United States Department of Agriculture

Animal and Plant Health Inspection Service

Veterinary Services

Wildlife Services

National Animal Health Monitoring System

February 2012

Cattle and Calves Predator Death Loss in the United States, 2010

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Items of Note

This report focuses on beef operations because in 2010 the vast majority of cattle and calf predator losses occurred on beef operations—89.4 percent of all cattle predator losses and 94.0 percent of all calf predator losses were on beef operations. The remainder of losses was on dairy, mixed, or other operation types.

Beef operations lost 7.4 cattle per 10,000 head to predators in 2010. Coyotes were the single largest predator cause, accounting for about one-third of predator losses. There were some regional differences, with producers in the western United States attributing a lower percentage of losses to coyotes and a higher percentage of losses to unknown predators.

A total of 61.7 calves per 10,000 born were lost to predators on beef operations in 2010. Small operations (1 to 49 cows) lost almost double the number of calves to predators (95.3 calves lost per 10,000 born) than the larger operation sizes (50 or more cows) [about 50 calves lost per 10,000 born]. Coyotes were the single largest predator cause of calf loss and accounted for over one-half (56.9 percent) of calf predator losses. In the Southwest and South Central regions, mountain lions were also an important cause of death loss, accounting for about 12 percent of calf predator losses. More than 10 percent of calf predator losses were attributed to dogs in the Southeast and South Central regions, a much higher percentage than in the other regions.

The percentage of beef operations that used nonlethal predator control methods increased since 2000. In 2010, 12.4 percent of beef operations used at least one nonlethal predator control method, compared with 5.4 percent of operations in 2000. The most common nonlethal method was guard animals, followed by frequent checks, fencing, and culling. Of operations that used any nonlethal predator control method, 41.8 percent used two or more methods.

Acknowledgments

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 contacted cattle producers and collected the data. Their hard work and dedication were invaluable. We'd also like to thank the personnel at the USDA–APHIS–Veterinary Services' Centers for Epidemiology and Animal Health for their efforts in generating and distributing this report, and the USDA-APHIS–Wildlife Services for their involvement.

All participants are to be commended, particularly the producers whose voluntary efforts made this report possible.

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Suggested bibliographic citation for this report:
USDA. 2012. “Cattle and Calves Predator Death Loss in the United States, 2010".
USDA–APHIS–VS–CEAH, National Animal Health Monitoring System, Fort Collins, CO
#643.0312

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Feedback
Feedback, comments, and suggestions regarding the Cattle and Calves Predator Death Loss report are welcomed. You may submit feedback via online survey at: http://nahms.aphis.usda.gov (Click on “FEEDBACK on NAHMS reports.”)

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Introduction

Each January, the U.S. Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) collects cattle data on inventory, calf crop, and total death losses for State and national estimating programs. Inventory and calf crop estimates (number of head) are published in January, while cattle and calves death losses (number of head) are published annually in April via the "Meat Animals: Production, Disposition and Income" report. For the January 1992, 1996, 2001, 2006, and 2011 surveys, USDA's Animal and Plant Health Inspection Service (APHIS) provided funding for a detailed breakdown of total losses for producer-attributed cause of loss occurring the previous year. Death losses (number of head) by cause for predator and nonpredator losses were estimated and subsequently published by NASS (Cattle Death Loss, May 12, 2011).

This report provides additional analysis of cattle and calves losses in 2010 from all causes. Death losses by size group and region are also provided, with special emphasis on predator causes of loss. When possible the 1991, 1995, 2000, and 2005 death losses are provided for comparison.

Terms Used in This Report

NA: Not available.

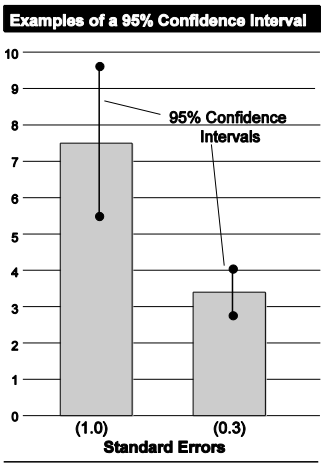
Operation classification:

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 cattle 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: Operation that did not meet the criteria to be classified as beef, dairy, or mixed operation.



