United States Department of Agriculture

Animal and Plant Health Inspection Service

Veterinary Services

National Animal Health Monitoring System

December 2017

Death Loss in U.S. Cattle and Calves Due to Predator and Nonpredator Causes, 2015

USDA–APHIS–VS–CEAH–NAHMS
NRRC Building B, M.S. 2E7
2150 Centre Avenue
Fort Collins, CO 80526–8117
970.494.7000
http://www.aphis.usda.gov/nahms

#745.1217

Cover photograph courtesy of David Dargatz.

Items of Note

Inventory

- In 2015, total U.S. inventory of adult cattle (over 500 lb) was 78 million head, and total calf crop was 34 million head.
- Nearly two-thirds of operations represented in this report were cattle operations, and nearly two-thirds of cattle represented in this report resided on cattle operations.

Overall death loss

- Almost 3.9 million cattle and calves were lost to all causes (nonpredator and predator) in 2015.
- The estimated cost of death loss in cattle and calves in 2015 was $3.87 billion.
- The percentage of adult-cattle and calf-crop inventories lost to all causes has been relatively consistent since 2000.
- In 2015, nonpredator causes accounted for almost 98 percent of all deaths in adult cattle and almost 89 percent of all deaths in calves.
- The percentage of calf deaths attributed to predators increased steadily from 3.5 percent in 1995 to 11.1 percent in 2015.
- Predator-related calf deaths on cattle operations accounted for nearly 16 percent of calf deaths on these types of operations—nearly triple the percentage of predator-related deaths on other types of operations.
- About one-third of cattle operations had deaths in adult cattle.
- About 40 percent of cattle operations had deaths in calves.

Nonpredator death loss

- Respiratory problems accounted for the highest percentage of deaths in cattle due to nonpredators (23.9 percent), followed by unknown causes (14.0 percent) and old age (11.8 percent).
- Respiratory problems also accounted for the highest percentage of deaths in calves due to nonpredators (26.9 percent), followed by calving-related problems (17.8 percent) and digestive problems (15.4 percent).

Predator death loss

- In 2015, coyotes accounted for the highest percentage of cattle deaths due to predators (40.5 percent), followed by unknown predators (15.8 percent) and dogs (11.3 percent).
- Coyotes also accounted for the highest percentage of calf deaths due to predators (53.1 percent), followed by unknown predator causes (12.4 percent) and vultures (10.3 percent).

Predator control methods and costs

- From 2000 to 2015, the percentage of operations that used nonlethal methods to control predators increased approximately six-fold: 3.1 percent in 2000 to 19.0 percent in 2015.
- In 2015, the highest percentages of operations that used nonlethal methods to control predators used guard animals (8.3 percent) or fencing (6.1 percent), followed by livestock carcass removal, culling older cattle to prevent death loss, and frequent checks in areas or seasons in which predator risk is high.
- For operations that spent any money on nonlethal or lethal predator control methods, the average amount spent on nonlethal methods was abolut $3,000 and about $300 for lethal methods.

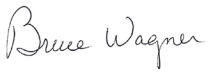
The numbers provided in this report are based on a sample of operations and are thus estimates of the true numbers. There is variability associated with each estimate, although the measures of variability (such as the standard error) are not always shown.

Acknowlegments

This report was a cooperative effort between two U.S. Department of Agriculture (USDA) agencies: the National Agricultural Statistics Service (NASS) and the Animal and Plant Health Inspection Service (APHIS).

We'd like to thank the NASS enumerators who telephoned and visited cattle operations and collected the data for this report. Their hard work and dedication were invaluable. A thank you also goes to the personnel at the USDA–APHIS–Veterinary Services' Center for Epidemiology and Animal Health for their efforts in generating and distributing this report.

We especially thank the cattle producers whose voluntary efforts made this study possible.



Bruce Wagner
Director
Center for Epidemiology and Animal Health

Suggested bibliographic citation for this report:
USDA. 2015. “Cattle and Calves Death Loss in the United States Due to Predator and Nonpredator Causes, 2015”
USDA–APHIS–VS–CEAH. Fort Collins, CO
#745.1217

Contacts for further information:
Questions or comments on data analysis: Dr. Chuck Fossler (970) 494–7000
Information on reprints or other reports: Ms. Abby Zehr (970) 494–7000

For questions about this report or additional copies, please contact:

USDA–APHIS–VS–CEAH–NAHMS
NRRC Building B, M.S. 2E7
2150 Centre Avenue
Fort Collins, CO 80526-8117
970–494–7000

Table of Contents

Introduction

Each January, USDA's National Agricultural Statistics Service (NASS) collects data on cattle and calves inventory, calf crop, and total cattle and calves death loss. Inventory and calf crop estimates (number of head) are published in January via the NASS "Cattle" report. Total State-level cattle and calves death losses (number of head) are published in April via the NASS "Meat Animals Production, Disposition, and Income" report.

For NASS' January 1992, 1996, 2001, 2006, 2011, and 2016 cattle surveys, USDA's Animal and Plant Health Inspection Service's National Animal Health Monitoring System provided funding for a detailed, retrospective breakdown of total cattle and calves death losses by producer-attributed cause of loss occurring during the previous year. Cattle and calves death losses by cause (number of head) were published in May via the NASS "Cattle Death Loss" report for years prior to 2015.

This report takes the place of NASS' "Cattle Death Loss" report for 2015. It provides a breakdown of cattle and calves death losses by producer-attributed causes for 2015. Also included are producer-reported mitigation measures taken for predator losses and the costs of those measures.

This report shows losses separately for adult cattle and for calves. Further breakdowns of losses are done by operation types: beef, dairy, mixed, and other. Losses are categorized as nonpredator related and predator related.

Terms Used in This Report

Calves: All bulls, steers, and heifers less than 500 lb.

Cattle: All cows, bulls, steers, and heifers 500 lb or more.

NA: Not available.

Operation classification:

Beef: If an operation had more beef cows than milk cows and the milk cows numbered fewer than five head, the operation was classified as a beef cattle operation.

Dairy: If an operation had more milk cows than beef cows and beef cows numbered fewer than five head, the operation was classified as a dairy operation.

Mixed: If an operation had more than five beef cows and more than five milk cows, or if the number of beef cows equaled the number of milk cows, the operation was classified as a mixed operation.

Other: Operations that did not meet the criteria to be classified as beef, dairy, or mixed operations. Examples include feedlot or stocker operations.

Operation size:

For beef operations size groups are 1 to 49, 50 to 99, 100 to 499, and 500 or more head.

For dairy operations,size groups are 1 to 49, 50 to 99, 100 to 199, 200 to 499, and 500 or more head.

For mixed operations size groups are 1 to 99, 100 to 499, and 500 or more head. For “other” operations size groups are 1 to 99, 100 to 499, 500 to 999, and 1,000 or more head.

States: Estimates are provided at the State level for 39 States. The remaining States were divided into two categories: New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), and “Other” (Alaska, Delaware, Hawaii, Maryland, and New Jersey).

Standard error: Standard error of the estimate. Standard errors give an estimate of the uncertainty contained in the point estimates presented for either counts or percentages. The standard errors in this report account for the stratified study design. For percentages of 0.0, a standard error of (0.0) indicates that the percentage and standard error round to 0.0, while a standard error of (—) indicates that the percentage and standard error exactly equal 0.0.

Section I: Inventory

Where applicable, column and/or row totals are shown as 100.0 to aid in interpretation. For example, in table A.2.b column percentages sum to 100.0, meaning that percentages are taken with respect to column totals. Note that estimates may not sum to 100.0 due to rounding or suppression.

Unless otherwise noted, data in section I were published by the National Agricultural Statistics Service (NASS).

A. U.S. Demographics

Demographic information in section I is included in this report to provide context for the death loss estimates in section II.

1. Inventory and operations, 1996 to 2016

The number of cattle and calves decreased by approximately 10 percent from 1996 to 2016, while the number of operations that raised cattle decreased by approximately 30 percent.

A.1.a. Number of cattle and calves, by cattle class and by year:

	January 1 Number (1,000 head)*				
	Year				
Cattle class	**1996**[1]	**2001**[2]	**2006**[3]	**2011**[4]	**2016**[5]
All cattle and calves	103,548	97,298	96,342	92,887	91,988
Cattle 500 lb and over	85,164	81,082	81,003	78,278	77,930
Beef cows	35,319	33,398	32,703	30,913	30,331
Dairy cows	9,420	9,172	9,104	9,156	9,315
Heifers, steers, and bulls	40,426	38,511	39,196	38,209	38,285
Calves under 500 lb	18,384	16,216	15,339	14,610	14,057

*Numbers may not add up due to rounding.

[1]NASS, Cattle, Final Estimates 1994–1998, January 1999.

[2]NASS, Cattle, Final Estimates 1999–2003, April 2004.

[3]NASS, Cattle, Final Estimates, 2004–2008, March 2009.

[4]NASS, Cattle, Final Estimates, 2009–2013, September 2014.

[5]NASS, Cattle Report, January 29, 2016. The January 2016 inventory numbers were revised by NASS in January 2017 to 91,918. Some of the estimates in this report are based on the January 2016 number.

A.1.b. Number of operations with cattle and calves, beef cows, and/or milk cows, by year:

	Number Operations				
	Year				
	1995[1]	**2000**[1]	**2005**[2]	**2010**[3]	**2015**[4]
Cattle and calves	1,190,630	1,076,370	982,510	935,000	848,397
Beef cows	897,660	831,270	770,170	742,000	701,655
Milk cows	139,670	105,055	78,300	62,500	57,586

[1]NASS Quickstats, quickstats.nass.usda.
[2]NASS Farms, Land in Farms, and Livestock Operations, 2005 Summary, January 2006.
[3]NASS Farms, Land in Farms, and Livestock Operations, 2010 Summary, February 2011.
[4]Estimated by NAHMS.

A.1.c. Calf crop and calf crop per 100 cows on hand, by year:

	Year				
	1995[1]	**2000**[2]	**2005**[3]	**2010**[4]	**2015**[5]
Calf crop (1,000 head)	40,251	38,621	37,780	35,685	34,302
Calf crop per 100 cows on hand (January 1)	88.3	90.4	89.8	88.2	88.8

[1]NASS Cattle report February 2, 1996.
[2]NASS Cattle report January 26, 2001.
[3]NASS Cattle report January 27, 2006.
[4]NASS Cattle report January 28, 2011.
[5]NASS Cattle report January 29, 2016. The 2015 calf crop was revised by NASS in January 2017 to 34,087. Some of the estimates in this report are based on the 2015 calf crop number in the table.

A.1.d. Number of cattle over 500 lb on January 1, 2016, and calf crop (2015), by type of operation:

	Number (1,000 head)				
	Operation Type				
	Beef	**Dairy**	**Mixed**	**Other**	**Total**
Cattle over 500 lb	51,970	13,307	1,302	11,352	77,930
Calf crop	26,235	7,071	601	395	34,302

Source: Estimates by NAHMS.

2. Operation characteristics, 2016

Some tables in section II show death losses by type of operation: beef, dairy, mixed, and “other” (see Terms Used in This Report, p 2, for definition of operation types). The purpose of the following two tables is to show the relative proportion of operation types and how well operation types capture cattle types.

About two-thirds of operations (62.5 percent) were beef operations, and about two-thirds of inventory (66.4 percent) was made up of cattle on beef operations.

A.2.a. Percentage of operations and percentage of inventory, by type of operation:

Operation type	Percent operations	Std. error	Percent inventory	Std. error
Beef	62.5	(0.6)	66.4	(0.9)
Dairy	4.5	(0.2)	18.0	(0.7)
Mixed	0.4	(0.0)	1.8	(0.2)
Other	32.6	(0.6)	13.8	(0.9)
Total	100.0		100.0	

Source: Estimated by NAHMS.

Almost all beef cows (99.2 percent) were on beef operations, and almost all dairy cows (93.6 percent) were on dairy operations. Bulls, heifers, and steers were primarily found on beef and “other” operations.

A.2.b. Percentage of inventory by type of operation and by class of cattle:

Percent Inventory

	Cattle Class									
	Beef cows		Dairy cows		Bulls, heifers, and steers		Calves less than 500 lb		All cattle and calves	
Operation type	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Beef	99.2	(0.1)	0.1	(0.0)	54.5	(1.5)	68.8	(1.2)	66.4	(0.9)
Dairy	0.0	(0.0)	93.6	(0.7)	12.5	(0.5)	18.1	(0.6)	18.0	(0.7)
Mixed	0.8	(0.1)	6.3	(0.7)	1.2	(0.1)	1.9	(0.2)	1.8	(0.2)
Other	0.0	(—)	0.0	(—)	31.8	(1.7)	11.3	(1.3)	13.8	(0.9)
Total	100.0		100.0		100.0		100.0		100.0	

Source: Estimates by NAHMS.

B. State Demographics—Inventory and Calf Crop, January 1, 2016

Total U.S. inventory of adult cattle over 500 lb was 77.9 million head. Texas had by far the largest inventory of adult cattle (9.8 million head), followed by Nebraska and Kansas (6.1 million and 5.6 million head, respectively).

B.1. Number and percentage of cattle over 500 lb on January 1, 2016, and calf crop (2015), by State:

	Number (1,000 head)					
	Cattle over 500 lb		**Calf crop**		**All**	
State	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
AL	925	1.2	580	1.7	1,505	1.3
AZ	800	1.0	295	0.9	1,095	1.0
AR	1,335	1.7	760	2.2	2,095	1.9
CA	4,120	5.3	1,990	5.8	6,110	5.4
CO	2,550	3.3	800	2.3	3,350	3.0
FL	1,310	1.7	800	2.3	2,110	1.9
GA	820	1.1	500	1.5	1,320	1.2
ID	2,080	2.7	940	2.7	3,020	2.7
IL	930	1.2	415	1.2	1,345	1.2
IN	694	0.9	335	1.0	1,029	0.9
IA	3,450	4.4	1,060	3.1	4,510	4.0
KS	5,560	7.1	1,330	3.9	6,890	6.1
KY	1,700	2.2	970	2.8	2,670	2.4
LA	627	0.8	350	1.0	977	0.9
MI	945	1.2	400	1.2	1,345	1.2
MN	1,940	2.5	770	2.2	2,710	2.4
MS	745	1.0	400	1.2	1,145	1.0
MO	3,170	4.1	1,760	5.1	4,930	4.4
MT	2,525	3.2	1,470	4.3	3,995	3.6
NE	6,135	7.9	1,660	4.8	7,795	6.9
NV	378	0.5	200	0.6	578	0.5
New England[1]	385	0.5	192	0.6	577	0.5

continued→

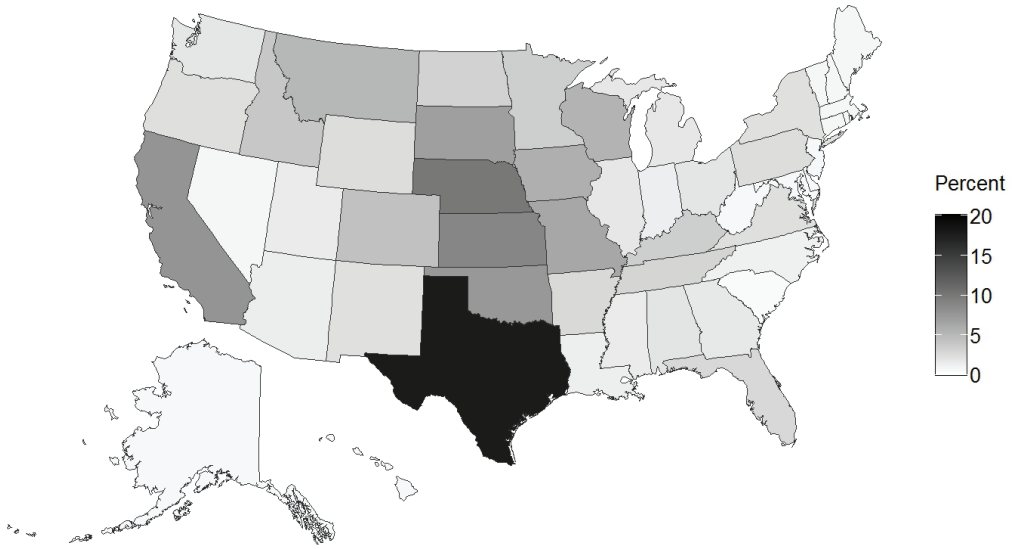
B.1. (cont'd.) Number and percentage of cattle over 500 lb on January 1, 2016, and calf crop (2015), by State:

	Number (1,000 head)					
	Cattle over 500 lb		**Calf crop**		**All**	
State	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
NM	1,195	1.5	560	1.6	1,755	1.6
NY	1,220	1.6	530	1.5	1,750	1.6
NC	580	0.7	360	1.0	940	0.8
ND	1,610	2.1	830	2.4	2,440	2.2
OH	995	1.3	470	1.4	1,465	1.3
OK	4,030	5.2	1,770	5.2	5,800	5.2
OR	1,150	1.5	630	1.8	1,780	1.6
PA	1,310	1.7	580	1.7	1,890	1.7
SC	265	0.3	145	0.4	410	0.4
SD	3,680	4.7	1,660	4.8	5,340	4.8
TN	1,415	1.8	860	2.5	2,275	2.0
TX	9,840	12.6	4,050	11.8	13,890	12.4
UT	745	1.0	390	1.1	1,135	1.0
VA	1,120	1.4	660	1.9	1,780	1.6
WA	998	1.3	425	1.2	1,423	1.3
WV	318	0.4	190	0.6	508	0.5
WI	2,820	3.6	1,390	4.1	4,210	3.8
WY	1,210	1.6	670	2.0	1,880	1.7
Other States[2]	306	0.4	155	0.5	461	0.4
United States	77,931	100.0	34,302	100.0	112,233	100.0

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

Percentage of U.S. cattle and calf inventory, by State



Note: States in the New England and “Other States” categories from table B.1 are shaded as a group.

