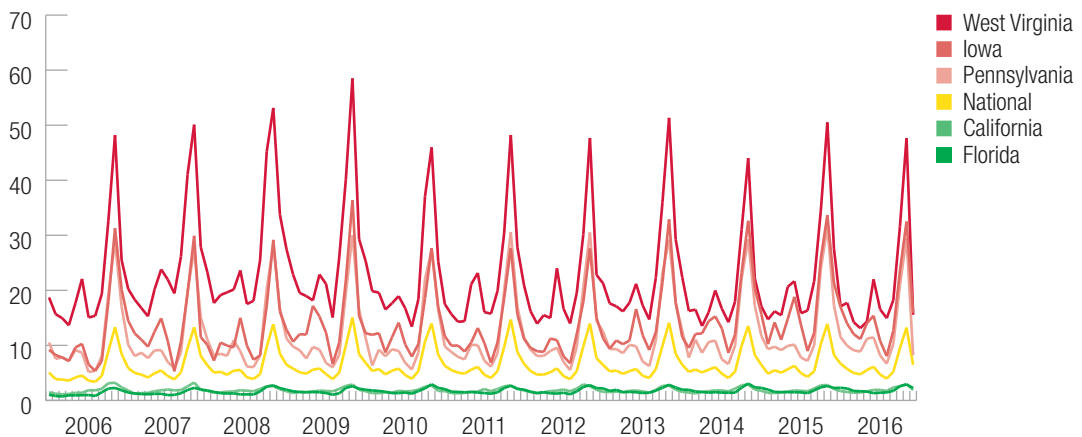
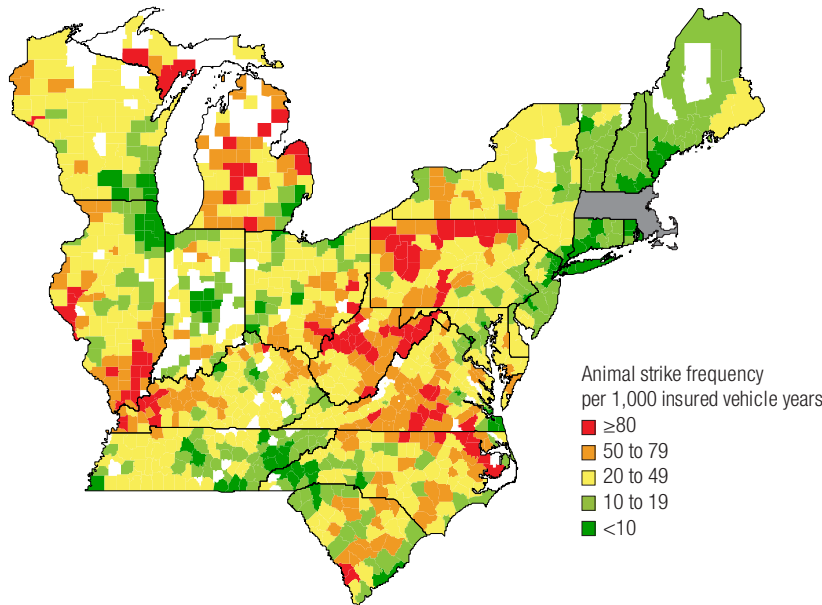


Table 4 lists comprehensive coverage losses for the 20 counties with the highest claim frequencies for animal strikes in November. National data have been included for comparative purposes. To be included in the top 20, counties were required to have a minimum of 100 claims in November for each calendar year. Butler County, Pennsylvania, tops the list with a November claim frequency of 54.1 — more than 3½ times the national average for November and more than 5 times higher than the county’s August claim frequency. Six of the 20 counties had November claim frequencies that were more than twice the national average. Among the 20 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 for claim frequencies. **Map 2** illustrates the November animal strike claim frequencies by county for a portion of the country. A lower exposure threshold was applied to the map because results are expressed in ranges. Northern Pennsylvania and northern West Virginia appear to have the highest concentration of claim frequencies per 1,000 vehicle years in this region.