Population estimates: Estimates in this report are provided with a measure of precision called the standard error. A 95-percent confidence interval can be created with bounds equal to the estimate, plus or minus two standard errors. If the only error is sampling error, the confidence intervals created in this manner will contain the true population mean 95 out of 100 times. In the example to the left, an estimate of 7.5 with a standard error of 1.0 results in limits of 5.5 to 9.5 (two times the standard error above and below the estimate). The second estimate of 3.4 shows a standard error of 0.3 and results in limits of 2.8 and 4.0. Alternatively, the 90-percent confidence interval would be created by multiplying the standard error by 1.65 instead of 2. Most estimates in this report are rounded to the nearest tenth. If rounded to 0, the standard error was reported (0.0). If there were no reports of the event, no standard error was reported (–). References to estimates being higher or lower than other estimates in this report are based on the 95-percent confidence intervals not overlapping.

Regions: The United States was divided into six regions for the purposes of providing data on smaller geographic areas. Alaska is not included because cause-of-loss estimates are not generated for the State.

North Central: Iowa, Minnesota, Nebraska, North Dakota, South Dakota

Northeast: Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, Wisconsin

Northwest: Idaho, Montana, Oregon, Washington, Wyoming

South Central: Arkansas, Kansas, Missouri, Oklahoma, Texas

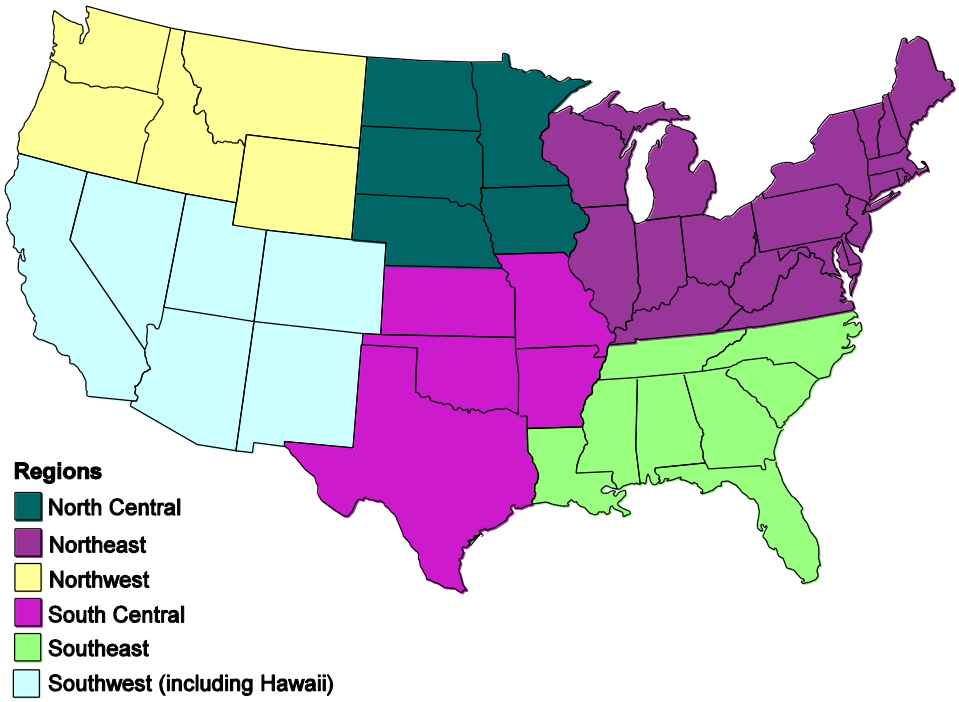
Southeast: Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee

Southwest: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, Utah

Operation size: Total number of cows for beef, dairy, and mixed operations.

- 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 29, 30 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** (total number of cattle and calves) size groups are: 1 to 99 head, 100 to 499 head, 500 to 999 and 1,000 or more head.