Section II: Death Loss

Unless otherwise noted, numbers in this section were estimated by NAHMS.

A. Death Loss Due to Nonpredator and Predator Causes

1. Number of cattle and calves lost, 1995–2015

Almost 3.9 million cattle and calves were lost to all causes in 2015.

A.1.a. Cattle and calves death losses due to all causes, by year:

Number (1,000 head)

Year

	1995[1]	2000[1]	2005[2]	2010[3]	2015[4]
Cattle	1,645	1,711	1,718	1,734	1,736
Calves	2,739	2,387	2,335	2,259	2,144
Total	4,384	4,098	4,053	3,993	3,880

[1]NASS Quickstats, quickstats.nass.usda.
[2]NASS Cattle Death Loss, May 5, 2006.
[3]NASS Cattle Death Loss, May 12, 2011.
[4] NASS Meat Animals Production, Disposition, and Income 2015 Summary, April 2016.

The percentage of adult cattle and calf crop lost to all causes has remained relatively constant since 2000.

A.1.b. Cattle death loss as a percentage of inventory of cattle 500 lb or more on January 1 of the following year, and calf death loss as a percentage of calf crop, by year:

Percent

Year

Death loss	1995	2000	2005	2010	2015
Cattle	1.9	2.1	2.1	2.2	2.2
Calf	6.8	6.2	6.3	6.3	6.2

In 2015, deaths due to nonpredator causes accounted for almost 98 percent of all deaths in adult cattle and almost 89 percent of all deaths in calves in 2015. From 1995 to 2015, the overall number of calves that died declined. During the same period, the number and percentage of deaths attributed to predators increased. The percentage of calf deaths attributed to predators increased steadily from 3.5 percent in 1995 to 11.1 percent in 2015.

A.1.c. Number and percentage of all cattle death losses, by cause and by year:

	Number (1,000 head) **and Percent Loss**									
	Year									
	1995		**2000**		**2005**		**2010**		**2015**	
Cause	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
Nonpredator	1,622.7	98.7	1,689.6	98.8	1,683.0	98.0	1,694.0	97.7	1,694.6	97.6
Predator	21.4	1.3	20.5	1.2	34.0	2.0	39.8	2.3	41.7	2.4
Total	1,644.1	100.0	1,710.1	100.0	1,717.0	100.0	1,733.8	100.0	1,736.3	100.0

A.1.d. Number and percentage of all calf death losses, by cause and by year:

	Number (1,000 head) **and Percent Loss**									
	Year									
	1995		**2000**		**2005**		**2010**		**2015**	
Cause	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
Nonpredator	2,640.9	96.5	2,262.4	94.8	2,178.0	93.3	2,079.0	92.0	1,904.8	88.9
Predator	97.4	3.5	124.1	5.2	156.0	6.7	180.1	8.0	238.9	11.1
Total	2,738.3	100.0	2,386.5	100.0	2,334.0	100.0	2,259.1	100.0	2,143.7	100.0

2. Nonpredator and predator death loss, 2015

Dairy operations had a lower percentage of deaths in adult cattle and calves due to predators than all other operation types.

A.2.a. Number and percentage of cattle deaths, by cause and by type of operation:

Number (1,000 head) **and Percent**

	Operation Type							
	Beef		**Dairy**		**Mixed**		**Other**	
Cause	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
Nonpredator	897.2	96.2	412.5	99.8	37.4	96.7	347.5	98.9
Predator	35.7	3.8	0.8	0.2	1.3	3.3	3.9	1.1
Total	932.9	100.0	413.3	100.0	38.7	100.0	351.4	100.0

On beef operations, calf deaths attributed to predators accounted for nearly 16 percent of all calf deaths and nearly triple the proportion of predator-related deaths in the next highest category, mixed operations.

A.2.b. Number and percentage of calf deaths, by cause and by type of operation:

Number (1,000 head) **and Percent**

	Operation Type							
	Beef		**Dairy**		**Mixed**		**Other**	
Cause	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
Nonpredator	1,220.7	84.3	471.3	98.8	40.0	95.3	172.9	97.4
Predator	226.7	15.7	5.5	1.2	2.0	4.7	4.7	2.6
Total	1,447.4	100.0	476.8	100.0	42.0	100.0	177.6	100.0

A.2.c. Cattle death loss as a percentage of cattle 500 lb or more on January 1, 2016, and calf death loss as a percentage of calf crop (2015), by operation type:

	Percent Operation Type			
	Beef	**Dairy**	**Mixed**	**Other**
Cattle	1.8	3.1	3.0	3.1
Calves	5.5	6.7	7.0	*

*Not reported because “other” operations, e.g., feedlot or stocker, generally have few or no calves born.

A.2.d. Number of cattle over 500 lb that died in 2015, by cause and by State:

	Number of Cattle Deaths Cause		
	Nonpredator	**Predator**	**Total[3]**
AL	17,310	2,690	20,000
AZ	22,140	860	23,000
AR	31,300	700	32,000
CA	98,900	1,100	100,000
CO	58,840	1,160	60,000
FL	28,590	1,410	30,000
GA	18,280	1,720	20,000
ID	40,100	900	41,000
IL	17,860	140	18,000
IN	17,640	360	18,000
IA	69,750	250	70,000
KS	134,680	320	135,000
KY	37,210	1,790	39,000
LA	15,650	350	16,000
MI	23,880	120	24,000
MN	44,640	360	45,000
MS	21,790	210	22,000
MO	63,970	1,030	65,000
MT	25,070	930	26,000
NE	119,350	650	120,000
NV	5,350	150	5,500
New England[1]	9,060	140	9,200

continued→

A.2.d. (cont'd.) Number of cattle over 500 lb that died in 2015, by cause and by State:

	Number of Cattle Deaths		
	Cause		
	Nonpredator	**Predator**	**Total[3]**
NM	23,710	1,290	25,000
NY	(D)	(D)	28,000
NC	10,840	160	11,000
ND	13,700	300	14,000
OH	20,690	310	21,000
OK	91,530	3,470	95,000
OR	19,680	1,320	21,000
PA	31,840	160	32,000
SC	6,450	560	7,000
SD	59,610	400	60,000
TN	24,410	590	25,000
TX	297,850	12,150	310,000
UT	(D)	(D)	13,000
VA	21,410	1,590	23,000
WA	21,770	240	22,000
WV	6,880	120	7,000
WI	62,380	620	63,000
WY	11,380	620	12,000
Other States[2]	8,310	290	8,600
United States	1,694,620	41,680	1,736,300

(D)=Number suppressed to avoid potential disclosure of respondent.
[1]New England includes CT, ME, MA, NH, RI, and VT.
[2]Other States include AK, DE, HI, MD, and NJ.
[3]Totals match NASS Meat Animals Production, Disposition, and Income 2015 Summary, April 2016. Ratios of death losses due to nonpreator and predator causes are maintained and weighted to match these totals.

A.2.e. Number of calves that died in 2015, by cause and by State:

	Number of Calf Deaths Cause		
	Nonpredator	**Predator**	**Total[3]**
AL	19,870	8,130	28,000
AZ	15,740	3,260	19,000
AR	32,940	6,060	39,000
CA	131,820	8,180	140,000
CO	51,080	3,920	55,000
FL	25,980	9,020	35,000
GA	17,080	4,920	22,000
ID	48,950	3,050	52,000
IL	28,400	2,600	31,000
IN	21,940	1,060	23,000
IA	101,480	3,520	105,000
KS	66,730	3,270	70,000
KY	65,140	9,860	75,000
LA	12,920	4,080	17,000
MI	42,120	880	43,000
MN	80,460	4,540	85,000
MS	19,940	5,060	25,000
MO	105,270	9,730	115,000
MT	55,660	6,340	62,000
NE	74,800	5,200	80,000
NV	9,020	1,980	11,000
New England[1]	11,820	480	12,300

continued→

A.2.e. (cont'd.) Number of calves that died in 2015, by cause and by State:

	Number of Calf Deaths Cause		
	Nonpredator	**Predator**	**Total[3]**
NM	36,790	8,210	45,000
NY	39,460	1,540	41,000
NC	13,790	2,210	16,000
ND	33,120	4,880	38,000
OH	27,100	2,900	30,000
OK	105,690	24,310	130,000
OR	33,790	6,210	40,000
PA	34,910	1,090	36,000
SC	4,530	1,970	6,500
SD	74,230	5,770	80,000
TN	39,840	8,160	48,000
TX	174,370	45,640	220,000
UT	18,440	2,560	21,000
VA	38,440	8,570	47,000
WA	20,960	1,040	22,000
WV	12,680	320	13,000
WI	125,750	4,250	130,000
WY	24,220	2,780	27,000
Other States[2]	7,540	1,360	8,900
United States	1,904,810	238,890	2,143,700

[1]New England includes CT, ME, MA, NH, RI, and VT.
[2]Other States include AK, DE, HI, MD, and NJ.
[3]Totals match NASS Meat Animals Production, Disposition, and Income 2015 Summary, April 2016. Ratios of death losses due to nonpredator and predator causes are maintained and weighted to match these totals.

About one-third of cattle operations had any deaths in cattle over 500 lb: 32.1 percent had deaths due to nonpredator causes, and 1.8 percent had deaths due to predators.

A.2.f. Percentage of operations with any cattle deaths due to nonpredator, predator, and all causes, by State:

	Percent Operations					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
AL	34.2	(3.2)	4.9	(1.5)	37.7	(3.3)
AZ	17.5	(4.0)	3.4	(1.7)	20.6	(4.2)
AR	40.2	(3.1)	1.7	(0.8)	41.0	(3.1)
CA	30.3	(3.6)	3.4	(1.2)	32.6	(3.9)
CO	33.5	(4.1)	4.4	(2.1)	35.0	(4.2)
FL	25.2	(3.4)	4.9	(1.7)	28.9	(3.6)
GA	35.2	(3.7)	5.6	(2.4)	36.5	(3.7)
ID	20.6	(4.3)	1.8	(0.4)	21.3	(4.3)
IL	27.4	(3.1)	0.1	(0.1)	27.5	(3.1)
IN	28.4	(3.2)	1.3	(0.9)	29.1	(3.3)
IA	38.5	(2.7)	0.5	(0.5)	39.0	(2.7)
KS	39.7	(3.3)	0.8	(0.4)	39.9	(3.3)
KY	29.4	(2.5)	2.5	(0.7)	30.5	(2.5)
LA	39.2	(4.3)	1.3	(0.6)	39.6	(4.4)
MI	25.7	(4.7)	0.6	(0.6)	25.7	(4.7)
MN	36.4	(3.2)	1.0	(0.4)	36.8	(3.2)
MS	46.0	(3.6)	1.1	(0.6)	46.2	(3.6)
MO	33.2	(2.3)	0.9	(0.3)	33.4	(2.3)
MT	41.1	(3.7)	2.0	(0.7)	41.8	(3.7)
NE	42.8	(3.0)	0.7	(0.5)	43.5	(3.0)
NV	36.3	(7.4)	2.7	(1.2)	36.3	(7.4)
New England[1]	25.4	(2.7)	2.0	(1.2)	27.5	(2.9)

continued→

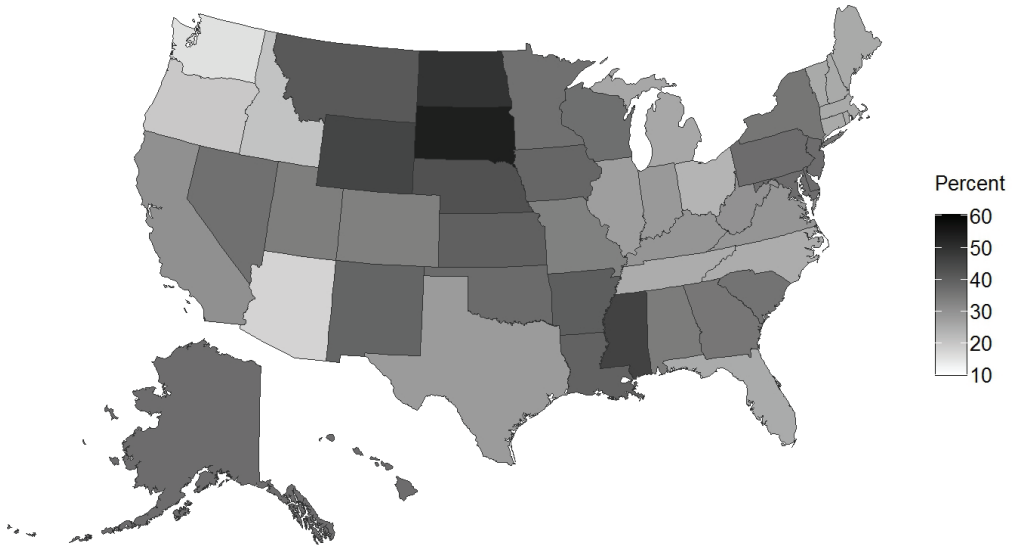
A.2.f. (cont'd.) Percentage of operations with any cattle deaths due to nonpredator, predator, and all causes, by State:

	Percent Operations Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
NM	38.6	(7.5)	3.8	(1.7)	41.3	(7.3)
NY	35.3	(4.8)	0.3	(0.2)	35.5	(4.8)
NC	25.0	(4.3)	0.3	(0.2)	25.2	(4.3)
ND	49.1	(3.9)	1.5	(0.6)	49.6	(3.9)
OH	23.4	(2.9)	0.4	(0.3)	23.6	(3.0)
OK	37.3	(3.2)	2.7	(0.5)	39.2	(3.2)
OR	19.6	(4.1)	2.3	(1.1)	20.5	(4.1)
PA	36.9	(3.3)	0.5	(0.4)	37.3	(3.3)
SC	35.8	(5.6)	5.6	(2.7)	39.6	(5.9)
SD	53.6	(3.8)	1.8	(1.1)	54.6	(3.8)
TN	25.0	(2.6)	0.7	(0.5)	25.3	(2.6)
TX	28.0	(2.1)	1.9	(0.5)	29.1	(2.1)
UT	33.8	(4.2)	0.7	(0.3)	34.2	(4.2)
VA	29.4	(3.5)	2.9	(2.1)	32.1	(3.9)
WA	15.4	(3.4)	0.8	(0.4)	15.8	(3.4)
WV	30.0	(4.4)	1.1	(1.1)	30.1	(4.4)
WI	36.5	(2.5)	0.9	(0.4)	36.5	(2.5)
WY	45.3	(6.1)	4.2	(1.6)	48.2	(6.2)
Other States[2]	36.9	(8.4)	1.3	(0.7)	37.5	(8.4)
United States	32.1	(0.6)	1.8	(0.2)	33.1	(0.6)

[1]New England includes CT, ME, MA, NH, RI, and VT.

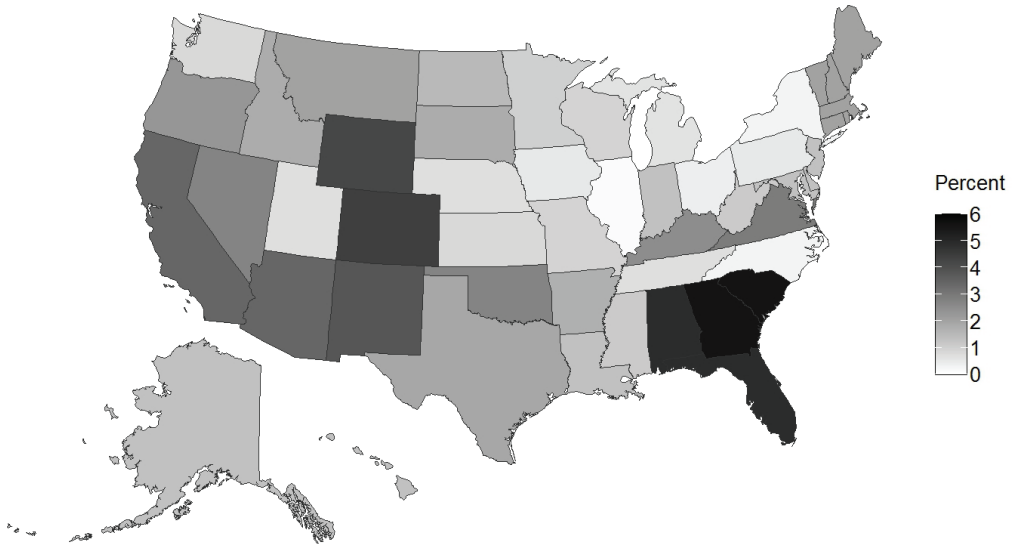
[2]Other States include AK, DE, HI, MD, and NJ.

Percentage of operations with any cattle deaths due to nonpredator causes, by State



Note: States in the New England and “Other States” categories from table A.2.f are shaded as a group.

Percentage of operations with any cattle deaths due to predators, by State



Note: States in the New England and “Other States” categories from table A.2.f are shaded as a group.

A higher percentage of dairy and mixed operations had any cattle deaths compared with beef and “other” operations. In the case of beef operations, the difference might be because cattle on beef operations are not observed as frequently as on dairy and mixed operations and, therefore, cattle deaths could go unnoticed on cattle operations.

A.2.g. Percentage of operations with any cattle deaths due to nonpredator, predator, and all causes, by type of operation:

	Percent Operations							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Cause	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Nonpredator	31.9	(0.7)	56.5	(2.3)	67.2	(5.6)	20.4	(1.4)
Predator	1.9	(0.2)	0.4	(0.1)	4.5	(3.0)	1.6	(0.6)
All	32.9	(0.7)	56.6	(2.3)	67.5	(5.6)	21.5	(1.5)

.

About 42 percent of cattle operations had any calf deaths; 37.8 percent had deaths due to nonpredator causes and 8.3 percent had deaths due to predators.

