Losses due to animal strikes

Animal strike claims typically rise dramatically in the fall, peaking in November. This analysis of claims from 2006 through 2013 shows claim frequency in November was more than twice the average for the study period and about 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 of all the states.

▶ 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 (Vol. 29, No. 2) and April 2013 (Vol. 30, No. 4). 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 36 companies that currently report comprehensive coverage to HLDI, only 23 provide information on animal strikes covered under comprehensive insurance. Vehicle exposure from the 23 companies represents 32 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 1 year, two 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 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 238 million insured vehicle years and more than 1.5 million claims. Total exposure measured in insured vehicle years and claims by calendar year are shown in **Table 1**.

Table 1: Exposure and claims by calendar year		
	Exposure	**Claims**
2006	25,781,032	145,368
2007	26,587,428	165,635
2008	27,228,181	175,886
2009	27,311,342	184,889
2010	28,833,939	196,148
2011	30,945,416	220,466
2012	33,142,379	227,945
2013	38,194,203	264,591
Total	**238,023,920**	**1,580,928**

Subject vehicles

The study period was from January 2006 through December 2013, and study vehicles included 1998-2014 model year passenger vehicles. Motorcycles were not included.

▶ Results

Figure 1 shows comprehensive claim frequencies for animal strikes during the 96-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 6.6 claims per 1,000 insured vehicle years.

Figure 1: National comprehensive claim frequencies for animal strikes, January 2006–December 2013
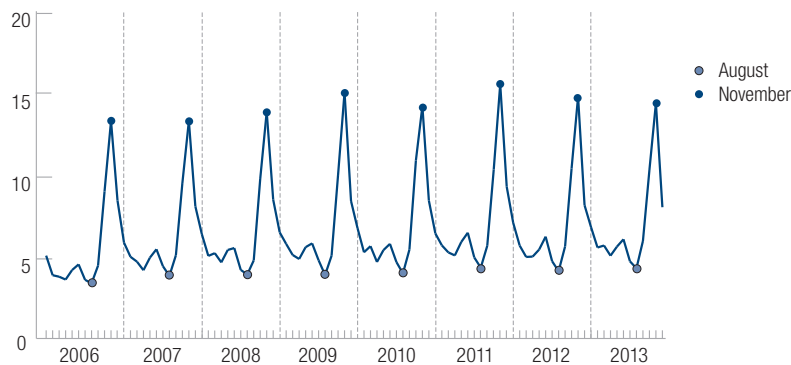
Figure 2 summarizes the comprehensive claim frequencies during the 96-month study period into 12 months. Claim frequencies were lowest in August (4.0 claims per 1,000 insured vehicle years) and highest in November (14.3). The increase between August and November was about 3½ times.

Figure 2: National comprehensive claim frequencies for animal strikes, 2006–13, summarized for 12 months
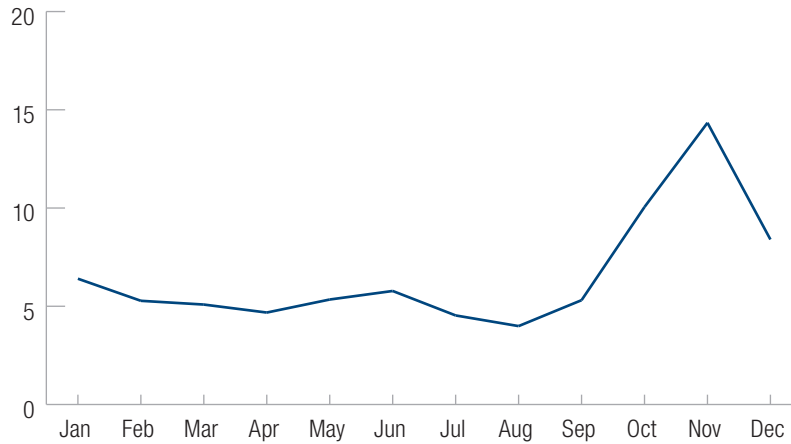

Figure 3 shows comprehensive claim severities for animal strikes during the 96-month study period. Monthly variations in claim severities followed a pattern similar to that for claim frequencies. In general, over time there has been an increasing trend in claim severity. This increase is believed to be associated with the increase in vehicle prices. Claim severities during the study period averaged $2,811 per claim. In 2013, the most recent year, the average claim severity was $3,085 compared with $2,424 in 2006.