Cattle and calves predator death loss regions



Section I: Historical Overview—Number of Head

A. U.S. Demographics[1]

1. Inventory—January 1, 1992–2011

Number of cattle and calves, by year:

	January 1 Inventory (x1,000)*				
	Year				
Class	**1992**	**1996**	**2001**	**2006**	**2011**
All cattle and calves	97,556	103,548	97,298	96,342	90,769
Cattle 500 lb or more	79,220	85,164	81,082	81,003	76,624
Beef cows	33,007	35,319	33,398	32,703	29,883
Dairy cows	9,728	9,420	9,172	9,104	9,230
Heifers, steers, and bulls	36,485	40,426	38,511	39,196	37,511
Calves	18,336	18,384	16,216	15,339	14,145

*Numbers may not add up due to rounding.

2. Operations—1991–2010

a. Number of operations with cattle and calves, beef cows, and milk cows, by year:

	Number Operations				
	Year				
Class	**1991**	**1995**	**2000**	**2005**	**2010**
Cattle and calves	1,242,270	1,190,630	1,076,370	982,510	935,000
Beef cows	910,950	897,660	831,270	770,170	742,000
Milk cows	180,640	139,670	105,055	78,300	62,500

[1]All tables in this section are derived from NASS published data.

b. Percentage of operations with **beef** cows, by size of operation and by year:

	Percent Operations				
	Year				
Size of operation (number of beef cows)	**1991**	**1995**	**2000**	**2005**	**2010**
1–49	81.2	79.8	78.8	77.5	79.2
50–99	11.2	11.8	12.0	12.3	11.1
100–499	7.6*	7.8	8.5	9.5	8.9
500 or more	NA	0.6	0.7	0.7	0.8
Total	100.0	100.0	100.0	100.0	100.0

*100 head or more.

c. Percentage of operations with **dairy** cows, by size of operation and by year:

	Percent Operations				
	Year				
Size of operation (number of dairy cows)	**1991**	**1995**	**2000**	**2005**	**2010**
1–29	39.8	34.5	29.3	28.7	32.0
30–49	22.8	22.2	21.1	19.0	17.6
50–99	25.9	28.1	29.7	29.6	24.8
100–199	11.5*	10.2	12.2	12.8	13.8
200 or more	NA	5.0	7.7	9.9	11.8
200–499	NA	NA	5.1	6.0	6.4
500 or more	NA	NA	2.6	3.9	5.4
Total	100.0	100.0	100.0	100.0	100.0

*100 head or more.

d. Percentage of **beef** cow inventory, by size of operation and by year:

	Percent Inventory				
	Year				
Size of operation (number of beef cows)	**1991**	**1995**	**2000**	**2005**	**2010**
1–49	33.1	31.2	29.5	28.0	28.0
50–99	19.9	19.2	19.1	18.9	17.4
100–499	47.0*	35.3	36.7	38.5	38.0
500 or more	NA	14.3	14.7	14.6	16.6
Total	100.0	100.0	100.0	100.0	100.0

*100 head or more.

e. Percentage of **dairy** cow inventory, by size of operation and by year:

	Percent Inventory				
	Year				
Size of operation (number of dairy cows)	**1991**	**1995**	**2000**	**2005**	**2010**
1–29	6.3	4.0	2.9	2.0	1.7
30–49	16.6	13.0	9.1	6.4	4.7
50–99	31.7	28.0	22.0	17.1	11.8
100–199	45.4*	20.0	18.1	14.6	12.3
200 or more	NA	35.0	47.9	59.9	69.5
200–499	NA	NA	16.6	15.4	12.8
500 or more	NA	NA	31.3	44.5	56.7
Total	100.0	100.0	100.0	100.0	100.0

*100 head or more.

3. Calf crop—1991–2010

Calf crop and calf crop per 100 cows on hand, by year:

	Year				
	1991	**1995**	**2000**	**2005**	**2010**
Calf crop (1,000 head)	38,583	40,264	38,631	37,106	35,685
Calf crop per 100 cows on hand (January 1 following year)	90.3	90.0	90.7	88.8	89.2

B. Regional Demographics[2]

1. Cattle and calves inventory—January 1, 1992, 1996, 2001, 2006, and 2011

NASS does not conduct a cause-of-loss survey in Alaska; therefore, Alaska is excluded from regional demographics tables and nonpredator loss estimates. Overall, the national inventory of cattle and calves declined from a high of 103.5 million head in 1996 to 92.6 million head on January 1, 2011.