A.2.h. Percentage of operations with any calf deaths due to nonpredator, predator, and all causes, by State:

	Percent Operations					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
AL	36.9	(3.4)	13.7	(2.3)	44.7	(3.6)
AZ	17.0	(4.0)	12.2	(3.6)	26.8	(4.6)
AR	42.7	(3.3)	11.1	(2.1)	49.7	(3.4)
CA	33.6	(4.4)	11.4	(2.0)	37.5	(4.6)
CO	43.7	(4.6)	7.9	(2.3)	45.4	(4.6)
FL	21.7	(3.8)	9.6	(2.0)	26.8	(3.9)
GA	40.5	(4.1)	11.7	(2.2)	47.1	(4.2)
ID	28.0	(3.7)	5.4	(1.5)	28.9	(3.7)
IL	38.0	(3.6)	5.2	(1.8)	38.8	(3.6)
IN	32.8	(3.8)	4.2	(1.9)	34.4	(3.8)
IA	45.1	(2.8)	3.8	(1.1)	47.0	(2.9)
KS	43.5	(3.6)	5.2	(1.0)	44.6	(3.6)
KY	43.6	(3.2)	9.4	(1.5)	49.9	(3.3)
LA	36.7	(4.3)	11.2	(2.2)	43.5	(4.3)
MI	33.4	(4.9)	2.5	(1.5)	33.4	(4.9)
MN	36.0	(3.1)	4.2	(1.0)	37.3	(3.2)
MS	41.2	(3.4)	12.2	(2.2)	48.5	(3.5)
MO	48.7	(2.7)	6.7	(1.2)	50.1	(2.7)
MT	55.7	(3.9)	9.8	(1.8)	58.0	(4.0)
NE	53.8	(3.1)	7.3	(1.5)	56.7	(3.1)
NV	40.7	(7.5)	11.8	(3.4)	42.5	(7.6)
New England[1]	33.2	(4.0)	3.6	(1.2)	35.8	(4.1)

continued→

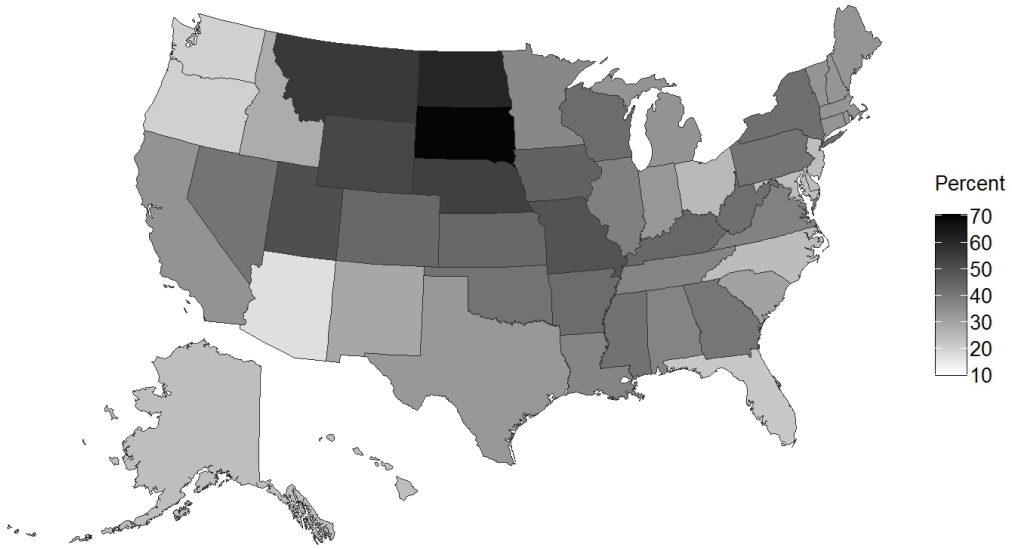
A.2.h. (cont'd.) Percentage of operations with any calf deaths due to nonpredator, predator, and all causes, by State:

	Percent Operations					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
NM	29.0	(4.9)	15.0	(3.4)	37.0	(5.7)
NY	41.8	(4.9)	4.4	(1.8)	44.2	(5.1)
NC	24.3	(3.9)	5.6	(1.8)	26.4	(3.9)
ND	60.7	(4.1)	17.4	(2.6)	66.5	(4.1)
OH	25.0	(2.9)	5.3	(1.5)	28.8	(3.1)
OK	41.0	(2.4)	15.8	(2.8)	51.6	(3.4)
OR	20.0	(3.2)	4.1	(0.9)	20.8	(3.3)
PA	40.8	(3.2)	1.5	(0.7)	41.7	(3.2)
SC	30.1	(5.2)	14.2	(4.0)	38.2	(5.7)
SD	69.6	(3.7)	12.3	(2.2)	70.1	(3.7)
TN	36.7	(2.9)	9.2	(1.5)	41.9	(3.0)
TX	32.4	(2.3)	9.9	(1.2)	39.1	(2.4)
UT	49.5	(5.5)	9.1	(3.0)	50.3	(5.5)
VA	37.7	(3.6)	13.3	(2.5)	44.8	(3.8)
WA	19.8	(4.4)	2.4	(0.6)	20.5	(4.4)
WV	41.8	(4.7)	1.4	(1.1)	42.9	(4.7)
WI	42.6	(2.8)	3.4	(0.9)	44.5	(2.8)
WY	52.0	(6.4)	7.8	(1.2)	53.1	(6.4)
Other States[2]	23.7	(4.2)	5.1	(2.2)	28.5	(5.0)
United States	37.8	(0.6)	8.3	(0.3)	42.2	(0.7)

[1]New England includes CT, ME, MA, NH, RI, and VT.

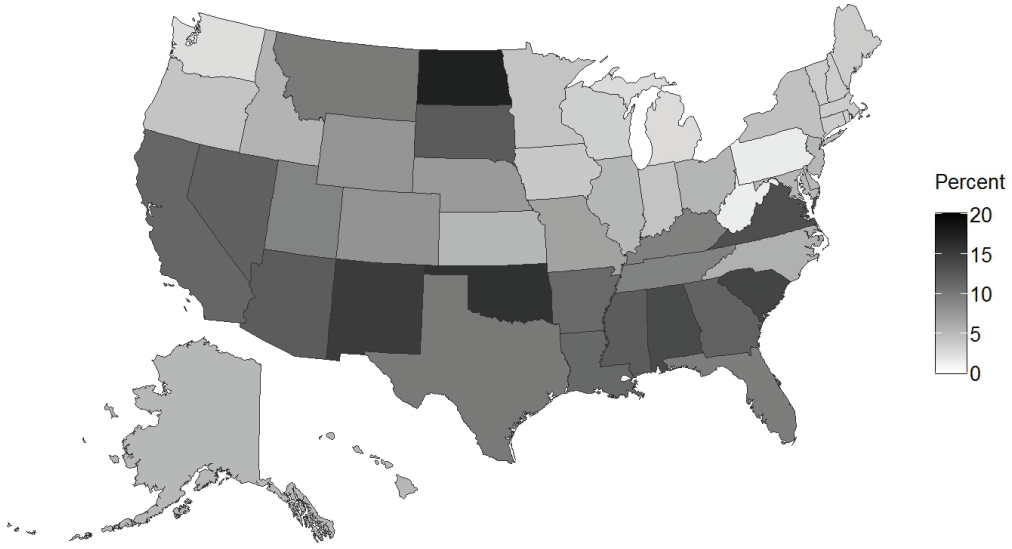
[2]Other States include AK, DE, HI, MD, and NJ.

Percentage of operations with any calf deaths due to nonpredator causes, by State



Note: States in the New England and "Other States" categories from table A.2.f are shaded as a group.

Percentage of operations with any calf deaths due to predators, by State



Note: States in the New England and "Other States" groups from table A.2.f are shaded as a group.

A higher percentage of dairy and mixed operations than “other” operations had any calf deaths. Again, this difference might be because deaths on beef operations are more likely to go unnoticed.

A.2.i. Percentage of operations with any calf deaths due to nonpredator, predator, and all causes, by type of operation:

	Percent Operations							
	Operation Type							
	Beef		Dairy		Mixed		Other	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Nonpredator	31.9	(0.7)	64.8	(2.4)	77.8	(5.9)	14.4	(1.3)
Predator	9.7	(0.4)	2.5	(0.4)	11.6	(2.4)	1.6	(0.5)
All	44.2	(0.8)	65.3	(2.4)	78.6	(5.9)	15.3	(1.3)

The percentage of cattle inventory lost to nonpredator causes ranged from 0.9 percent in North Dakota and Wyoming to 3.0 percent in Texas.

A.2.j. Cattle death loss due to nonpredator, predator, and all causes, as a percentage of inventory of cattle 500 lb or more on January 1, 2016, by State:

	Percent Adult Cattle Inventory					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
AL	1.9	(0.2)	0.3	(0.1)	2.2	(0.2)
AZ	2.8	(0.4)	0.1	(0.0)	2.9	(0.4)
AR	2.3	(0.2)	0.1	(0.0)	2.4	(0.2)
CA	2.4	(0.2)	0.0	(0.0)	2.4	(0.2)
CO	2.3	(0.2)	0.0	(0.0)	2.4	(0.2)
FL	2.2	(0.4)	0.1	(0.0)	2.3	(0.4)
GA	2.2	(0.2)	0.2	(0.1)	2.4	(0.2)
ID	1.9	(0.2)	0.0	(0.0)	2.0	(0.2)
IL	1.9	(0.2)	0.0	(0.0)	1.9	(0.2)
IN	2.5	(0.2)	0.1	(0.0)	2.6	(0.2)
IA	2.0	(0.2)	0.0	(0.0)	2.0	(0.2)
KS	2.4	(0.4)	0.0	(0.0)	2.4	(0.4)
KY	2.2	(0.2)	0.1	(0.0)	2.3	(0.2)
LA	2.5	(0.2)	0.1	(0.0)	2.6	(0.3)
MI	2.5	(0.2)	0.0	(0.0)	2.5	(0.2)
MN	2.3	(0.2)	0.0	(0.0)	2.3	(0.2)
MS	2.9	(0.7)	0.0	(0.0)	3.0	(0.7)
MO	2.0	(0.1)	0.0	(0.0)	2.1	(0.1)
MT	1.0	(0.1)	0.0	(0.0)	1.0	(0.1)
NE	1.9	(0.2)	0.0	(0.0)	2.0	(0.2)
NV	1.4	(0.2)	0.0	(0.0)	1.5	(0.2)
New England[1]	2.4	(0.2)	0.0	(0.0)	2.4	(0.2)

continued→

A.2.j. (cont'd.) Cattle death loss due to nonpredator, predator, and all causes, as a percentage of inventory of cattle 500 lb or more on January 1, 2016, by State:

	Percent Adult Cattle Inventory					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
NM	2.0	(0.3)	0.1	(0.0)	2.1	(0.3)
NY	2.3	(0.2)	0.0	(0.0)	2.3	(0.2)
NC	1.9	(0.3)	0.0	(0.0)	1.9	(0.3)
ND	0.9	(0.1)	0.0	(0.0)	0.9	(0.1)
OH	2.1	(0.2)	0.0	(0.0)	2.1	(0.2)
OK	2.3	(0.2)	0.1	(0.0)	2.4	(0.2)
OR	1.7	(0.3)	0.1	(0.0)	1.8	(0.3)
PA	2.4	(0.1)	0.0	(0.0)	2.4	(0.1)
SC	2.4	(0.4)	0.2	(0.1)	2.6	(0.4)
SD	1.6	(0.1)	0.0	(0.0)	1.6	(0.1)
TN	1.7	(0.2)	0.0	(0.0)	1.8	(0.2)
TX	3.0	(0.3)	0.1	(0.0)	3.2	(0.3)
UT	1.7	(0.2)	0.0	(0.0)	1.7	(0.2)
VA	1.9	(0.2)	0.1	(0.1)	2.1	(0.2)
WA	2.2	(0.2)	0.0	(0.0)	2.2	(0.2)
WV	2.2	(0.6)	0.0	(0.0)	2.2	(0.6)
WI	2.2	(0.1)	0.0	(0.0)	2.2	(0.1)
WY	0.9	(0.1)	0.1	(0.0)	1.0	(0.1)
Other States[2]	2.7	(0.3)	0.1	(0.0)	2.8	(0.3)
United States	2.2	(0.1)	0.1	(0.0)	2.2	(0.1)

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

Some percentages may not sum exactly due to rounding.

Minnesota and Michigan had the highest percentage of calves born that were lost to nonpredator causes (10.5 percent each).

A.2.k. Calf death loss due to nonpredator, predator, and all causes, as a percentage of calf crop (2015), by State:

	Percent Calf Crop					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
AL	3.4	(0.4)	1.4	(0.2)	4.8	(0.4)
AZ	5.4	(0.8)	1.1	(0.3)	6.5	(0.8)
AR	4.4	(0.3)	0.8	(0.1)	5.2	(0.3)
CA	6.6	(0.6)	0.4	(0.1)	7.1	(0.6)
CO	6.5	(0.5)	0.5	(0.1)	7.0	(0.5)
FL	3.3	(0.4)	1.1	(0.2)	4.4	(0.4)
GA	3.4	(0.3)	1.0	(0.2)	4.4	(0.4)
ID	5.2	(0.8)	0.3	(0.1)	5.5	(0.9)
IL	6.9	(0.7)	0.6	(0.2)	7.5	(0.7)
IN	6.6	(0.6)	0.3	(0.1)	6.9	(0.6)
IA	9.6	(0.7)	0.3	(0.1)	9.9	(0.7)
KS	5.0	(0.5)	0.2	(0.1)	5.3	(0.5)
KY	6.7	(0.5)	1.0	(0.2)	7.7	(0.5)
LA	3.7	(0.4)	1.2	(0.3)	4.9	(0.4)
MI	10.5	(1.0)	0.2	(0.1)	10.8	(1.0)
MN	10.5	(0.9)	0.6	(0.2)	11.1	(0.9)
MS	5.0	(0.7)	1.3	(0.2)	6.3	(0.7)
MO	6.0	(0.3)	0.6	(0.1)	6.6	(0.3)
MT	3.8	(0.2)	0.4	(0.1)	4.2	(0.2)
NE	4.5	(0.2)	0.3	(0.1)	4.8	(0.2)
NV	4.5	(0.4)	1.0	(0.3)	5.5	(0.4)
New England[1]	6.2	(0.4)	0.3	(0.1)	6.5	(0.4)

continued→

A.2.k. (cont'd.) Calf death loss due to nonpredator, predator, and all causes, as a percentage of calf crop (2015), by State:

	Percent Calf Crop					
	Cause					
	Nonpredator		Predator		All causes	
State	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
NM	6.6	(2.0)	1.5	(0.5)	8.1	(2.2)
NY	7.5	(0.6)	0.3	(0.1)	7.7	(0.7)
NC	3.8	(0.6)	0.6	(0.2)	4.5	(0.6)
ND	4.0	(0.2)	0.6	(0.1)	4.6	(0.3)
OH	5.8	(0.5)	0.6	(0.2)	6.4	(0.5)
OK	6.0	(0.3)	1.4	(0.2)	7.4	(0.3)
OR	5.4	(0.5)	1.0	(0.2)	6.4	(0.5)
PA	6.0	(0.5)	0.2	(0.1)	6.2	(0.5)
SC	3.1	(0.4)	1.4	(0.3)	4.5	(0.6)
SD	4.5	(0.2)	0.3	(0.1)	4.8	(0.3)
TN	4.6	(0.4)	0.9	(0.2)	5.6	(0.4)
TX	4.3	(0.3)	1.1	(0.2)	5.5	(0.4)
UT	4.7	(0.4)	0.7	(0.1)	5.4	(0.4)
VA	5.9	(0.4)	1.3	(0.2)	7.2	(0.5)
WA	4.9	(0.8)	0.2	(0.1)	5.2	(0.8)
WV	6.7	(0.8)	0.2	(0.1)	6.9	(0.8)
WI	9.0	(0.5)	0.3	(0.1)	9.4	(0.5)
WY	3.6	(0.2)	0.4	(0.0)	4.0	(0.2)
Other States[2]	4.9	(0.5)	0.9	(0.4)	5.8	(0.5)
United States	5.6	(0.1)	0.7	(0.0)	6.3	(0.1)

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

Some percentages may not sum exactly due to rounding.

B. Value of Cattle and Calves Lost

Total cattle and calf death losses were valued at $3.87 billion in 2015. Losses on beef operations accounted for 58 percent of the total value of losses.

B.1. Total value* of losses, by type of operation:

	Value ($1,000)		
Type of operation	**Cattle**	**Calves**	**Total**
Beef	1,585,868	668,931	2,254,799
Dairy	758,342	237,251	995,593
Mixed	67,759	23,532	91,291
Other	456,220	72,861	529,081
Total	2,868,189	1,002,575	3,870,764

*Based on values of cattle and calves on January 1, 2016, as reported by producers on the same survey. Producers were asked for the average value per head by type of cattle. The value of deaths was calculated as the number of deaths times the average value.

For cattle, nonpredator causes of death accounted for almost 98 percent of the total value of losses. For calves, nonpredator causes made up 88 percent of the total value.

B.2. Value of cattle death losses due to nonpredator and predator causes, by type of operation:

	Value ($1,000)		
Type of operation	**Nonpredator**	**Predator**	**Total**
Beef	1,526,668	59,200	1,585,868
Dairy	757,072	1,269	758,342
Mixed	65,516	2,244	67,759
Other	452,540	3,680	456,220
Total	2,801,796	66,393	2,868,189

B.3. Value of calf death losses due to nonpredator and predator causes, by type of operation:

	Value ($1,000)		
Type of operation	**Nonpredator**	**Predator**	**Total**
Beef	556,751	112,180	668,931
Dairy	234,737	2,514	237,251
Mixed	22,373	1,159	23,532
Other	71,459	1,401	72,861
Total	885,321	117,254	1,002,575

In 2015, cattle and calf losses were valued at over $766 million in Texas, by far the highest value of any State. States with over $200 million in total losses included California, Kansas, Nebraska, and Oklahoma.