Figure 3: National comprehensive claim severities for animal strikes, January 2006–December 2013
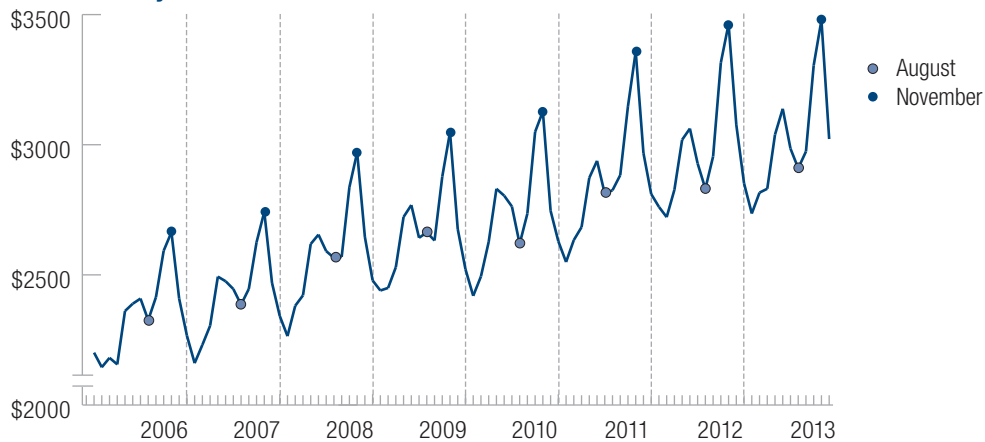
Figure 4 summarizes the comprehensive claim severities during the 96-month study period into 12 months. Like claim frequencies, claim severities were highest in November ($3,151 per claim). However, unlike claim frequencies, claim severities were lowest in February ($2,478). The variation between minimum 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, 2006–13, summarized for 12 months
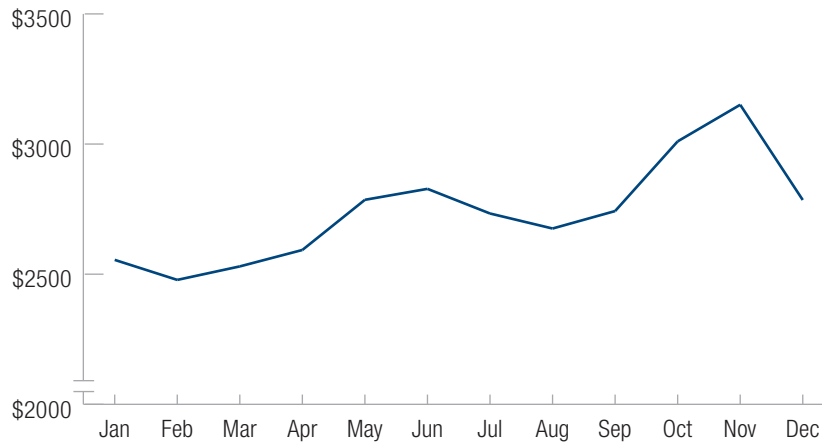

Figure 5 shows comprehensive overall losses for animal strikes during the 96-month study period. The monthly variation in overall losses followed the same pattern as that for claim frequencies. Overall losses during the study period averaged $18.67 per insured vehicle year.

Figure 5: National comprehensive overall losses for animal strikes, January 2006–December 2013
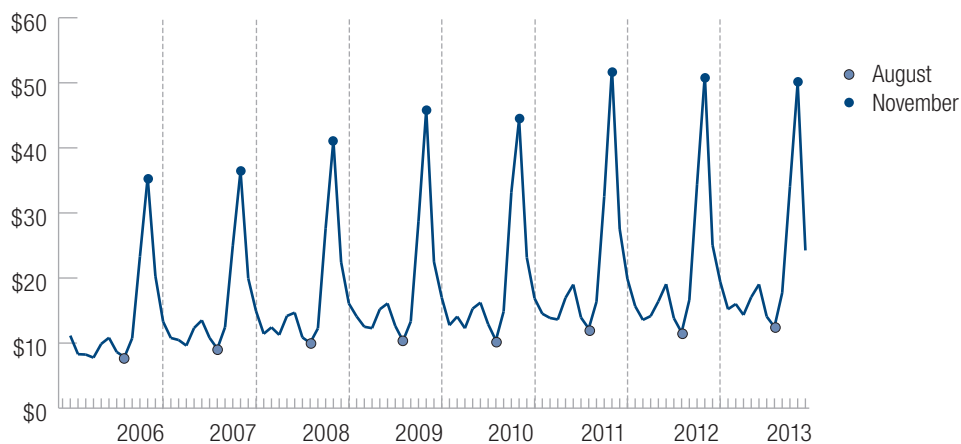
Figure 6 summarizes the comprehensive overall losses during the 96-month study period into 12 months. Overall losses were lowest in August ($10.68 per insured vehicle year) and highest in November ($45.18). Overall losses in November were 4.2 times as high as those in August.