Number of cattle and calves and number of cattle 500 lb or more, by region and by year:

	January 1—Inventory (x1,000)									
	Cattle and calves					**Cattle 500 lb or more**				
Region	**1992**	**1996**	**2001**	**2006**	**2011**	**1992**	**1996**	**2001**	**2006**	**2011**
North Central	18,000	19,110	18,830	18,110	17,880	15,248	16,555	16,884	16,380	16,335
Northeast	18,638	18,184	16,111	16,125	15,563	14,598	14,259	12,903	12,838	12,459
Northwest	8,300	8,920	8,600	8,380	8,420	7,320	8,018	7,796	7,654	7,665
South Central	30,480	33,610	31,500	32,260	30,370	24,565	27,390	25,650	26,800	25,095
Southeast	10,760	11,710	9,925	9,350	8,725	8,152	8,845	7,506	7,134	6,669
Southwest	11,270	12,004	12,320	12,101	11,611	9,331	10,089	10,334	10,184	9,849
Total*	97,548	103,538	97,286	96,326	92,569	79,214	85,156	81,073	80,990	78,072

*Excludes Alaska, so total of regions does not match published United States total shown in table A.1.

[2]All tables in this section are derived from NASS published data.

2. Beef and dairy cow inventory—January 1, 1992, 1996, 2001, 2006, and 2011

From 1992 to 2011, the U.S. inventory of beef cows dropped from 33 million to 31 million head, while dairy-cow inventory decreased from 9.7 million to 9.1 million head. In 2011, the South Central region had more beef cows than any other region (11.3 million head), while the Northeast region had more dairy cows than any other region (3.8 million).

Number of beef and dairy cows that had calved, by region and by year:

	January 1—Inventory (x1,000)									
	Beef cows					**Dairy cows**				
Region	**1992**	**1996**	**2001**	**2006**	**2011**	**1992**	**1996**	**2001**	**2006**	**2011**
North Central	5,618	6,072	6,151	5,976	5,462	1,232	1,078	949	824	848
Northeast	3,832	3,927	3,511	3,702	3,455	4,787	4,417	4,018	3,829	3,782
Northwest	3,641	3,874	3,721	3,479	3,398	549	626	714	856	967
South Central	11,484	12,520	11,895	12,010	11,332	856	820	715	670	708
Southeast	5,262	5,760	5,077	4,839	4,568	763	640	543	422	347
Southwest	3,167	3,153	3,040	2,690	2,644	1,540	1,838	2,178	2,502	2,497
Total*	33,004	35,316	33,395	32,696	30,859	9,727	9,419	9,117	9,103	9,149

*Excludes Alaska, so total of regions does not match published United States total shown in table A.1.

3. Calf crop—1991, 1995, 2000, 2005, and 2010

About 30 percent of the 35.7 million beef and dairy calves born in 2010 were born in the South Central region.

Calendar year calf crop, by region and by year:

	Calf Crop (x1,000)				
	Year				
Region	**1991**	**1995**	**2000**	**2005**	**2010**
North Central	6,570	6,770	6,730	6,340	6,000
Northeast	7,823	7,5767	6,813	6,560	6,256
Northwest	3,945	4,280	4,410	4,140	4,190
South Central	11,070	11,910	11,330	11,180	10,770
Southeast	5,205	5,475	4,880	4,520	4,175
Southwest	3,968	4,249	4,464	4,361	4,290
Total*	38,581	40,261	38,627	37,101	35,681

*Excludes Alaska, so total of regions does not match published United States total shown in table A.1.

C. Death Loss[3]

1. Loss from all causes—1991–2010

During 2010, 1.7 million cattle and 2.3 million calves were lost to all causes. These totals represent 2.2 and 6.3 percent of cattle inventory and calf crop, respectively. The percentage of cattle inventory lost, and the actual losses, increased slightly from 1.9 percent in 1991 to 2.2 percent in 2010. The percentage of calf crop lost declined from 7.0 percent in 1991 to 6.3 percent in 2010.

a. Number of cattle and calf death losses due to all causes, by year:

	Number (x1,000)				
	Year				
	1991	**1995**	**2000**	**2005**	**2010**
Cattle	1,540	1,645	1,711	1,718	1,735
Calves	2,707	2,739	2,387	2,335	2,260
Total	4,247	4,384	4,098	4,053	3,993

[3]Source: NASS published data.