B.4. Value of cattle and calves that died, by State:

	Value ($1,000)		
State	**Cattle**	**Calves**	**Total**
AL	24,509	16,794	41,303
AZ	26,261	9,272	35,533
AR	44,084	22,025	66,109
CA	172,421	81,973	254,394
CO	96,165	17,126	113,291
FL	48,485	20,520	69,005
GA	22,890	12,500	35,390
ID	60,885	17,759	78,644
IL	26,430	13,520	39,950
IN	26,913	9,896	36,809
IA	102,927	41,650	144,577
KS	229,903	29,656	259,559
KY	55,083	38,712	93,795
LA	26,014	9,533	35,547
MI	42,011	17,735	59,747
MN	64,258	39,536	103,794
MS	31,310	14,166	45,476
MO	95,638	61,890	157,527
MT	40,722	14,413	55,135
NE	212,740	22,082	234,821
NV	12,264	5,191	17,455
New England[1]	14,837	5,126	19,963

continued→

B.4. (cont'd.) Value of cattle and calves that died, by State:

	Value ($1,000)		
State	**Cattle**	**Calves**	**Total**
NM	36,828	20,316	57,144
NY	42,548	16,463	59,011
NC	13,590	8,635	22,225
ND	23,341	9,587	32,928
OH	32,428	13,888	46,316
OK	143,853	75,892	219,745
OR	36,671	19,599	56,270
PA	45,275	14,936	60,211
SC	8,020	3,309	11,329
SD	100,806	27,500	128,306
TN	33,163	25,618	58,781
TX	642,358	123,888	766,246
UT	18,308	7,512	25,820
VA	30,824	24,817	55,641
WA	32,244	9,293	41,537
WV	8,684	5,342	14,026
WI	111,917	62,528	174,446
WY	19,040	8,287	27,327
Other States[2]	11,543	4,087	15,630
United States	2,868,189	1,002,575	3,870,764

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

C. Cattle and Calves Death Loss Due to Nonpredator Causes, 2015

1. Death loss in cattle due to nonpredator causes

Almost 1.7 million cattle were lost to nonpredator causes in 2015. Respiratory problems accounted for the highest percentage of losses (23.9 percent), followed by unknown nonpredator causes (14.0 percent) and old age (11.8 percent).

About 1.9 million calves were lost to nonpredator causes in 2015. Respiratory problems accounted for the highest percentage of losses (26.9 percent), followed by calving-related problems (17.8 percent) and digestive problems (15.4 percent).

C.1.a. For all operations, number and percentage of cattle and calf death losses due to nonpredator causes, by cause:

	Cattle and Calf Death Loss			
	Cattle		Calves	
Nonpredator cause	Number	Percent	Number	Percent
Digestive problems[1]	134,240	7.9	293,670	15.4
Respiratory problems[2]	404,410	23.9	512,680	26.9
Metabolic problems[3]	42,590	2.5	23,150	1.2
Mastitis	71,720	4.2	9,220	0.5
Lameness or injury	108,710	6.4	36,110	1.9
Other diseases	91,9430	5.4	80,950	4.3
Weather related[4]	157,400	9.3	261,900	13.7
Calving-related problems	152,800	9.0	339,730	17.8
Poisoning[5]	23,810	1.4	8,820	0.5
Old age	200,270	11.8	NA	NA
Theft (stolen)	10,940	0.7	13,150	0.7
Other nonpredator causes	58,040	3.4	55,150	2.9
Unknown nonpredator causes	237,750	14.0	269,920	14.2
Total	1,694,620	100.0	1,904,810	100.0

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

For “other” operations (primarily feedlots and stockers), 55.0 percent of cattle deaths due to nonpredator causes were attributed to respiratory problems. On beef operations, nearly one-fifth of cattle deaths due to nonpredator causes were due to old age, a higher percentage than on any of the other operation types.

C.1.b. Percentage of cattle death loss due to nonpredator causes, by cause and by type of operation:

	Percent Loss							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Nonpredator cause	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Digestive problems[1]	5.3	(0.4)	10.5	(0.4)	7.5	(1.7)	11.9	(1.4)
Respiratory problems[2]	15.9	(1.8)	16.0	(0.8)	14.2	(2.9)	55.0	(2.6)
Metabolic problems[3]	0.8	(0.2)	7.9	(0.9)	3.3	(0.8)	0.4	(0.2)
Mastitis	0.3	(0.1)	14.1	(0.9)	12.5	(3.7)	1.8	(1.7)
Lameness or injury	4.6	(0.6)	12.0	(0.6)	7.3	(1.5)	4.2	(0.7)
Other diseases	4.4	(0.5)	6.6	(1.1)	3.7	(1.1)	6.8	(1.8)
Weather related[4]	11.8	(2.7)	7.4	(1.4)	4.4	(1.8)	5.5	(1.1)
Calving-related problems	12.8	(0.8)	7.5	(0.5)	8.4	(2.1)	1.1	(0.3)
Poisoning[5]	2.5	(0.4)	0.2	(0.1)	0.7	(0.3)	0.1	(0.1)
Old age	19.2	(1.1)	5.3	(0.5)	8.2	(2.1)	0.8	(0.3)
Theft (stolen)	1.1	(0.3)	0.0	(0.0)	0.1	(0.0)	0.2	(0.1)
Other nonpredator causes	3.9	(0.4)	2.7	(0.4)	1.2	(0.6)	3.2	(0.8)
Unknown nonpredator causes	17.3	(1.2)	9.6	(1.1)	28.5	(11.4)	9.3	(2.4)
Total	100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

On beef operations, a higher percentage of cattle died of old age (19.2 percent) than of any other nonpredator cause. Calving problems on smaller operations resulted in a higher percentage of cattle deaths due to nonpredator causes than on larger operations (17.8 and 14.3 percent for operations with 1 to 49 and 50 to 99 head, respectively, compared with 8.9 and 6.3 percent for operations with 100 to 499 and 500 or more head, respectively).

C.1.c. For beef operations, percentage of cattle death loss due to nonpredator causes, by cause and by size of operation:

Percent Loss

Size of Operation (number of cows)

	1–49		50–99		100–499		500 or more		All operations	
Nonpredator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Digestive problems[1]	4.3	(0.6)	5.9	(1.0)	5.5	(0.7)	7.1	(1.1)	5.3	(0.4)
Respiratory problems[2]	13.7	(4.2)	11.7	(1.4)	17.6	(2.3)	24.5	(3.5)	15.9	(1.8)
Metabolic problems[3]	0.8	(0.5)	0.9	(0.3)	0.8	(0.2)	0.7	(0.2)	0.8	(0.2)
Mastitis	0.4	(0.2)	0.3	(0.2)	0.2	(0.1)	0.5	(0.2)	0.3	(0.1)
Lameness or injury	6.6	(1.5)	4.4	(0.6)	2.8	(0.4)	4.4	(0.6)	4.6	(0.6)
Other diseases	4.2	(1.1)	4.3	(0.6)	4.6	(0.6)	4.7	(0.8)	4.4	(0.5)
Weather related[4]	7.6	(1.0)	7.0	(1.1)	19.2	(6.6)	8.9	(1.2)	11.8	(2.7)
Calving-related problems	17.8	(1.8)	14.3	(1.8)	8.9	(0.9)	6.3	(0.9)	12.8	(0.8)
Poisoning[5]	2.6	(0.7)	2.5	(0.8)	2.3	(0.5)	2.7	(0.5)	2.5	(0.4)
Old age	20.5	(1.9)	25.8	(2.0)	16.0	(1.8)	15.3	(2.4)	19.2	(1.1)
Theft (stolen)	1.8	(0.8	0.2	(0.1)	1.0	(0.4)	0.4	(0.1)	1.1	(0.3)
Other nonpredator causes	4.8	(0.7)	5.7	(1.4)	2.9	(0.5)	1.8	(0.4)	3.9	(0.4)
Unknown nonpredator causes	15.1	(1.6)	17.0	(1.8)	18.0	(2.4)	22.7	(3.8)	17.3	(1.2)
Total	100.0		100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.

[2]Such as pneumonia or shipping fever.

[3]Such as milk fever or grass tetany.

[4]Such as chilling, drowning, or lightning.

[5]Such as by nitrate, noxious feeds, or noxious weeds.

On dairy operations, respiratory problems accounted for the highest percentage of cattle death loss due to nonpredator causes (16.0 percent), followed by mastitis (14.1 percent), and lameness or injury (12.0 percent). Calving problems accounted for a higher percentage of nonpredator-related deaths on the smallest operations (12.2 percent) than on the largest operations (6.0 percent).

C.1.d. For dairy operations, percentage of cattle death loss due to nonpredator causes, by cause and by size of operation:

Percent Loss

Size of Operation (number of cows)

	1–49		50–99		100–199		200–499		500 or more		All operations	
Nonpredator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Digestive problems[1]	10.8	(2.4)	7.9	(1.3)	7.7	(1.5)	7.7	(0.9)	11.6	(0.6)	10.5	(0.4)
Respiratory problems[2]	16.0	(4.6)	9.2	(1.4)	14.6	(2.1)	16.8	(1.5)	17.0	(0.9)	16.0	(0.8)
Metabolic problems[3]	10.3	(2.8)	9.1	(1.5)	8.2	(1.7)	7.4	(0.8)	7.6	(1.2)	7.9	(0.9)
Mastitis	7.7	(2.0)	13.4	(3.1)	13.3	(2.7)	16.1	(1.7)	14.5	(1.2)	14.1	(0.9)
Lameness or injury	14.0	(2.5)	19.1	(4.8)	14.8	(1.3)	12.0	(1.1)	10.7	(0.5)	12.0	(0.6)
Other diseases	4.4	(1.5)	4.2	(0.9)	4.8	(0.9)	4.6	(0.9)	7.6	(1.6)	6.6	(1.1)
Weather related[4]	0.4	(0.2)	1.8	(0.7)	2.4	(0.8)	0.6	(0.2)	10.3	(2.0)	7.4	(1.4)
Calving related problems	12.2	(2.7)	11.2	(1.6)	11.6	(1.3)	8.9	(1.1)	6.0	(0.6)	7.5	(0.5)
Poisoning[5]	1.0	(0.7)	0.7	(0.4)	0.3	(0.2)	0.3	(0.1)	0.0	(0.0)	0.2	(0.1)
Old age	9.2	(2.5)	6.8	(1.3)	7.5	(1.6)	7.7	(1.3)	4.2	(0.6)	5.3	(0.5)
Theft (stolen)	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(—)	0.1	(0.0)	0.0	(0.0)
Other nonpredator causes	1.8	(0.7)	5.0	(1.5)	4.9	(1.4)	8.3	(2.9)	1.4	(0.3)	2.7	(0.4)
Unknown nonpredator causes	12.2	(4.8)	11.5	(3.3)	9.9	(1.8)	9.7	(1.4)	9.2	(1.4)	9.6	(1.1)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

On mixed operations, the top three causes of death loss in cattle due to nonpredator causes were unknown nonpredator causes (28.5 percent of death losses, with a large standard error), respiratory problems (14.2 percent), and mastitis (12.5 percent).

C.1.e. For mixed operations, percentage of cattle death loss due to nonpredator causes, by cause and by size of operation:

Percent Loss

Size of Operation (number of cows)

Nonpredator cause	1–99 Pct.	1–99 Std. error	100–499 Pct.	100–499 Std. error	500 or more Pct.	500 or more Std. error	All operations Pct.	All operations Std. error
Digestive problems[1]	12.0	(4.5)	7.1	(2.2)	6.3	(2.4)	7.5	(1.7)
Respiratory problems[2]	15.0	(5.5)	16.5	(3.1)	12.2	(4.8)	14.2	(2.9)
Metabolic problems[3]	2.0	(1.1)	4.5	(1.2)	2.8	(1.1)	3.3	(0.8)
Mastitis	3.9	(1.6)	18.0	(6.5)	11.0	(5.1)	12.5	(3.7)
Lameness or injury	9.0	(3.3)	8.4	(1.8)	5.8	(2.1)	7.3	(1.5)
Other diseases	7.9	(3.2)	0.9	(0.4)	4.6	(2.0)	3.7	(1.1)
Weather related[4]	7.8	(4.6)	7.0	(4.0)	1.1	(0.6)	4.4	(1.8)
Calving-related problems	4.8	(1.8)	12.8	(3.4)	6.1	(2.9)	8.4	(2.1)
Poisoning[5]	2.6	(1.6)	0.1	(0.1)	0.6	(0.4)	0.7	(0.4)
Old age	19.4	(7.9)	9.2	(2.2)	3.6	(1.5)	8.2	(2.1)
Theft (stolen)	0.0	(—)	0.1	(0.1)	0.0	(0.0)	0.1	(0.0)
Other nonpredator causes	6.6	(3.0)	0.4	(0.2)	0.1	(0.0)	1.2	(0.6)
Unknown nonpredator causes	8.9	(5.0)	15.0	(4.4)	45.9	(18.4)	28.5	(11.4)
Total	100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

On “other” operations, respiratory problems accounted for the highest percentage of nonpredator death loss (55.0 percent). Operations with 1 to 99 head had a lower percentage of nonpredator deaths attributable to respiratory problems compared with the other operation sizes.

C.1.f. For “other” operations, percentage of cattle death loss due to nonpredator causes, by cause and by size of operation:

Percent Loss

Size of Operation (number of cattle and calves)

Nonpredator cause	1–99		100–499		500–999		1,000 or more		All operations	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Digestive problems[1]	6.6	(2.8)	7.8	(1.9)	3.4	(0.8)	14.3	(1.8)	11.9	(1.4)
Respiratory problems[2]	24.0	(5.6)	64.7	(4.3)	63.9	(5.6)	57.5	(3.2)	55.0	(2.6)
Metabolic problems[3]	0.0	(—)	0.5	(0.3)	2.9	(1.7)	0.2	(0.1)	0.4	(0.2)
Mastitis	(P)		0.6	(0.3)	0.0	(0.0)	0.0	(0.0)	1.8	(1.7)
Lameness or injury	4.3	(1.8)	3.8	(1.1)	4.4	(1.5)	4.2	(0.9)	4.2	(0.7)
Other diseases	7.1	(3.9)	9.8	(3.3)	9.7	(5.7)	6.0	(2.5)	6.8	(1.8)
Weather related[4]	10.9	(5.6)	5.6	(2.2)	2.2	(0.8)	4.5	(1.3)	5.1	(1.1)
Calving-related problems	3.4	(1.9)	0.9	(0.5)	0.0	(0.0)	0.7	(0.4)	1.0	(0.3)
Poisoning[5]	0.0	(0.0)	0.1	(0.0)	1.0	(0.9)	0.1	(0.0)	0.1	(0.1)
Old age	6.3	(2.4)	0.8	(0.5)	0.3	(0.3)	0.0	(0.0)	0.8	(0.3)
Theft (stolen)	1.5	(1.3)	0.2	(0.2)	0.0	(0.0)	0.0	(—)	0.2	(0.1)
Other nonpredator causes	13.3	(5.3)	1.3	(0.7)	2.0	(1.0)	2.1	(0.6)	3.2	(0.8)
Unknown nonpredator causes	7.2	(2.8)	4.0	(0.9)	10.1	(3.4)	10.4	(3.4)	9.3	(2.4)
Total	100.0		100.0		100.0		100.0		100.0	

(P)=Suppressed due to low precision.

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.

[2]Such as pneumonia or shipping fever.

[3]Such as milk fever or grass tetany.

[4]Such as chilling, drowning, or lightning.

[5]Such as by nitrate, noxious feeds, or noxious weeds.

The percentage of cattle deaths due to respiratory problems ranged from 5.5 percent in the Other States category to 50.3 percent in Kansas.