Table 4: Comprehensive coverage losses for 20 counties with highest claim frequencies for animal strikes in November, 2006–16

	Claim frequency			Claim severity			Overall loss		
	August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
Butler, PA	10.5	54.1	80.7%	\$2,654	\$3,209	17.3%	\$28	\$174	84.0%
Westmoreland, PA	7.4	37.7	80.5%	\$2,663	\$3,096	14.0%	\$20	\$117	83.2%
Washington, PA	7.8	37.7	79.4%	\$2,808	\$3,130	10.3%	\$22	\$118	81.5%
Orange, NY	7.5	33.9	77.8%	\$3,553	\$3,921	9.4%	\$27	\$133	79.9%
Erie, PA	5.8	32.3	82.0%	\$2,717	\$3,377	19.6%	\$16	\$109	85.5%
Frederick, MD	6.0	32.2	81.3%	\$2,446	\$3,259	24.9%	\$15	\$105	85.9%
Loudoun, VA	5.0	26.1	80.8%	\$2,623	\$3,487	24.8%	\$13	\$91	85.6%
Chester, PA	3.9	24.3	83.8%	\$2,911	\$3,619	19.6%	\$11	\$88	86.9%
York, PA	3.4	23.6	85.6%	\$2,599	\$3,193	18.6%	\$9	\$75	88.3%
Howard, MD	3.8	20.2	81.1%	\$3,117	\$3,414	8.7%	\$12	\$69	82.8%
Allegheny, PA	3.7	18.2	79.9%	\$2,704	\$3,153	14.2%	\$10	\$57	82.8%
Wake, NC	3.2	17.4	81.7%	\$2,496	\$3,340	25.3%	\$8	\$58	86.3%
Bucks, PA	3.4	17.0	80.1%	\$3,059	\$3,629	15.7%	\$10	\$62	83.2%
Prince William, VA	3.0	16.9	82.2%	\$2,789	\$3,367	17.2%	\$8	\$57	85.2%
Monroe, NY	3.1	15.3	79.8%	\$2,660	\$3,469	23.3%	\$8	\$53	84.5%
Prince George's, MD	2.8	15.0	81.6%	\$2,841	\$3,573	20.5%	\$8	\$53	85.4%
Montgomery, PA	2.6	14.9	82.6%	\$2,546	\$3,400	25.1%	\$7	\$51	87.0%
Montgomery, MD	3.2	14.7	78.4%	\$2,738	\$3,241	15.5%	\$9	\$48	81.7%
Anne Arundel, MD	2.3	14.0	83.2%	\$2,952	\$3,856	23.4%	\$7	\$54	87.2%
Erie, NY	3.2	13.9	76.9%	\$2,795	\$3,329	16.1%	\$9	\$46	80.6%
National	4.0	14.5	72.1%	\$2,795	\$3,343	16.4%	\$11	\$49	76.7%

Map 2: November animal strike frequency by county, 2006–16



■ 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: Counties are included on this map even if they did not meet the minimum exposure threshold needed in Table 4.

► 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* Vol. 25, No. 8. Arlington, VA.
- Highway Loss Data Institute. 2009. Losses due to animal strikes. *Loss Bulletin* Vol. 26, No. 5. Arlington, VA.
- Highway Loss Data Institute. 2012. Losses due to animal strikes. *Loss Bulletin* Vol. 29, No. 2. Arlington, VA.
- Highway Loss Data Institute. 2013. Losses due to animal strikes. *Loss Bulletin* Vol. 30, No. 4. Arlington, VA.
- Highway Loss Data Institute. 2014. Losses due to animal strikes. *Loss Bulletin* Vol. 31, No. 3. Arlington, VA.
- Highway Loss Data Institute. 2015. Losses due to animal strikes. *Loss Bulletin* Vol. 32, No. 6. Arlington, VA.
- Highway Loss Data Institute. 2016. Losses due to animal strikes. *Loss Bulletin* Vol. 33, No. 7. Arlington, VA.



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