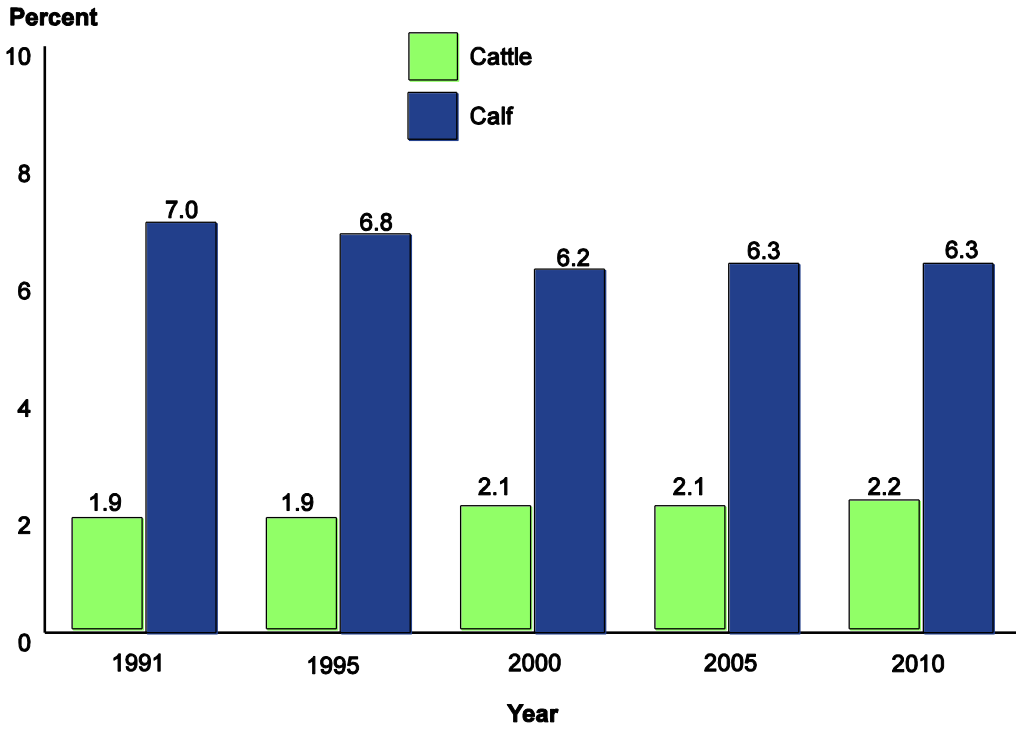
b. Cattle death loss as a percentage of January 1 inventory of cattle 500 lb or more on January 1 of the following year, by year:

Percent Inventory				
Year				
1991	**1995**	**2000**	**2005**	**2010**
1.9	1.9	2.1	2.1	2.2

c. Calf death loss as a percentage of calf crop, by year:

Percent Calf Crop				
Year				
1991	**1995**	**2000**	**2005**	**2010**
7.0	6.8	6.2	6.3	6.3

Cattle and calf death loss,* by year



*Cattle death loss as a percentage of January 1 inventory of cattle 500 lb or more on January 1 of the following year. Calf death loss as a percentage of calf crop.

2. Nonpredator and predator death loss (excluding Alaska)—1991[2], 1995[2], 2000[2], 2005, and 2010

Since 1991, nonpredator causes accounted for the majority of cattle and calf losses. In 2010, nonpredator causes accounted for 94.5 percent of losses. The percentage of total losses due to predators increased steadily from 2.4 percent in 1991 to 5.5 percent in 2010. As expected, predators accounted for a higher percentage of calf losses than cattle losses (8.0 and 2.3 percent, respectively).

a. Number and percentage of cattle and calf death losses, by cause and by year:

	Year									
	1991		1995		2000		2005		2010	
Cause	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**
Nonpredator	4,143.4	97.6	4,263.6	97.3	3,952.0	96.4	3,861.0	95.3	3,773.0	94.5
Predator	102.0	2.4	118.8	2.7	144.6	3.6	190.0	4.7	219.9	5.5
Total	4,245.4	100.0	4,382.4	100.0	4,096.6	100.0	4,051.0	100.0	3,992.9	100.0

b. Number and percentage of cattle death losses, by cause and by year:

	Year									
	1991		1995		2000		2005		2010	
Cause	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**
Nonpredator	1523.7	99.0	1,622.7	98.7	1,689.6	98.8	1,683.0	98.0	1,694.0	97.7
Predator	15.4	1.0	21.4	1.3	20.5	1.2	34.0	2.0	39.8	2.3
Total	1,539.1	100.0	1,644.1	100.0	1,710.1	100.0	1,717.0	100.0	1,733.8	100.0

c. Number and percentage of calf death losses, by cause and by year:

	Year									
	1991		1995		2000		2005		2010	
Cause	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**
Nonpredator	2,619.7	96.8	2,640.9	96.5	2,262.4	94.8	2,178.0	93.3	2,079.0	92.0
Predator	86.6	3.2	97.4	3.5	124.1	5.2	156.0	6.7	180.1	8.0
Total	2,706.3	100.0	2,738.3	100.0	2,386.5	100.0	2,334.0	100.0	2,259.1	100.0

[2]NASS estimates of total death loss were revised in subsequent publications. However, estimates of predator and nonpredator death loss were not revised. The ratio of predator to nonpredator losses in the initial publication was maintained and applied to the revised total loss estimate to generate the losses due to predators and nonpredators in tables a., b., and c. For the 1991 estimates, cattle losses were revised from 1,583,800 to 1,539,100, and calf losses were revised from 2,786,300 to 2,706,300. For the 1995 estimates, cattle losses were revised from 1, 635,100 to 1,644,100, and calf losses were revised from 2,745,300 to 2,738,300. For the 2000 estimates, cattle losses were revised from 1,721,100 to 1,710,100, and calf losses were revised from 2,409,500 to 2,386,500.

3. Regional death loss—1991, 1995, 2000, 2005, and 2010

a. Number of cattle death losses from all causes, by region and by year:

	Number Losses (x1,000)				
	Year				
Region	**1991**	**1995**	**2000**	**2005**	**2010**
North Central	264.0	277.0	281.0	267.0	309.0
Northeast	312.1	311.1	291.1	300.0	305.8
Northwest	103.0	115.0	124.0	117.0	116.0
South Central	498.0	522.0	625.0	635.0	625.0
Southeast	183.0	201.0	174.0	174.0	158.0
Southwest	179.0	218.0	215.0	224.0	220.0
Total*	1,539.1	1,644.1	1,710.1	1,717.0	1,733.8

*Excludes Alaska, so total of regions does not match published United States total.

In 2010, the North Central and Northwest regions lost a smaller percentage of cattle than the other regions.

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

	Percent Inventory				
	Year				
Region	**1991**	**1995**	**2000**	**2005**	**2010**
North Central	1.7	1.7	1.7	1.6	1.9
Northeast	2.1	2.2	2.3	2.3	2.5
Northwest	1.4	1.4	1.6	1.5	1.5
South Central	2.0	1.9	2.4	2.4	2.5
Southeast	2.2	2.3	2.3	2.4	2.4
Southwest	1.9	2.2	2.1	2.2	2.2
Total	1.9	1.9	2.1	2.1	2.2

c. Number of calf death losses from all causes, by region and by year:

	Number Losses (x1,000)				
	Year				
Region	**1991**	**1995**	**2000**	**2005**	**2010**
North Central	493.0	553.0	425.0	392.0	398.0
Northeast	717.3	673.3	538.5	543.0	505.1
Northwest	204.0	216.0	225.0	205.0	192.0
South Central	689.0	675.0	620.0	638.0	665.0
Southeast	297.0	313.0	266.0	238.0	214.0
Southwest	306.0	308.0	312.0	318.0	285.0
Total*	2,706.3	2,738.3	2,386.5	2,334.0	2,259.1

*Excludes Alaska, so total of regions does not match published United States total.