C.1.g. Percentage of cattle deaths due to nonpredator causes, by cause and by State:

	Percent Nonpredator Deaths in Cattle Cause of Loss						
State	Digestive	Respira-tory	Metabolic	Mastitis	Lameness or injury	Other disease	Weather
AL	5.1	7.7	0.3	0.2	5.5	1.8	8.0
AZ	11.0	13.5	3.0	5.1	6.1	17.2	0.7
AR	4.7	15.2	1.1	0.1	3.8	6.4	6.5
CA	12.3	23.2	9.1	14.1	10.6	2.9	0.9
CO	20.8	33.6	0.9	1.6	7.4	4.3	7.9
FL	7.0	12.2	0.8	9.9	3.7	5.3	5.5
GA	7.3	15.8	1.8	0.8	3.1	2.3	4.7
ID	11.6	32.6	2.5	9.7	6.7	14.0	6.2
IL	6.2	24.0	4.4	2.3	9.8	4.7	7.0
IN	13.0	22.6	2.2	4.1	5.4	2.9	4.7
IA	10.1	46.4	2.0	5.7	5.8	5.6	2.8
KS	12.9	50.3	0.8	0.9	3.3	11.1	4.6
KY	5.7	16.1	1.1	0.5	3.1	2.6	18.1
LA	3.3	12.8	0.8	0.2	1.8	4.9	4.6
MI	10.8	27.0	5.8	10.0	13.5	2.1	3.0
MN	7.7	32.4	3.3	9.2	12.9	6.0	3.1
MS	4.0	7.8	1.2	0.3	23.9	1.2	5.4
MO	3.9	15.8	0.8	0.6	6.0	5.9	8.2
MT	7.4	12.2	3.9	0.5	6.8	4.3	11.2
NE	9.6	29.5	0.7	5.1	2.4	2.4	12.0
NV	15.1	22.5	1.2	0.5	1.4	2.0	5.6
New Eng-land[1]	9.5	18.0	6.8	16.3	16.3	3.8	1.7

continued→

C.1.g. (cont'd.) Percentage of cattle deaths due to nonpredator causes, by cause and by State:

	Percent Nonpredator Deaths in Cattle Cause of Loss						
State	Digestive	Respira-tory	Metabolic	Mastitis	Lameness or injury	Other disease	Weather
NM	6.0	13.1	3.4	7.6	6.9	18.4	10.6
NY	10.0	12.5	11.7	12.9	13.4	5.5	1.2
NC	7.7	6.8	0.8	3.9	2.0	5.5	10.5
ND	7.4	15.1	0.7	0.1	4.7	5.7	13.1
OH	17.4	24.0	5.6	4.0	9.9	2.8	6.5
OK	4.5	26.6	0.6	0.2	1.9	4.9	11.5
OR	8.3	10.6	13.9	7.9	12.1	7.7	2.7
PA	7.8	9.5	6.1	11.0	19.0	3.9	1.5
SC	3.6	16.0	1.6	2.7	3.4	3.7	6.9
SD	7.7	32.7	1.7	0.8	7.6	6.8	9.2
TN	5.5	10.2	2.3	3.3	5.8	3.3	11.8
TX	2.5	16.4	0.5	1.2	3.5	4.3	21.9
UT	5.3	16.3	2.3	0.5	3.0	1.4	3.8
VA	2.6	19.5	1.9	3.4	5.8	2.7	8.0
WA	8.9	21.6	7.6	7.7	9.8	10.3	2.8
WV	3.1	14.2	0.3	0.2	7.2	6.8	8.0
WI	10.4	21.5	6.0	11.5	13.8	3.9	2.5
WY	3.4	12.5	0.8	0.2	6.7	3.8	13.7
Other States[2]	3.5	5.5	1.4	9.9	8.5	1.1	4.1
United States	7.9	23.9	2.5	4.2	6.4	5.4	9.3

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

C.1.g. (cont'd.) Percentage of cattle deaths due to nonpredator causes, by cause and by State:

	Percent Nonpredator Deaths in Cattle Cause of Loss						
State	Calving	Poisoning	Old age	Theft	Other non-predator	Unknown non-predator	Total
AL	14.3	1.1	24.6	0.2	7.7	23.4	100.0
AZ	10.1	1.6	2.0	21.2	1.3	7.1	100.0
AR	11.2	2.4	30.7	0.2	3.3	14.3	100.0
CA	4.2	0.2	6.3	0.2	1.9	13.9	100.0
CO	3.2	1.6	5.0	0.4	6.6	6.8	100.0
FL	10.3	0.7	22.4	0.0	0.7	21.6	100.0
GA	14.4	2.2	31.3	0.5	1.3	14.4	100.0
ID	4.8	0.9	4.3	0.0	0.8	5.8	100.0
IL	9.3	1.4	13.3	1.2	4.4	12.1	100.0
IN	10.2	0.0	9.5	0.0	7.0	18.3	100.0
IA	6.6	1.3	6.3	0.1	3.4	3.8	100.0
KS	3.0	0.8	4.3	0.1	3.1	4.6	100.0
KY	11.6	4.3	11.3	0.0	8.2	17.3	100.0
LA	21.4	2.8	30.0	0.3	3.3	13.9	100.0
MI	14.8	0.1	1.3	0.0	2.4	9.2	100.0
MN	6.7	0.4	4.5	0.0	5.8	8.0	100.0
MS	15.3	4.7	17.4	0.0	5.2	13.6	100.0
MO	12.4	0.5	21.8	0.2	6.3	17.4	100.0
MT	13.6	3.0	13.5	0.1	1.6	21.9	100.0
NE	2.5	0.3	6.9	0.8	2.9	25.0	100.0
NV	2.4	7.4	16.5	0.0	2.3	23.2	100.0
New England[1]	10.0	0.8	6.4	0.0	3.5	6.8	100.0

continued→

C.1.g. (cont'd.) Percentage of cattle deaths due to nonpredator causes, by cause and by State:

	Percent Nonpredator Deaths in Cattle Cause of Loss						
State	Calving	Poisoning	Old age	Theft	Other non-predator	Unknown non-predator	Total
NM	9.0	5.9	3.6	2.5	5.6	7.5	100.0
NY	7.2	0.5	5.4	0.0	6.5	13.4	100.0
NC	19.6	2.0	18.7	0.0	14.0	8.5	100.0
ND	3.6	0.4	20.4	0.6	3.1	25.2	100.0
OH	12.8	0.3	7.3	0.0	0.8	8.7	100.0
OK	9.6	1.4	19.3	0.8	3.0	15.8	100.0
OR	10.2	1.3	9.5	1.2	2.2	12.5	100.0
PA	10.5	0.6	7.4	0.0	6.0	16.5	100.0
SC	14.4	1.7	23.8	0.0	11.7	10.5	100.0
SD	6.3	1.3	8.2	2.1	3.5	12.2	100.0
TN	11.4	0.1	23.2	0.0	8.9	14.3	100.0
TX	12.2	1.7	15.3	0.1	1.1	19.4	100.0
UT	5.3	17.0	6.4	3.2	11.2	24.2	100.0
VA	20.1	0.9	20.2	0.2	4.9	9.6	100.0
WA	11.7	0.1	11.5	0.0	1.0	7.2	100.0
WV	18.8	0.3	28.0	0.1	2.2	10.9	100.0
WI	13.3	0.2	7.7	0.0	2.6	6.5	100.0
WY	5.1	8.5	13.2	0.7	3.9	27.7	100.0
Other States[2]	10.5	0.0	28.6	5.3	6.6	15.0	100.0
United States	9.0	1.4	11.8	0.7	3.4	14.0	100.0

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

2. Death loss in calves due to nonpredator causes

Beef operations reported a higher percentage of calf losses due to calving-related problems (22.7 percent) and weather-related causes (18.3 percent) compared with the other operation types. Conversely, beef operations had a lower percentage of deaths due to respiratory problems than the other operation types. Dairy operations reported higher percentage of calves lost to digestive problems (28.1 percent) compared with beef operations (9.6 percent).

C.2.a. Percentage of calf death loss due to nonpredator causes, by cause and by type of operation:

	Percent Loss							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Nonpredator cause	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Digestive problems[1]	9.6	(0.4)	28.1	(1.6)	19.9	(3.5)	20.4	(3.5)
Respiratory problems[2]	23.0	(0.8)	32.7	(1.4)	36.1	(5.6)	36.3	(4.6)
Metabolic problems[3]	0.4	(0.1)	3.4	(1.7)	0.6	(0.3)	1.4	(0.8)
Mastitis	0.3	(0.1)	1.1	(0.3)	0.3	(0.3)	0.0	(—)
Lameness or injury	1.7	(0.2)	2.6	(0.3)	2.2	(0.8)	1.1	(0.3)
Other diseases	4.1	(0.5)	4.3	(0.7)	2.1	(1.0)	5.6	(1.6)
Weather related[4]	18.3	(0.7)	4.1	(0.6)	5.6	(1.5)	9.7	(3.6)
Calving-related problems	22.7	(0.7)	10.9	(0.9)	7.7	(1.6)	4.1	(1.0)
Poisoning[5]	0.6	(0.1)	0.1	(0.0)	0.6	(0.4)	0.5	(0.3)
Theft (stolen)	1.0	(0.3)	0.0	(0.0)	0.0	(0.0)	0.7	(0.5)
Other nonpredator causes	3.4	(0.3)	2.4	(0.4)	0.8	(0.3)	1.0	(0.3)
Unknown nonpredator causes	14.7	(0.6)	10.2	(1.1)	24.0	(7.4)	19.3	(6.2)
Total	100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

On beef operations, respiratory problems accounted for the highest percentage of calf death loss due to nonpredator causes (23.0 percent), followed by calving-related problems (22.7 percent), and weather-related causes (18.3 percent). Calving-related problems accounted for a higher percentage of calf death loss on the smallest operations (27.7 percent of operations with 1 to 49 cows) than on larger operations (21.4, 20.2, and 17.3 percent for operations with 50 to 99, 100 to 499, and 500 or more cows, respectively).

C.2.b. For beef operations, percentage of calf death loss due to nonpredator causes, by cause and by size of operation:

Percent Loss

Size of Operation (number of cows)

	1–49		50–99		100–499		500 or more		All operations	
Nonpredator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Digestive problems[1]	7.3	(0.7)	7.7	(1.0)	11.4	(0.7)	14.3	(1.2)	9.6	(0.4)
Respiratory problems[2]	16.1	(1.8)	23.4	(1.7)	27.2	(1.1)	30.6	(1.7)	23.0	(0.8)
Metabolic problems[3]	0.4	(0.1)	0.2	(0.1)	0.4	(0.1)	0.5	(0.2)	0.4	(0.1)
Mastitis	0.6	(0.2)	0.3	(0.1)	0.1	(0.1)	0.1	(0.0)	0.3	(0.1)
Lameness or injury	2.3	(0.4)	2.0	(0.5)	1.3	(0.2)	1.2	(0.3)	1.7	(0.2)
Other diseases	3.8	(0.8)	5.7	(1.4)	4.0	(0.8)	2.9	(0.7)	4.1	(0.5)
Weather related[4]	17.4	(1.5)	19.2	(1.7)	18.7	(1.1)	18.8	(1.6)	18.3	(0.7)
Calving-related problems	27.7	(1.6)	21.4	(1.5)	20.2	(1.0)	17.3	(1.7)	22.7	(0.7)
Poisoning[5]	0.6	(0.2)	0.5	(0.2)	0.6	(0.2)	0.5	(0.1)	0.6	(0.1)
Theft (stolen)	1.9	(0.7)	1.0	(0.6)	0.4	(0.2)	0.3	(0.1)	1.0	(0.3)
Other nonpredator causes	5.8	(0.8)	2.3	(0.4)	2.4	(0.4)	1.0	(0.3)	3.4	(0.3)
Unknown nonpredator causes	16.2	(1.2)	16.2	(1.4)	13.2	(1.0)	12.5	(1.6)	14.7	(0.6)
Total	100.0		100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

On dairy operations, respiratory and digestive problems accounted for more than 50 percent of calf death loss due to nonpredator causes (32.7 and 28.1 percent, respectively).

C.2.c. For dairy operations, percentage of calf death loss due to nonpredator causes, by cause and by size of operation:

Percent Loss

Size of Operation (number of cows)

	1–49		50–99		100–499		200–499		500 or more		All operations	
Nonpredator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Digestive problems[1]	31.2	(4.2)	29.4	(2.6)	34.5	(3.4)	32.5	(2.3)	24.7	(2.9)	28.1	(1.6)
Respiratory problems[2]	29.4	(4.8)	33.4	(3.1)	34.7	(2.9)	35.6	(2.0)	31.9	(2.1)	32.7	(1.4)
Metabolic problems[3]	0.3	(0.2)	0.9	(0.5)	0.7	(0.3)	1.5	(0.5)	5.5	(3.0)	3.4	(1.7)
Mastitis	0.0	(0.0)	0.8	(0.4)	0.2	(0.1)	3.3	(2.5)	1.1	(0.3)	1.1	(0.3)
Lameness or injury	1.2	(0.5)	1.0	(0.3)	2.8	(0.7)	2.0	(0.3)	3.2	(0.5)	2.6	(0.3)
Other diseases	1.2	(0.4)	2.9	(0.9)	2.4	(0.6)	3.6	(1.1)	5.8	(1.4)	4.3	(0.7)
Weather related[4]	5.9	(2.6)	3.6	(2.0)	3.4	(0.9)	3.3	(1.2)	4.3	(0.8)	4.1	(0.6)
Calving-related problems	19.5	(3.9)	13.4	(2.0)	12.8	(2.7)	7.9	(1.1)	9.1	(1.2)	10.9	(0.9)
Poisoning[5]	0.3	(0.2)	0.3	(0.2)	0.1	(0.1)	0.1	(0.0)	0.1	(0.0)	0.1	(0.0)
Theft (stolen)	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(0.0)	0.0	(0.0)
Other nonpredator causes	1.9	(0.8)	4.0	(1.9)	1.3	(0.7)	1.6	(1.0)	2.7	(0.6)	2.4	(0.4)
Unknown nonpredator causes	9.1	(2.3)	10.3	(2.4)	7.1	(1.4)	8.7	(1.5)	11.6	(2.0)	10.2	(1.1)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

On mixed operations, the top three causes of calf death loss due to nonpredator causes were respiratory problems, unknown nonpredator causes, and digestive problems, regardless of operation size.

C.2.d. For mixed operations, number and percentage of calf death loss due to nonpredator causes, by cause and by size of operation:

Number and Percent Loss

Size of Operation (number of cows)

	1–99		100–499		500 or more		All operations	
Nonpredator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Digestive problems[1]	24.6	(5.8)	24.8	(6.1)	12.4	(3.8)	19.9	(3.5)
Respiratory problems[2]	34.6	(8.4)	41.0	(7.0)	32.3	(11.0)	36.1	(5.6)
Metabolic problems[3]	0.1	(0.1)	1.3	(0.9)	0.3	(0.1)	0.6	(0.3)
Mastitis	0.0	(0.0)	0.7	(0.7)	0.1	(0.1)	0.3	(0.3)
Lameness or injury	1.5	(1.0)	4.1	(1.9)	0.8	(0.3)	2.2	(0.8)
Other diseases	4.2	(3.7)	0.5	(0.2)	2.4	(1.3)	2.1	(1.0)
Weather related[4]	7.7	(4.2)	7.6	(2.7)	2.4	(0.9)	5.6	(1.5)
Calving-related problems	10.2	(4.9)	6.7	(1.9)	7.3	(2.3)	7.7	(1.6)
Poisoning[5]	1.4	(1.3)	0.0	(0.0)	0.7	(0.5)	0.6	(0.4)
Theft (stolen)	0.0	(—)	0.0	(—)	0.0	(0.0)	0.0	(0.0)
Other nonpredator causes	1.0	(0.6)	0.5	(0.3)	0.9	(0.5)	0.8	(0.3)
Unknown nonpredator causes	14.8	(5.8)	12.7	(3.0)	40.5	(15.1)	24.0	(7.5)
Total	100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

C.2.e. For other operations, percentage of calf death loss due to nonpredator causes, by cause and by size of operation

Number and Percent Loss

Size of Operation (number of cattle and calves)

	1–99		100–499		500–999		1,000 or more		All operations	
Nonpredator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Digestive problems[1]	22.2	(4.8)	17.7	(4.6)	17.3	(5.9)	21.2	(6.1)	20.4	(3.5)
Respiratory problems[2]	35.1	(4.9)	49.4	(6.6)	65.0	(6.3)	27.9	(6.8)	36.3	(4.6)
Metabolic problems[3]	0.0	(—)	2.5	(2.3)	3.5	(2.4)	1.2	(1.2)	1.4	(0.8)
Mastitis	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(—)
Lameness or injury	0.7	(0.6)	0.4	(0.3)	1.1	(0.4)	1.5	(0.6)	1.1	(0.3)
Other diseases	0.7	(0.4)	7.0	(2.6)	1.7	(1.4)	7.3	(2.7)	5.6	(1.6)
Weather related[4]	6.1	(2.2)	12.8	(7.0)	5.9	(3.0)	10.2	(6.1)	9.7	(3.6)
Calving-related problems	15.0	(4.0)	4.6	(2.0)	0.6	(0.4)	0.2	(0.1)	4.1	(1.0)
Poisoning[5]	1.1	(1.1)	1.1	(1.0)	0.0	(—)	0.2	(0.1)	0.5	(0.3)
Theft (stolen)	3.4	(2.3)	0.0	(—)	0.0	(—)	0.0	(—)	0.7	(0.5)
Other nonpredator causes	2.5	(1.4)	0.6	(0.4)	2.0	(1.4)	0.4	(0.3)	1.0	(0.3)
Unknown nonpredator causes	13.3	(4.0)	4.0	(2.1)	2.9	(1.3)	30.0	(10.9)	19.3	(6.2)
Total	100.0		100.0		100.0		100.0		100.0	

[1]Such as bloat, scours, parasites, enterotoxemia, or acidosis.
[2]Such as pneumonia or shipping fever.
[3]Such as milk fever or grass tetany.
[4]Such as chilling, drowning, or lightning.
[5]Such as by nitrate, noxious feeds, or noxious weeds.

Death loss in calves due to respiratory problems ranged from 10.7 percent of nonpredator losses in South Carolina to 45.9 percent of losses in Nevada. Calving-related issues was the second leading cause of calf death loss due to nonpredator causes, ranging from 3.7 percent of losses in New Mexico to 39.9 percent of losses in South Carolina.