Figure 6: National comprehensive overall losses for animal strikes, 2006–13, summarized for 12 months
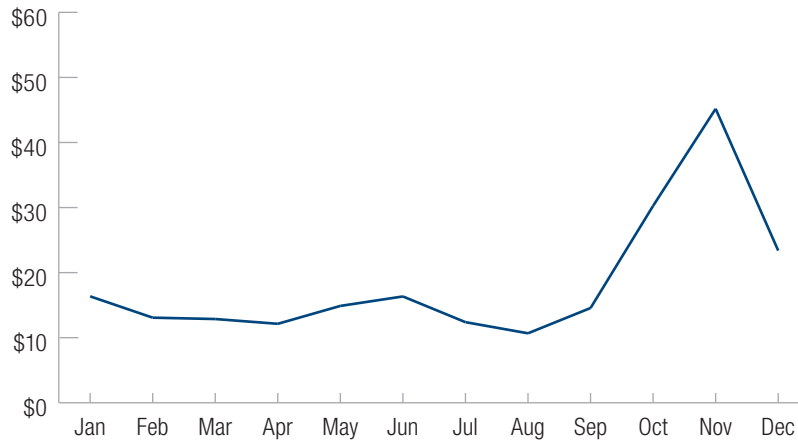

Table 2 summarizes the animal strike loss results by month. National claim frequency was 6.6 claims per 1,000 years of exposure with a claim severity of $2,811, resulting in an overall loss of $18.67.

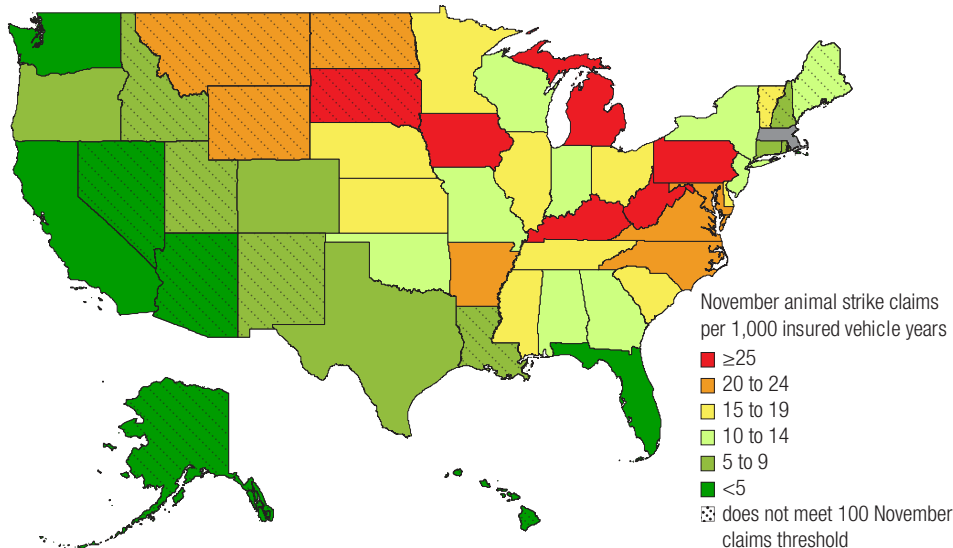| Table 2: Comprehensive coverage losses for animal strikes, 2006–13, summarized for 12 months			
	Claim frequency	**Claim severity**	**Overall loss**
January	6.4	$2,555	$16.36
February	5.3	$2,478	$13.08
March	5.1	$2,530	$12.87
April	4.7	$2,593	$12.14
May	5.3	$2,786	$14.88
June	5.8	$2,828	$16.34
July	4.5	$2,733	$12.39
August	4.0	$2,675	$10.68
September	5.3	$2,743	$14.56
October	10.1	$3,010	$30.26
November	14.3	$3,151	$45.18
December	8.4	$2,785	$23.39
Total	**6.6**	**$2,811**	**$18.67**