C.2.f. Percentage of calf death loss due to nonpredator causes, by cause and by State:

	Percent Nonpredator Death Loss in Calves Cause of Loss					
State	Digestive	Respira-tory	Metabolic	Mastitis	Lameness or injury	Other disease
AL	4.4	14.1	1.8	2.5	2.2	3.6
AZ	11.8	18.6	4.5	0.5	4.8	8.0
AR	5.8	31.9	1.0	0.0	1.7	2.2
CA	21.9	30.7	7.9	0.3	2.3	2.6
CO	15.9	32.6	0.6	0.5	2.1	3.6
FL	11.3	24.1	1.1	1.3	1.8	1.3
GA	9.9	15.0	1.5	0.2	1.6	3.3
ID	15.6	36.8	1.6	0.8	1.1	10.1
IL	12.4	25.1	4.4	0.0	3.3	2.7
IN	26.0	29.1	0.9	0.1	1.5	3.9
IA	18.4	29.5	0.4	0.3	1.4	2.7
KS	7.1	30.4	0.0	0.0	1.1	5.6
KY	7.7	14.3	0.0	0.6	1.3	1.9
LA	2.6	27.0	0.0	0.0	2.9	1.3
MI	25.5	40.8	2.1	0.8	3.2	1.5
MN	25.8	31.2	1.2	0.0	2.1	3.8
MS	5.6	14.2	0.6	0.2	0.8	12.1
MO	15.7	25.7	0.4	0.1	2.1	2.7
MT	14.4	18.5	0.2	0.1	1.2	2.6
NE	14.3	27.3	0.2	0.0	0.9	2.0
NV	17.4	45.9	0.3	0.0	0.8	1.6
New England[1]	22.2	36.4	3.0	2.6	3.6	4.2

continued→

C.2.f. (cont'd.) Percentage of calf death loss due to nonpredator causes, by cause and by State:

	Percent Nonpredator Death Loss in Calves Cause of Loss					
State	Digestive	Respira-tory	Metabolic	Mastitis	Lameness or injury	Other disease
NM	33.7	12.3	0.8	0.0	1.3	18.8
NY	22.2	31.1	0.9	5.1	2.2	2.0
NC	12.9	15.1	0.0	2.5	0.4	11.0
ND	8.9	29.4	1.1	0.0	1.4	1.3
OH	25.4	31.9	0.8	1.5	1.6	1.8
OK	4.6	30.0	0.9	0.2	0.7	4.2
OR	19.0	28.5	2.7	2.6	3.4	3.1
PA	26.3	27.5	1.8	0.8	3.4	2.9
SC	7.8	10.7	0.4	0.0	0.4	2.0
SD	15.0	30.3	0.0	0.0	1.3	1.8
TN	13.3	23.8	0.5	0.6	1.2	4.2
TX	2.7	21.0	0.1	0.7	2.0	9.3
UT	12.0	28.1	1.1	0.1	4.7	4.6
VA	9.0	18.3	0.4	0.0	3.9	2.7
WA	33.4	26.9	0.3	0.4	0.5	3.2
WV	2.0	11.4	0.0	0.0	2.7	0.1
WI	30.3	32.6	0.2	0.0	2.8	4.3
WY	12.1	22.8	0.3	0.1	1.5	2.7
Other States[2]	12.7	21.1	0.2	0.4	4.1	5.8
United States	15.4	26.9	1.2	0.5	1.9	4.2

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

continued→

C.2.f. (cont'd.) Percentage of calf death loss due to nonpredator causes, by cause and by State:

	Percent Nonpredator Death Loss in Calves						
	Cause of Loss						
State	Weather	Calving	Poison-ing	Theft	Other non-predator	Unknown non-predator	Total
AL	3.6	25.8	0.5	2.7	5.3	33.4	100.0
AZ	3.9	15.2	0.8	14.0	2.6	15.3	100.0
AR	18.7	17.6	2.3	0.0	2.6	16.2	100.0
CA	1.6	7.3	0.1	0.0	2.2	23.1	100.0
CO	14.2	17.3	1.1	0.8	0.4	10.8	100.0
FL	1.4	20.2	0.1	0.0	0.7	36.8	100.0
GA	4.7	28.6	0.2	0.0	2.2	32.8	100.0
ID	8.1	12.0	0.7	0.0	0.3	12.8	100.0
IL	13.5	25.3	1.3	0.6	1.5	9.7	100.0
IN	13.1	11.2	2.3	0.0	2.4	9.5	100.0
IA	14.4	20.6	0.7	0.8	2.6	8.2	100.0
KS	11.8	19.9	0.3	0.4	3.3	20.2	100.0
KY	40.7	12.8	0.4	0.9	7.9	11.4	100.0
LA	9.0	33.2	0.2	0.0	7.3	16.4	100.0
MI	4.2	11.9	1.6	0.0	2.1	6.3	100.0
MN	5.7	14.9	0.0	0.0	4.2	11.0	100.0
MS	5.4	34.1	0.1	2.0	5.2	19.9	100.0
MO	16.8	19.6	0.1	0.0	5.9	10.9	100.0
MT	21.2	22.3	1.5	0.1	2.5	15.4	100.0
NE	17.6	23.3	0.1	0.9	2.2	11.2	100.0
NV	6.9	5.3	0.3	0.0	6.6	14.7	100.0
New England[1]	7.8	9.9	0.0	0.0	3.6	6.8	100.0

continued→

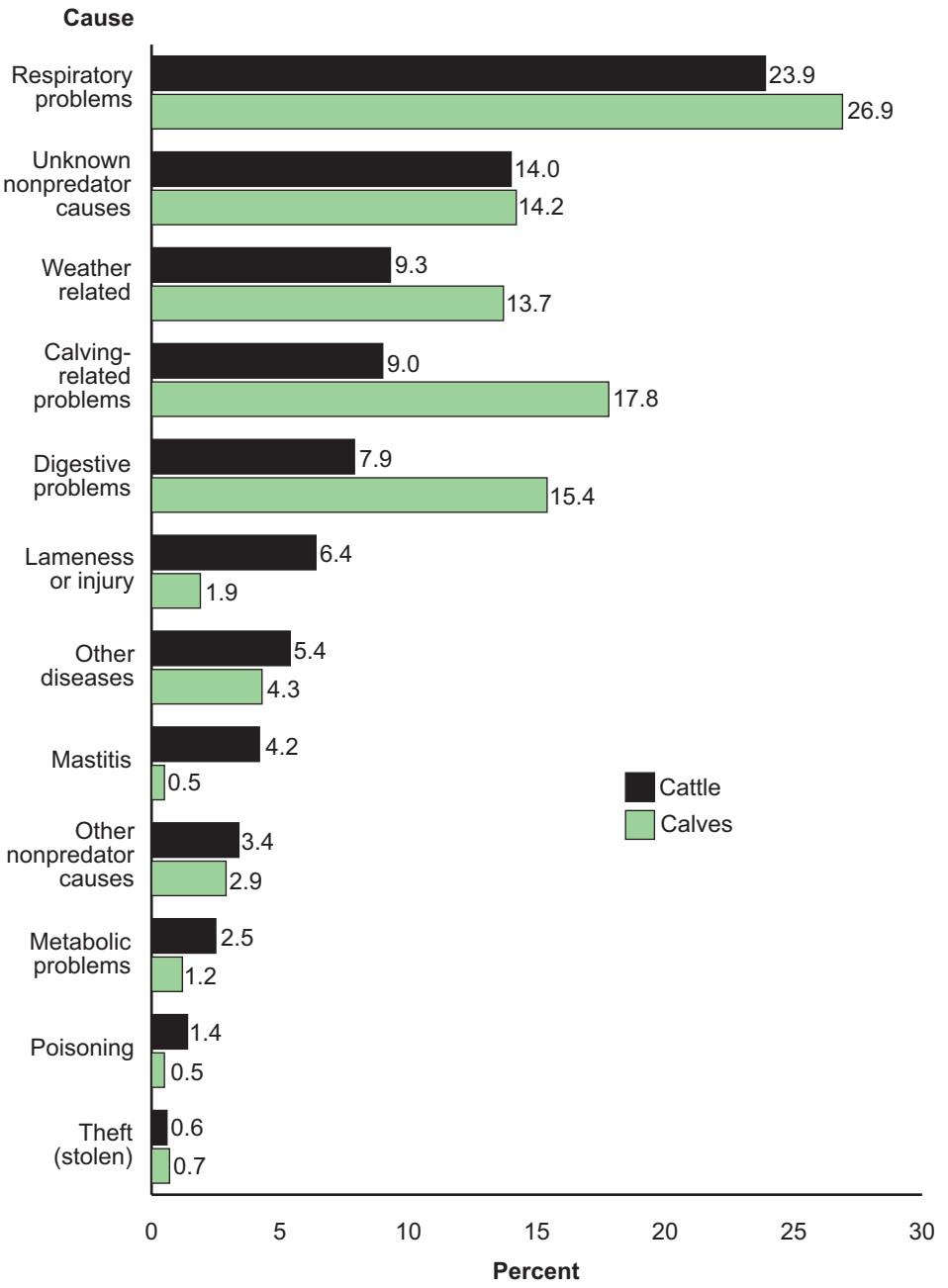
C.2.f. (cont'd.) Percentage of calf death loss due to nonpredator causes, by cause and by State:

	Percent Nonpredator Death Loss in Calves						
	Cause of Loss						
State	Weather	Calving	Poison-ing	Theft	Other non-predator	Unknown non-predator	Total
NM	14.4	3.7	0.6	5.8	3.0	5.6	100.0
NY	5.8	9.2	0.6	0.0	3.7	17.1	100.0
NC	11.0	19.8	0.0	0.0	1.2	26.1	100.0
ND	14.2	28.5	0.0	0.3	1.3	13.6	100.0
OH	17.3	9.3	0.0	0.0	3.7	6.5	100.0
OK	20.3	18.7	0.3	1.0	2.7	16.4	100.0
OR	8.3	21.6	0.2	0.8	0.2	9.7	100.0
PA	5.0	12.3	0.6	0.0	2.4	16.9	100.0
SC	11.2	39.9	0.0	8.2	6.0	13.4	100.0
SD	19.9	22.9	0.1	0.1	0.5	8.1	100.0
TN	13.4	24.5	0.0	2.0	4.2	12.3	100.0
TX	17.9	20.4	0.1	1.3	2.3	22.3	100.0
UT	6.7	8.3	6.1	1.3	3.9	23.3	100.0
VA	35.2	16.2	0.1	0.0	5.5	8.8	100.0
WA	3.3	18.0	0.0	0.0	6.0	7.9	100.0
WV	50.0	16.3	0.0	0.0	4.8	12.6	100.0
WI	5.0	19.1	0.0	0.0	1.1	4.6	100.0
WY	23.7	21.9	1.9	0.3	1.9	11.0	100.0
Other States[2]	17.1	16.5	0.0	0.2	9.6	12.2	100.0
United States	13.7	17.8	0.5	0.7	2.9	14.2	100.0

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

Percentage of cattle and calves death loss due to nonpredator causes, by cause



D. Cattle and Calves Death Loss Due to Predators, 2015

1. Cattle death loss due to predators

Coyotes accounted for 40.5 percent of cattle death losses due to predators, or approximately 17,000 deaths. Unknown predators accounted for the second highest percentage of loss due to predators, accounting for 15.8 percent of all predator-related cattle deaths.

Overall, dogs, wolves, and coyotes accounted for more than half of cattle death losses due to predators, which is a higher percentage of loss than that due to bears (grizzly or black), felines (bobcats, lynx, mountain lions, cougars, or pumas), or predatory birds (ravens, eagles, or vultures) combined.

Of death loss due to predatory birds, vultures accounted for the highest percentage of loss due to birds (5.2 percent of all cattle death loss due to predators).

D.1.a. For all operations, number and percentage of cattle death loss due to predators, by predator:

Predator	Number	Percent
Grizzly bears	1,260	3.0
Black bears	420	1.0
Bobcats or lynx	500	1.2
Coyotes	16,880	40.5
Dogs	4,700	11.3
Foxes	610	1.5
Wolves	2,040	4.9
Ravens	(D)	(D)
Eagles	(D)	(D)
Vultures	2,170	5.2
Mountain lions, cougars, or pumas	1,930	4.6
Other predators	4,610	11.1
Unknown predators	6,570	15.8
Total	41,680	100.0

(D)=Number suppressed to avoid potential disclosure of respondent.

The percentage of cattle death loss attributed to predators accounted for only 2.4 percent (or approximately 41,700 head) of all cattle death loss. Thus, tables by size within operation type are not reported because of low precision (large standard errors). Compared with the other operations types, mixed operations had a lower percentage of cattle death loss due to coyotes (3.2 percent, which is not significantly different from 0 percent) and a higher percentage of losses due to foxes (46.8 percent) and wolves (46.0 percent).

D.1.b. Percentage of cattle death loss due to predators, by predator and by type of operation:

	Percent Loss							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Predator	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Grizzly bears	3.5	(1.7)	0.0	(—)	0.0	(—)	0.0	(—)
Black bears	1.1	(0.4)	3.8	(3.4)	0.0	(—)	0.5	(0.5)
Bobcats or lynx	1.4	(0.9)	0.0	(—)	0.6	(0.6)	0.0	(—)
Coyotes	42.2	(4.5)	25.9	(6.5)	3.2	(3.2)	43.6	(18.0)
Dogs	10.8	(2.7)	16.7	(5.5)	0.7	(0.7)	18.2	(11.2)
Foxes	0.0	(—)	1.2	(0.9)	46.8	(3.2)	0.0	(—)
Wolves	3.9	(0.9)	0.7	(0.5)	46.0	(3.8)	0.9	(0.7)
Ravens	(D)		(D)		(D)		(D)	
Eagles	(D)		(D)		(D)		(D)	
Vultures	6.0	(1.3)	0.4	(0.3)	1.6	(2.1)	0.0	(—)
Mountain lions, cougars, or pumas	5.3	(1.2)	3.4	(2.0)	0.0	(—)	0.0	(—)
Other predators	9.1	(2.4)	24.7	(9.9)	0.0	(0.0)	29.9	(22.1)
Unknown predators	16.7	(3.8)	23.1	(8.5)	0.9	(0.9)	7.0	(6.1)
Total	100.0		100.0		100.0		100.0	

(D)=Number suppressed to avoid potential disclosure of respondent.

In the table below, each row sums to 100 percent, so the percentages indicate the percentage of predator-related cattle death loss by each predator cause (columns) within that State (rows). For example, 48.4 percent of cattle deaths in the Alabama row, coyotes column, indicates that 48.4 percent of the predator-related cattle deaths in Alabama were caused by coyotes.

While coyotes appear to account for a moderate to high percentage of cattle deaths due to predators, other predator causes are regional (e.g., bears and wolves).

D.1.c. Percentage of cattle death loss due to predators, by State and by predator:

	Percent Loss Predator					
State	Grizzly bears	Black bears	Bobcats or lynx	Coyotes	Dogs	Foxes
AL	0.0	0.0	0.0	48.4	37.8	0.0
AZ	0.0	0.0	0.0	31.7	35.3	0.0
AR	9.4[1]	0.0	0.0	8.2	54.4	0.0
CA	0.0	9.4	0.0	34.9	3.8	1.8
CO	4.7[1]	10.3	0.0	68.6	0.3	0.0
FL	0.0	0.0	0.2	32.7	9.6	0.0
GA	31.2[1]	0.0	0.0	13.4	4.1	0.0
ID	29.8	0.3	0.0	11.8	0.0	0.0
IL	0.0	0.0	0.0	8.8	6.3	0.0
IN	0.0	0.0	0.0	66.7	0.0	0.0
IA	0.0	0.0	0.0	31.5	1.0	0.0
KS	0.0	0.0	0.0	68.2	31.8	0.0
KY	0.0	0.0	0.0	32.0	32.4	0.0
LA	0.0	0.0	0.0	62.1	0.0	0.0
MI	0.0	24.6	0.0	75.4	0.0	0.0
MN	0.0	0.0	0.0	43.2	0.0	0.0
MS	0.0	0.0	0.0	10.1	15.5	0.0
MO	0.0	0.0	0.0	25.8	2.1	0.0
MT	24.0	1.8	0.0	22.1	0.0	0.0
NE	0.0	0.0	0.0	9.0	0.0	0.0
NV	0.0	0.0	0.0	40.0	0.0	0.0
New England[2]	0.0	0.0	0.0	60.9	0.0	0.0

continued→

D.1.c. (cont'd.) Percentage of cattle death loss due to predators, by State and by predator:

	Percent Loss Predator					
State	Grizzly bears	Black bears	Bobcats or lynx	Coyotes	Dogs	Foxes
NM	0.0	1.8	0.0	60.5	0.7	0.0
NY	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	83.9	6.9	0.0
ND	0.0	0.0	0.0	73.2	17.6	0.0
OH	0.0	0.0	0.0	58.7	0.0	0.0
OK	0.0	0.0	0.0	32.1	19.2	0.0
OR	2.1	2.1	0.0	44.2	0.0	0.0
PA	0.0	0.0	0.0	65.7	0.0	0.0
SC	0.0	0.0	0.0	78.7	0.0	0.0
SD	0.0	0.0	0.0	42.1	5.8	0.0
TN	0.0	0.0	0.0	31.4	53.5	0.0
TX	0.0	0.0	1.4	53.0	5.5	4.9
UT	0.0	25.5	7.7	0.0	0.0	0.0
VA	0.0	3.6	0.0	20.0	1.5	0.0
WA	0.0	0.0	0.0	52.8	8.5	0.0
WV	0.0	0.0	0.0	5.6	0.0	0.0
WI	0.0	0.0	51.2	23.4	0.0	0.0
WY	12.9	2.7	0.0	4.6	0.0	0.0
Other States[3]	0.0	0.0	0.0	10.1	72.3	0.0
United States	3.0	1.0	1.2	40.5	11.3	1.5

[1]Grizzly bears are not known to occur in these States; therefore, these deaths were likely due to black bears.
[2]New England includes CT, ME, MA, NH, RI, and VT.
[3]Other States include AK, DE, HI, MD, and NJ.

continued→

D.1.c. (cont'd.) Percentage of cattle death loss due to predators, by State and by predator:

	Percent Loss					
	Predator					
State	Wolves	Predatory birds[1]	Mountain lions[2]	Other predators	Unknown predators	Total
AL	5.7	4.1	0.0	0.3	3.8	100.0
AZ	9.9	0.0	15.3	0.0	7.7	100.0
AR	0.0	4.6	0.0	0.0	23.4	100.0
CA	0.0	0.0	34.3	14.1	1.8	100.0
CO	2.1	0.0	0.0	14.0	0.0	100.0
FL	0.0	11.8	0.4	39.9	5.3	100.0
GA	0.0	8.1	0.0	24.4	18.7	100.0
ID	33.1	0.0	1.2	0.4	23.4	100.0
IL	0.0	0.0	0.0	57.4	27.6	100.0
IN	0.0	0.0	0.0	33.3	0.0	100.0
IA	0.0	0.0	0.0	0.0	67.5	100.0
KS	0.0	0.0	0.0	0.0	0.0	100.0
KY	0.0	32.0	3.3	0.3	0.0	100.0
LA	0.0	21.7	0.0	0.0	16.2	100.0
MI	0.0	0.0	0.0	0.0	0.0	100.0
MN	32.2	0.0	0.0	0.0	24.6	100.0
MS	0.0	74.4	0.0	0.0	0.0	100.0
MO	0.0	0.0	30.4	25.8	16.0	100.0
MT	10.2	0.0	24.3	0.0	17.6	100.0
NE	0.0	0.0	0.6	45.9	44.4	100.0
NV	0.0	2.7	57.4	0.0	0.0	100.0
New England[3]	0.0	0.0	0.0	27.8	11.3	100.0

continued→

D.1.c. (cont'd.) Percentage of cattle death loss due to predators, by State and by predator:

	Percent Loss Predator					
State	Wolves	Predatory birds[1]	Mountain lions[2]	Other predators	Unknown predators	Total
NM	7.1	0.0	10.7	0.0	19.2	100.0
NY	0.0	0.0	0.0	86.6	13.4	100.0
NC	0.0	9.1	0.0	0.0	0.0	100.0
ND	0.0	0.0	0.0	1.4	7.7	100.0
OH	0.0	18.3	0.0	0.0	22.9	100.0
OK	0.0	0.6	4.3	9.1	34.7	100.0
OR	17.8	0.0	9.0	0.0	24.7	100.0
PA	0.0	0.0	0.0	0.0	34.3	100.0
SC	0.0	19.1	0.0	0.0	2.2	100.0
SD	0.0	0.0	52.2	0.0	0.0	100.0
TN	0.0	0.5	0.0	14.6	0.0	100.0
TX	5.0	4.8	0.0	6.9	18.6	100.0
UT	0.0	0.0	52.7	0.0	14.1	100.0
VA	0.0	7.7	0.0	67.1	0.0	100.0
WA	24.2	0.0	14.6	0.0	0.0	100.0
WV	0.0	1.4	0.0	74.8	18.2	100.0
WI	25.4	0.0	0.0	0.0	0.0	100.0
WY	18.4	0.0	2.0	1.1	58.3	100.0
Other States[4]	0.0	2.1	0.0	4.5	10.9	100.0
United States	4.9	5.2	4.6	11.0	15.8	100.0

[1]Ravens, eagles, and vultures. Vultures are scavengers, not predators, but are combined with predatory birds for convenience.
[2]Mountain lions, cougars, or pumas.
[3]New England includes CT, ME, MA, NH, RI, and VT.
[4]Other States include AK, DE, HI, MD, and NJ.

2. Calf death loss due to predators

Of the 14 predators listed in the study questionnaire, coyotes accounted for just over half of the 239,000 calf losses due to predators (table A.1.d). Unknown predator causes accounted for 12.4 percent of calf deaths, and vultures accounted for 10.3 percent of calf deaths.

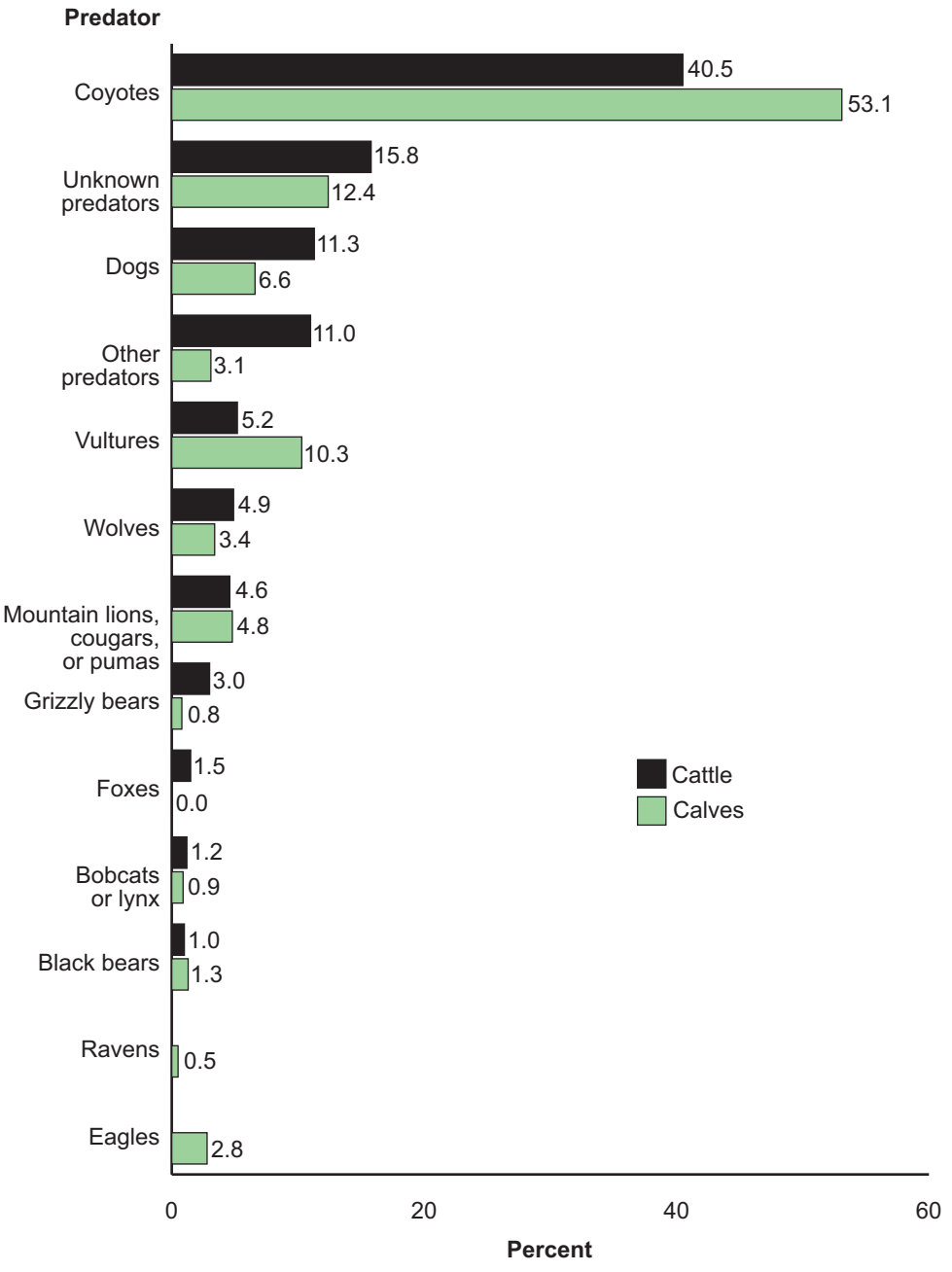
A higher percentage of calf deaths than cattle deaths (table C.1.a) were attributed to predatory birds: 13.6 of calf deaths were due to ravens, eagles, and vultures combined compared with 5.2 percent of cattle deaths due to ravens, eagles and vultures combined.

D.2.a. For all operations, number and percentage of calf death loss due to predators, by predator:

Predator	Number	Percent
Grizzly bears	1,810	0.8
Black bears	3,130	1.3
Bobcats or lynx	2,080	0.9
Coyotes	126,810	53.1
Dogs	15,740	6.6
Foxes	82	0.0
Wolves	8,110	3.4
Ravens	1,157	0.5
Eagles	6,680	2.8
Vultures	24,600	10.3
Mountain lions, cougars, or pumas	11,500	4.8
Other predators	7,510	3.1
Unknown predators	29,680	12.4
Total	238,890	100.0

(D)=Number suppressed to avoid potential disclosure of respondent.

Percentage of cattle and calves death loss, by predator



On dairy operations, calf death loss attributed to coyotes comprised approximately 70 percent of deaths due to predators, which is a higher percentage than found on beef operations on which coyote-related calf deaths accounted for about 50 percent of deaths due to predators. Beef operations reported a higher percentage of calf deaths due to vultures than dairy operations (10.5 and 4.0 percent, respectively).

D.1.b. Percentage of calf death loss due to predators, by predator and by type of operation:

	Percent Loss							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Predator	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Grizzly bears	0.7	(0.2)	4.0	(2.6)	0.0	(—)	0.0	(—)
Black bears	1.3	(0.3)	1.5	(1.1)	0.0	(—)	0.4	(0.3)
Bobcats or lynx	0.9	(0.3)	2.5	(2.3)	0.0	(—)	0.0	(—)
Coyotes	52.8	(2.1)	70.4	(4.9)	53.3	(7.7)	46.9	(13.6)
Dogs	6.6	(1.0)	5.0	(1.5)	13.9	(4.5)	3.4	(1.3)
Foxes	(D)		(D)		(D)		(D)	
Wolves	3.3	(0.6)	4.7	(2.8)	18.5	(10.4)	0.0	(—)
Ravens	(D)		(D)		(D)		(D)	
Eagles	2.9	(2.2)	0.0	(—)	0.0	(—)	0.0	(—)
Vultures	10.5	(1.2)	4.0	(1.5)	6.3	(2.7)	8.5	(5.1)
Mountain lions, cougars, or pumas	4.9	(0.6)	0.3	(0.2)	0.3	(0.3)	7.4	(6.1)
Other predators	3.2	(0.6)	1.0	(0.8)	0.0	(—)	2.6	(2.6)
Unknown predators	12.3	(1.6)	6.4	(2.2)	7.8	(3.7)	30.0	(13.3)
Total	100.0		100.0		100.0		100.0	

(D)=Number suppressed to avoid potential disclosure of respondent.

On beef operations, coyotes, unknown predators, and vultures accounted for the highest percentages of calf deaths due to predators (52.8, 12.3, and 10.5 percent, respectively). Deaths due to vultures accounted for higher proportions of calf deaths on smaller operations (10.3, 13.0, and 11.2 percent for operations with 1 to 49, 50 to 99, and 100 to 499 head) than on the largest operations (3.0 percent). Size breakouts are not shown for dairy, mixed, and "other" operations because of low precision (large standard errors) for those estimates.

D.2.c. For beef operations, percentage of calf death loss due to predators, by predator and by size of operation:

Percent Loss

Size of Operation (number of cows)

	1–49		50–99		100–499		500 or more		All operations	
Predator	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Grizzly bears	0.0	(0.0)	0.4	(0.3)	1.3	(0.4)	2.5	(0.8)	0.7	(0.2)
Black bears	1.0	(0.5)	0.9	(0.5)	2.0	(0.6)	1.2	(0.4)	1.3	(0.3)
Bobcats or lynx	1.4	(0.7)	1.1	(0.5)	0.3	(0.2)	0.3	(0.2)	0.9	(0.3)
Coyotes	47.6	(4.1)	60.4	(3.7)	53.4	(2.8)	58.6	(5.1)	52.8	(2.1)
Dogs	7.7	(1.9)	6.4	(2.1)	6.3	(1.4)	3.2	(0.8)	6.6	(1.0)
Foxes	(D)		(D)		(D)		(D)		(D)	
Wolves	1.7	(0.6)	1.6	(0.6)	5.7	(1.4)	4.8	(0.9)	3.3	(0.6)
Ravens	(D)		(D)		(D)		(D)		(D)	
Eagles	6.1	(5.4)	0.7	(0.6)	1.0	(0.3)	0.5	(0.3)	2.9	(2.2)
Vultures	10.3	(2.0)	13.0	(3.2)	11.2	(2.0)	3.0	(0.8)	10.5	(1.2)
Mountain lions, cougars, or pumas	2.9	(0.9)	7.6	(2.3)	4.7	(0.8)	9.6	(2.1)	4.9	(0.6)
Other predators	4.2	(1.3)	3.9	(1.4)	2.4	(0.7)	0.6	(0.2)	3.2	(0.6)
Unknown predators	16.8	(3.1)	3.9	(1.0)	10.9	(2.2)	14.7	(6.2)	12.3	(1.6)
Total	100.0		100.0		100.0		100.0		100.0	

(D)=Number suppressed to avoid potential disclosure of respondent.

As was observed with predator-related deaths in cattle, coyotes accounted for the majority of death losses in calves due to predators. The percentage of predator-related calf deaths due to coyotes ranged from 20.7 percent in the Other States category to 98.6 percent in South Dakota. As was the case in cattle, some deaths due to predators had regional similarities. For example, deaths due to predatory birds occurred primarily in the Southern and Central States, including Georgia, Indiana, Kentucky, Mississippi, Tennessee, and Texas.

D.2.d. Percentage of calf death loss due to predators, by State and by predator:

	Percent Loss Predator					
State	Grizzly bears	Black bears	Bobcats or lynx	Coyotes	Dogs	Foxes
AL	0.0	0.0	0.0	58.6	16.8	0.0
AZ	0.0	0.5	0.0	68.6	1.2	0.0
AR	1.8[1]	2.5	0.1	41.6	13.5	0.0
CA	0.0	6.2	0.0	59.0	3.1	0.2
CO	5.5[1]	19.8	0.0	63.6	2.7	0.0
FL	0.0	0.1	0.0	68.6	1.0	0.0
GA	0.0	0.0	0.0	66.0	5.3	0.0
ID	1.3	2.3	0.0	35.4	0.7	0.0
IL	0.0	0.0	4.8	70.3	8.7	0.0
IN	0.0	0.0	0.0	56.8	0.0	0.0
IA	0.0	0.0	0.0	54.7	3.8	0.0
KS	0.0	0.0	0.0	84.4	3.0	0.0
KY	0.0	0.0	0.0	41.4	1.7	0.0
LA	0.0	1.0	0.0	57.9	5.5	0.0
MI	0.0	0.0	0.0	53.3	0.0	0.0
MN	0.0	0.0	0.0	29.4	0.0	0.0
MS	0.0	3.0	3.0	53.6	5.9	0.0
MO	0.0	1.4	5.4	49.0	16.1	0.0
MT	11.5	1.5	0.0	41.5	0.0	0.1
NE	0.0	0.0	0.0	51.7	4.1	0.0
NV	4.1[1]	4.1	0.0	55.8	4.1	0.0
New England[2]	0.0	17.3	0.0	49.7	0.0	0.0

continued→

D.2.d. (cont'd.) Percentage of calf death loss due to predators, by State and by predator:

	Percent Loss Predator					
State	Grizzly bears	Black bears	Bobcats or lynx	Coyotes	Dogs	Foxes
NM	0.0	1.2	0.0	49.5	12.9	0.2
NY	0.0	0.0	0.0	97.5	0.0	0.0
NC	0.0	0.0	0.0	75.5	10.2	0.0
ND	0.0	0.0	0.9	81.5	0.7	0.0
OH	0.0	0.0	0.0	81.5	0.0	0.0
OK	0.0	0.0	2.3	46.0	11.6	0.0
OR	0.0	5.5	0.0	32.1	0.4	0.0
PA	0.0	1.2	0.0	98.2	0.0	0.0
SC	0.0	0.0	5.9	67.2	4.0	0.0
SD	0.0	0.0	0.0	98.6	1.0	0.0
TN	0.0	0.0	0.0	48.2	15.3	0.0
TX	0.0	0.0	0.9	41.9	5.7	0.1
UT	0.0	7.3	0.0	75.0	0.2	0.0
VA	0.0	0.3	0.0	74.8	9.2	0.0
WA	0.0	6.3	0.0	63.0	0.0	0.0
WV	0.0	0.0	0.0	86.3	0.8	0.0
WI	3.1	6.1	3.2	37.6	0.0	0.0
WY	17.0	1.2	0.0	33.6	0.6	0.1
Other States[3]	0.0	0.0	0.0	20.7	59.4	0.0
United States	0.8	1.3	0.9	53.1	6.6	0.0

[1]Grizzly bears are not known to occur in these States; therefore, these deaths were most likely due to black bears.
[2]New England includes CT, ME, MA, NH, RI, and VT.
[3]Other States include AK, DE, HI, MD, and NJ.

D.2.d. (cont'd.) Percentage of calf death loss due to predators, by State and by predator:

	Percent Predator Death Loss in Calves					
	Predator					
State	Wolves	Predatory birds	Mountain lions	Other predators	Unknown predators	Total
AL	0.0	11.3	0.6	1.7	11.0	100.0
AZ	2.2	0.5	19.4	0.0	7.7	100.0
AR	0.0	11.8	14.6	2.0	12.1	100.0
CA	0.0	2.4	18.7	2.7	7.8	100.0
CO	0.0	1.7	5.3	0.0	1.4	100.0
FL	0.0	9.6	5.2	10.1	5.4	100.0
GA	0.0	16.6	0.0	2.0	10.2	100.0
ID	34.4	1.6	3.2	1.0	20.2	100.0
IL	0.5	0.0	0.0	1.0	14.7	100.0
IN	0.0	42.0	0.8	0.0	0.5	100.0
IA	0.0	8.7	0.0	0.0	32.8	100.0
KS	0.0	0.0	7.0	0.0	5.5	100.0
KY	0.0	42.1	0.0	11.1	3.8	100.0
LA	0.0	12.4	2.5	15.3	5.4	100.0
MI	39.8	5.7	0.0	0.0	1.2	100.0
MN	43.8	2.1	0.0	0.0	24.8	100.0
MS	0.0	18.9	0.0	8.3	7.4	100.0
MO	0.3	3.5	11.9	0.0	12.4	100.0
MT	12.8	4.7	2.5	0.0	25.4	100.0
NE	0.0	0.1	3.5	3.2	37.4	100.0
NV	5.0	9.9	16.4	0.5	0.0	100.0
New England[1]	1.8	0.0	0.0	9.1	22.2	100.0

continued→

D.2.d. (cont'd.) Percentage of calf death loss due to predators, by State and by predator:

	Percent Predator Death Loss in Calves					
	Predator					
State	Wolves	Predatory birds	Mountain lions	Other predators	Unknown predators	Total
NM	6.2	2.8	16.3	1.4	9.6	100.0
NY	0.0	0.0	0.0	0.0	2.5	100.0
NC	0.0	9.3	0.0	5.0	0.0	100.0
ND	3.0	0.0	4.0	0.0	10.0	100.0
OH	0.0	2.0	0.0	0.0	16.5	100.0
OK	0.0	6.9	7.8	3.4	21.9	100.0
OR	19.0	0.6	12.6	0.2	29.6	100.0
PA	0.0	0.6	0.0	0.0	0.0	100.0
SC	0.0	15.1	5.7	0.0	2.1	100.0
SD	0.0	0.0	0.4	0.0	0.0	100.0
TN	0.0	30.2	0.0	4.6	1.7	100.0
TX	0.2	34.1	0.4	4.5	12.2	100.0
UT	0.0	0.0	9.4	0.0	8.0	100.0
VA	0.0	7.1	0.0	0.2	8.5	100.0
WA	5.0	0.0	18.3	0.0	7.4	100.0
WV	0.0	2.8	0.0	0.0	10.1	100.0
WI	28.9	0.7	7.3	0.3	12.1	100.0
WY	16.8	5.0	6.9	0.1	18.7	100.0
Other States[2]	0.0	10.1	0.0	5.7	4.2	100.0
United States	3.4	13.6	4.8	3.1	12.4	100.0

[1]Ravens, eagles, and vultures. Vultures are scavengers, not predators, but are combined with predatory birds for convenience.