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 51.6—about 3½ times the national average for November and more than 3 times higher than 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 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, 2006–13									
	Claim frequency			Claim severity			Overall loss		
	August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
West Virginia	16.1	51.6	68.8%	$2,487	$2,828	12.0%	$40	$146	72.5%
Iowa	7.4	31.0	76.2%	$3,096	$3,641	15.0%	$23	$113	79.8%
Pennsylvania	6.0	29.6	79.7%	$2,430	$2,976	18.3%	$15	$88	83.4%
Kentucky	7.5	27.9	73.1%	$2,656	$3,300	19.5%	$20	$92	78.3%
Michigan	7.9	25.2	68.7%	$2,560	$3,146	18.7%	$20	$79	74.5%
North Carolina	6.2	24.8	75.0%	$2,124	$2,707	21.5%	$13	$67	80.4%
Virginia	5.0	21.2	76.5%	$2,399	$2,909	17.5%	$12	$62	80.6%
Arkansas	6.6	20.8	68.2%	$2,555	$3,021	15.4%	$17	$63	73.1%
Maryland	4.0	20.7	80.7%	$2,659	$3,264	18.5%	$11	$68	84.2%
Delaware	3.9	19.8	80.2%	$2,848	$3,273	13.0%	$11	$65	82.8%
National*	4.1	15.0	72.8%	$2,634	$3,139	16.1%	$11	$47	77.2%

*Only includes states with ≥100 claims in each November

Map 1: November animal strike frequency by state, 2006-13

November animal strike claims per 1,000 insured vehicle years
- ≥25
- 20 to 24
- 15 to 19
- 10 to 14
- 5 to 9
- <5
- does not meet 100 November claims threshold

Note: All Massachusetts data is supplied to HLDI by the Automobile Insurance Bureau of Massachusetts. They do 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 96-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 strikes in selected states compared with national average, January 2006 – December 2013
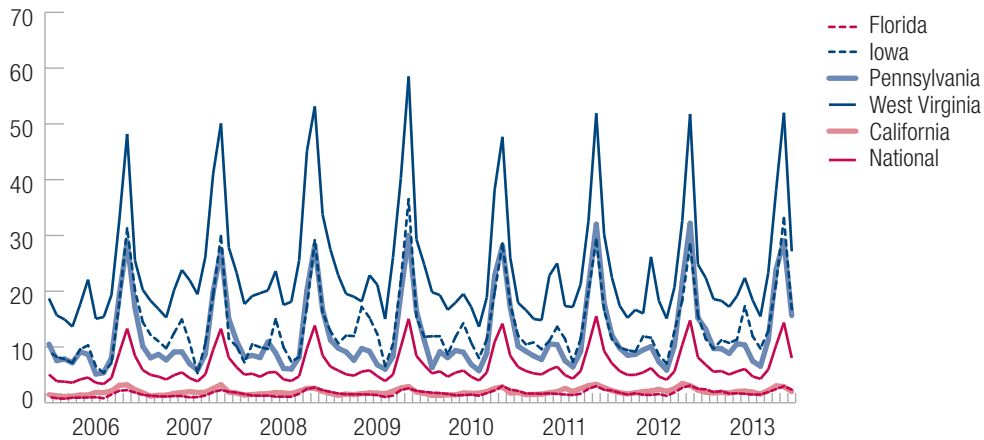

Table 4 lists comprehensive coverage losses for the 20 counties with the highest claim frequencies for animal strikes in November. National data have been included for comparative purposes. To be included in the top 20, counties were required to have a minimum of 100 claims in November for each calendar year. Butler County, Pennsylvania, tops the list with a November claim frequency of 53.1 — 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 states followed a similar pattern to that for claim frequencies. **Map 2** illustrates the November animal strike claim frequencies by county for the Northeastern region of the country. A lower exposure threshold was applied to the map because results are expressed in ranges.