[2]Mountain lions, cougars, or pumas.

[3]New England includes CT, ME, MA, NH, RI, and VT.

[4]Other States include AK, DE, HI, MD, and NJ.

E. Number of Cattle and Calves Injured but not Killed by Predators

This section provides estimates of the number of cattle and calves that were injured but not killed by predators. Incidence of injuries attributed to predators can be a proxy measurement of predator risk or can provide a measurement for the efficacy of predator mitigation measures. This information was captured at the operation level, without specificity to the type of injury incurred.

Approximately 1 per every 3,300 cattle and approximately 1 per 1,000 calves born were injured but not killed by predators. The ratio of injuries to inventory tended to be greater on beef and mixed operations than on dairy operations.

E.1. Number and ratio per 1,000 head of cattle and calves injured but not killed by predators, by type of operation:

	Cattle		Calves	
Operation type	Number	Per 1,000 head	Number	Per 1,000 calves born
Beef	17,357	0.3	27,212	1.0
Dairy	2,635	0.2	1,811	0.3
Mixed	866	0.7	546	0.9
Other	1,479	0.1	4,522	*
Total	22,337	0.3	34,092	1.0

*Not reported because “other” operations (e.g., feedlots or stockers) generally have few or no calves born.

In 2015, the value of cattle and calves injured but not killed by predators exceeded $52 million. This amount is predicated on the assumption that injured cattle or calves had no value after the injury.

E.2. Value of cattle and calves injured but not killed by predators,* by State:

	Value ($1,000)		
State	**Cattle**	**Calves**	**Total**
AL	1,049	414	1,463
AZ	533	195	728
AR	405	786	1,192
CA	550	571	1,121
CO	303	59	361
FL	1,138	412	1,550
GA	519	601	1,119
ID	143	229	372
IL	273	405	678
IN	261	79	340
IA	916	417	1,333
KS	1,874	624	2,497
KY	2,495	1,041	3,536
LA	585	296	882
MI	14	0	14
MN	380	197	576
MS	504	588	1,092
MO	1,085	563	1,648
MT	196	27	223
NE	1,607	811	2,418
NV	59	12	71
New England[1]	453	43	495

continued→

E.2. (cont'd.) Value of cattle and calves injured but not killed by predators,* by State:

	Value ($1,000)		
State	**Cattle**	**Calves**	**Total**
NM	290	274	564
NY	271	44	315
NC	113	21	135
ND	103	46	148
OH	549	145	695
OK	2,840	1,484	4,324
OR	1,864	340	2,204
PA	893	119	1,012
SC	258	265	522
SD	1,043	125	1,168
TN	846	2,537	3,382
TX	7,102	2,598	9,699
UT	96	143	239
VA	1,237	460	1,697
WA	119	155	274
WV	136	6	142
WI	1,435	313	1,748
WY	235	86	321
Other States[2]	71	2	72
United States	34,842	17,531	52,373

*Based on values of cattle and calves on January 1, 2016, as reported by producers on the same survey. Producers were asked for the average value per head, by type of cattle. The value of deaths was calculated as the number of injuries times the average value.

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

F. Nonlethal Methods Used to Control Predators

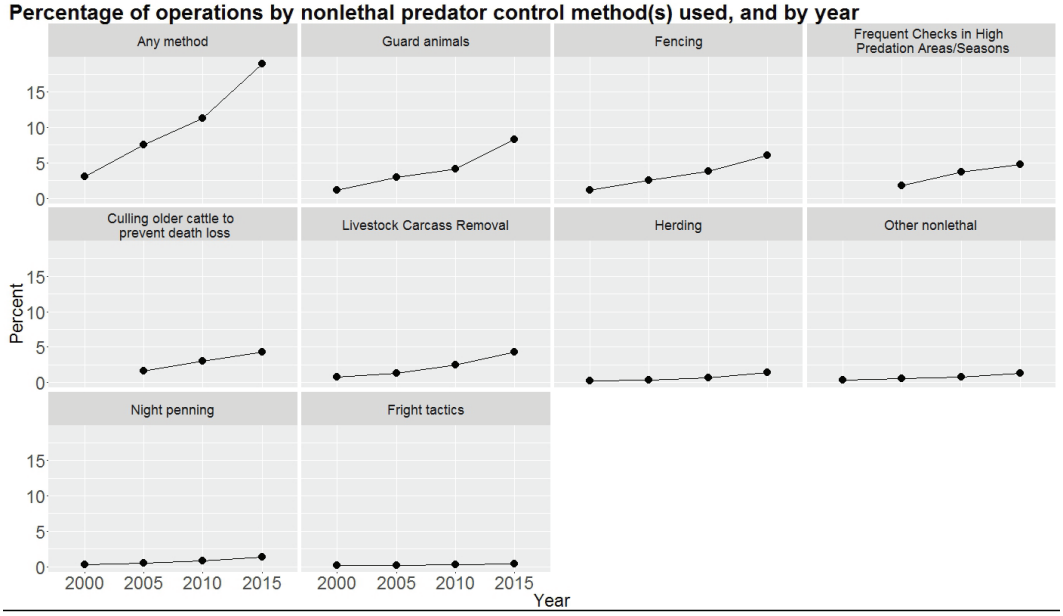
There can be restrictions on the use of lethal methods to control or otherwise mitigate losses due to predators. In this section, reported use of nonlethal methods used to control or mitigate cattle or calf death losses by predators are summarized by year, operation type, and State. The cost of implementing both lethal and nonlethal predator control measures are summarized as well.

From 2000 through 2015, the estimated percentage of operations that employed nonlethal predator control methods increased approximately six-fold, from 3.1 percent in 2000 to 19.0 percent in 2015. Of the methods listed, guard animals composed the majority of the nonlethal methods used (8.3 percent), followed by fencing (6.1 percent).

F.1. Percentage of operations by nonlethal predator control method(s) used, and by year:

	Percent Operations							
	2000		2005		2010		2015	
Method	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Guard animals	1.1	(0.1)	2.9	(0.2)	4.1	(0.2)	8.3	(0.5)
Fencing	1.1	(0.1)	2.5	(0.2)	3.8	(0.2)	6.1	(0.4)
Herding	0.2	(0.0)	0.3	(0.1)	0.6	(0.1)	1.4	(0.3)
Night penning	0.3	(0.0)	0.5	(0.1)	0.8	(0.1)	1.3	(0.2)
Fright tactics	0.2	(0.2)	0.2	(0.0)	0.3	(0.1)	0.4	(0.1)
Livestock carcass removal	0.8	(0.1)	1.3	(0.1)	2.5	(0.1)	4.3	(0.3)
Culling older cattle to prevent death loss	—		1.6	(0.1)	3.0	(0.2)	4.3	(0.3)
Frequent checks in high predation areas/seasons	—		1.8	(0.1)	3.7	(0.3)	4.8	(0.3)
Other nonlethal	0.3	(0.1)	0.5	(0.1)	0.8	(0.1)	1.3	(0.2)
Any method	3.1	(0.2)	7.5	(0.3)	11.3	(0.4)	19.0	(0.7)

Percentage of operations by nonlethal predator control method(s) used, and by year



A higher percentage of beef operations used nonlethal predator control methods than “other” operations.

F.2. Percentage of operations that used any nonlethal predator control methods, by type of operation:

Operation type	Percent operations	Std. error
Beef	20.3	(0.8)
Dairy	13.9	(2.4)
Mixed	19.2	(4.1)
Other	11.9	(1.6)
Total	19.0	(0.7)

F.3. Percentage of operations by nonlethal predator control method(s) used and by type of operation:

	Percent Operations							
	Beef		Dairy		Mixed		Other	
Method	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Guard animals	8.8	(0.6)	6.9	(2.3)	7.7	(3.5)	5.4	(1.2)
Fencing	6.2	(0.5)	5.6	(1.6)	8.3	(3.5)	6.0	(1.2)
Herding	1.5	(0.3)	0.7	(0.2)	1.0	(0.4)	1.0	(0.5)
Night penning	1.1	(0.3)	3.3	(1.4)	4.6	(2.1)	1.8	(0.6)
Fright tactics	0.5	(0.1)	0.1	(0.0)	0.2	(0.1)	0.2	(0.2)
Livestock carcass removal	4.8	(0.3)	3.1	(0.5)	9.4	(3.3)	1.8	(0.7)
Culling older cattle to prevent death loss	4.9	(0.4)	3.9	(0.6)	7.7	(1.8)	0.4	(0.2)
Frequent checks in high predation areas/seasons	5.5	(0.4)	2.6	(1.3)	8.7	(3.5)	0.7	(0.3)
Other nonlethal	1.5	(0.2)	0.2	(0.1)	0.7	(0.7)	0.3	(0.2)
Any method	20.3	(0.8)	13.9	(2.4)	19.2	(4.1)	11.9	(1.6)

The percentage of operations that used any nonlethal predator control method ranged from about 7 percent in Pennsylvania to about 30 percent in Georgia, New Mexico, South Carolina, Tennessee, and Virginia. Interestingly, Pennsylvania also had the lowest percentage of operations with any cattle or calf deaths due to predators, although this does not imply a causal relationship.

F.4. Percentage of operations that had any cattle or calf deaths due to predators and percentage of operations that used any nonlethal predator control methods, by State:

State	Percent operations with any cattle or calf deaths	Std. error	Percent operations that used any nonlethal predator control methods	Std. error
AL	15.3	(2.4)	22.7	(3.0)
AZ	13.8	(3.7)	10.4	(3.2)
AR	11.8	(2.1)	20.2	(2.9)
CA	12.9	(2.2)	21.1	(5.7)
CO	10.6	(2.8)	14.9	(3.8)
FL	12.7	(2.4)	19.7	(3.7)
GA	15.7	(3.0)	30.7	(4.1)
ID	6.1	(1.5)	10.1	(3.2)
IL	5.3	(1.8)	16.4	(3.3)
IN	5.4	(2.1)	18.1	(3.2)
IA	4.3	(1.1)	9.6	(2.0)
KS	5.7	(1.1)	7.3	(2.0)
KY	10.9	(1.6)	22.2	(2.6)
LA	11.8	(2.3)	21.0	(3.7)
MI	2.5	(1.5)	20.7	(5.5)
MN	4.5	(1.0)	12.6	(3.1)
MS	12.4	(2.2)	21.3	(3.2)
MO	7.2	(1.2)	18.8	(2.6)
MT	10.6	(1.8)	14.5	(2.5)
NE	7.5	(1.5)	8.7	(1.6)
NV	12.1	(3.4)	17.1	(7.4)
New England[1]	5.6	(1.7)	19.0	(4.0)

continued→

F.4. (cont'd.) Percentage of operations that had any cattle or calf deaths due to predators and percentage of operations that used any nonlethal predator control methods, by State:

State	Percent operations with any cattle or calf deaths	Std. error	Percent operations that used any nonlethal predator control methods	Std. error
NM	15.9	(3.6)	34.4	(11.0)
NY	4.7	(1.8)	27.7	(7.3)
NC	5.7	(1.8)	22.8	(4.9)
ND	17.9	(2.6)	11.6	(2.6)
OH	5.4	(1.5)	24.2	(5.7)
OK	17.3	(2.8)	18.2	(4.6)
OR	5.9	(1.4)	23.4	(8.0)
PA	1.6	(0.7)	6.9	(1.3)
SC	18.7	(4.6)	29.6	(6.4)
SD	13.3	(2.3)	11.2	(2.6)
TN	9.9	(1.5)	29.0	(3.1)
TX	10.6	(1.3)	19.3	(2.2)
UT	9.5	(3.0)	9.7	(3.7)
VA	15.6	(3.2)	28.9	(4.4)
WA	2.9	(0.7)	19.9	(7.0)
WV	2.5	(1.5)	23.5	(4.4)
WI	3.9	(1.0)	11.0	(2.1)
WY	10.3	(2.0)	14.0	(2.6)
Other States[2]	5.2	(2.2)	43.7	(12.2)
United States	9.3	(0.4)	19.0	(0.7)

[1]New England includes CT, ME, MA, NH, RI, and VT.

[2]Other States include AK, DE, HI, MD, and NJ.

For operations that used any nonlethal predator control methods, the highest percentages used guard animals (26.3 percent), fencing (15.5 percent), other nonlethal method (5.1 percent), or frequent checks in high predation areas/seasons (5.1 percent).

The two most commonly used combinations of two or more methods were guard animals/ fencing (4.1 percent of operations) and livestock carcass removal/ culling older cattle 4.1 percent).

F.5. For operations that used any nonlethal predator control methods, percentage of operations that used specific combinations of methods in 2015 for the 15 most used methods or combinations of methods:

Rank	Method or method combination	Percent operations	Std. error
1	Guard animals only	26.3	(2.0)
2	Fencing only	15.5	(1.5)
3	Other nonlethal method only	5.1	(0.8)
4	Frequent checks only	5.1	(0.7)
5	Guard animals Fencing	4.1	(0.9)
6	Livestock carcass removal Culling older cattle	4.1	(0.6)
7	Livestock carcass removal only	3.7	(0.9)
8	Livestock carcass removal Culling older cattle Frequent checks	3.0	(0.4)
9	Culling older cattle only	2.6	(0.4)
10	Guard animals Frequent checks	1.5	(0.6)
11	Culling older cattle Frequent checks	1.5	(0.3)
12	Herding only	1.4	(0.6)
13	Guard animals Livestock carcass removal Culling older cattle Frequent checks	1.2	(0.3)
14	Fencing Livestock carcass removal Culling older cattle Frequent checks	1.1	(0.3)
15	Livestock carcass removal Frequent checks in high predation areas/seasons	1.1	(0.3)
	All other nonlethal predator control method combinations	22.7	(1.7)
	Total	100.0	

On average, approximately 4.0 percent of operations spent any money on nonlethal predator control methods, and 6.2 percent spent any money on lethal predator control methods. More beef operations spent money on lethal predator control methods (7.1 percent) than dairy operations (2.8 percent).

F.6. Percentage of operations that spent any money on nonlethal or lethal predator control methods in 2015, by type of operation:

	Percent Operations				
	Operation Type				
Predator control method	**Beef**	**Dairy**	**Mixed**	**Other**	**Total**
Nonlethal	4.5 (0.5)	3.6 (1.5)	5.2 (3.1)	1.1 (0.4)	4.0 (0.4)
Lethal	7.1 (0.4)	2.8 (0.6)	8.3 (3.2)	1.8 (0.4)	6.2 (0.3)

For operations that spent any money on nonlethal predator control methods, the average amount of money spent was nearly $3,000. Dairy operations spent less ($709) than any of the other operation types. For operations that spent any money on lethal methods, the average amount spent was about $300.

F.7. For operations that spent any money on nonlethal or lethal predator control methods, average amount of money spent during 2015, by type of operation:

	Average Amount ($)				
	Operation Type				
Predator control method	**Beef**	**Dairy**	**Mixed**	**Other**	**Total**
Nonlethal	3,100	709	1,848	2,999	2,962
Lethal	310	177	366	201	303

Section III: Methodology

1. Survey procedures

A random sample of U.S. producers was surveyed to provide data for these estimates. Procedures ensured that all cattle producers, regardless of size, had a chance to be included in the study. Large operations were sampled more heavily than small operations. Data were collected from about 37,900 operators during the first half of January by mail, telephone, and face-to-face personal interviews, and 68 percent of the reports were usable (respondent provided inventory information; either zero or positive number on hand).

Information from previous NASS studies included data collected in NASS' annual Cattle surveys. For these surveys, information on cattle and calf inventory on January 1 in 1992, 1996, 2001, 2006, and 2011, and information on cattle and calf death loss was collected during the years 1991, 1995, 2000, 2005, and 2010. The number of producers for which information was collected was approximately 77,000 in 1991, 50,000 in 1996, 50,000 in 2001, 50,000 in 2006, and 40,000 in 2011.

Inventory information was reported in NASS' Cattle reports in the years 1992, 1996, 2001, 2006, and 2011. Aggregate death loss information was reported in NASS' "Meat Animal Production Disposition, and Income" reports released in April 1992, 1996, 2001, 2006, 2010, and 2016. Death loss information was also released, with breakouts by cause in NASS' "Cattle and Calves Death Loss" reports released in May 1992, 1996, 2006, and 2011, and in NASS' "Cattle Predator Loss" report issued in May 2001. Note that in the past, Alaska was the only State not presented an opportunity to participate in the surveys.

2. Estimation procedures

The data were weighted to allow inference to the population of all U.S. cattle operations on the NASS list and area frames, which is a proxy population for all cattle operations in the United States. Weights are constructed to be the inverse of the probability of selection (with probabilities being approximately proportional to stratum size), with adjustments for nonresponse within State and operation size strata. Weight quality is assessed in several ways, one of which is ensuring that weighted sample totals equal published population totals (of cattle and calf inventory or aggregate cattle and calf death losses, for example).

For estimates generated by NAHMS, SAS (SAS Institute, version 9.4) and SAS-called SUDAAN software (Research Triangle Institute, version 11.0.1) was used. Standard errors, where shown, account for the stratified study design with unequal weights.