	Claim frequency			Claim severity			Overall loss		
Table 4: Comprehensive coverage losses for 20 counties with highest claim frequencies for animal strikes in November, 2006-13									
	August	November	Percent difference	August	November	Percent difference	August	November	Percent difference
Butler, PA	9.8	53.1	81.6%	$2,375	$3,042	21.9%	$23	$162	85.6%
Washington, PA	6.9	39.6	82.5%	$2,626	$2,874	8.6%	$18	$114	84.0%
Westmoreland, PA	7.3	39.1	81.3%	$2,519	$2,856	11.8%	$18	$112	83.5%
Orange,NY	7.6	35.0	78.3%	$3,443	$3,671	6.2%	$26	$128	79.6%
Frederick, MD	6.6	33.5	80.3%	$2,290	$3,027	24.4%	$15	$101	85.1%
Erie, PA	5.8	33.0	82.4%	$2,499	$3,155	20.8%	$15	$104	86.1%
Loudoun, VA	5.6	27.4	79.5%	$2,567	$3,250	21.0%	$14	$89	83.8%
Chester, PA	4.0	25.1	84.2%	$2,560	$3,434	25.5%	$10	$86	88.2%
Howard, MD	4.0	21.4	81.4%	$3,032	$3,190	5.0%	$12	$68	82.3%
Wake, NC	3.4	19.7	82.6%	$2,375	$3,081	22.9%	$8	$61	86.6%
Allegheny, PA	3.6	18.5	80.8%	$2,408	$2,908	17.2%	$9	$54	84.1%
Prince William, VA	3.3	17.8	81.4%	$2,707	$3,173	14.7%	$9	$57	84.1%
Bucks, PA	3.6	16.9	78.8%	$2,997	$3,431	12.7%	$11	$58	81.5%
Montgomery, MD	3.3	15.1	78.4%	$2,683	$3,099	13.4%	$9	$47	81.3%
Monroe, NY	2.8	15.0	81.6%	$2,406	$3,227	25.5%	$7	$48	86.3%
Erie, NY	3.1	14.9	79.0%	$2,505	$3,172	21.0%	$8	$47	83.4%
Prince George's, MD	2.4	14.8	83.7%	$2,629	$3,434	23.4%	$6	$51	87.5%
Montgomery, PA	2.4	14.7	83.5%	$2,404	$3,256	26.2%	$6	$48	87.8%
Anne Arundel, MD	2.2	14.2	84.4%	$2,775	$3,675	24.5%	$6	$52	88.3%
Baltimore, MD	2.3	13.0	82.3%	$2,550	$3,371	24.3%	$6	$44	86.6%
National	**4.1**	**15.0**	**72.8%**	**$2,634**	**$3,139**	**16.1%**	**$11**	**$47**	**77.2%**

Map 2: November animal strike frequency by county, 2006-13
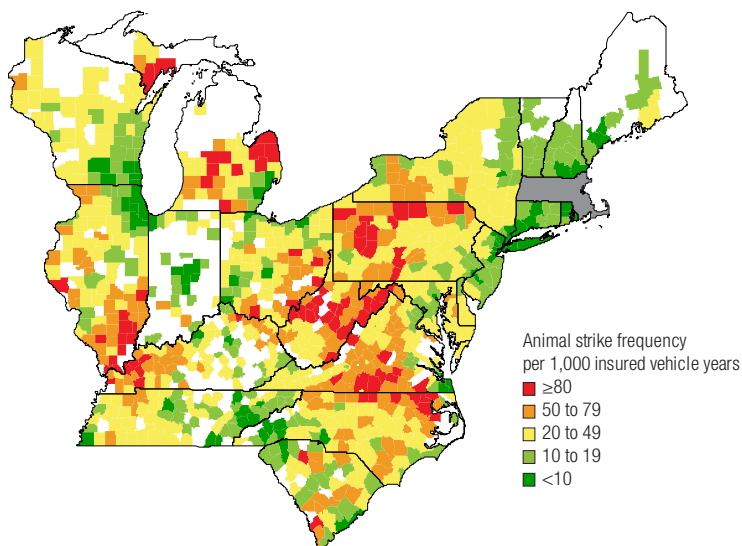
Animal strike frequency
per 1,000 insured vehicle years
- ≥80
- 50 to 79
- 20 to 49
- 10 to 19
- <10

■ Note: All Massachusetts data is supplied to HLDI by the Automobile Insurance Bureau of Massachusetts. They do 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 nearly 3 times 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 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.

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Highway Loss Data Institute. 2013. Losses due to animal strikes. *Loss Bulletin* Vol. 30, No. 4. Arlington, VA.