The Northeast region lost the highest percentage of calf inventory in 2010, compared with the other regions.

d. Calf death loss as a percentage of calf crop, by region and by year:

	Percent Calf Crop				
	Year				
Region	**1991**	**1995**	**2000**	**2005**	**2010**
North Central	7.5	8.2	6.3	6.2	6.6
Northeast	9.2	8.9	7.9	8.3	8.1
Northwest	5.2	5.0	5.1	5.0	4.6
South Central	6.2	5.7	5.5	5.7	6.2
Southeast	5.7	5.7	5.5	5.3	5.1
Southwest	7.7	7.2	7.0	7.3	6.6
Total	7.0	6.8	6.2	6.3	6.3

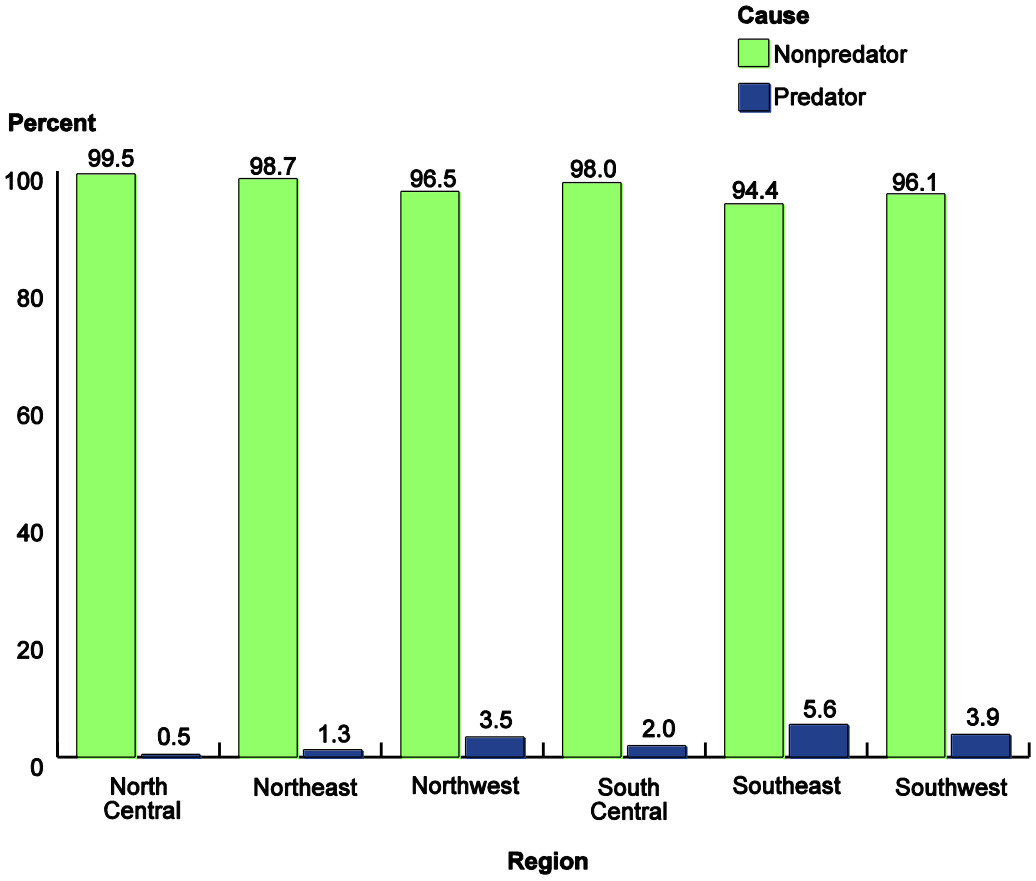
4. Regional nonpredator and predator death loss—1995, 2000, 2005, and 2010

With the exception of the North Central region, the percentage of losses due to predator causes increased in all regions from 1995 to 2010. In the Southeast region, the percentage of losses due to predator causes increased from 1.5 percent in 1995 to 5.6 percent in 2010. In the North Central region, the percentage of losses due to predator causes decreased from 0.8 percent in 1995 to 0.5 percent in 2010.

a. Number and percentage of cattle death losses by cause—by region and by year:

		Year							
		1995		2000		2005		2010	
Region	**Cause**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**
North Central	Nonpredator	274.8	99.2	280.2	99.7	265.6	99.5	307.6	99.5
	Predator	2.2	0.8	0.8	0.3	1.4	0.5	1.4	0.5
	Total	277.0	100.0	281.0	100.0	267.0	100.0	309.0	100.0
Northeast	Nonpredator	308.3	99.1	288.2	99.0	294.7	98.2	301.7	98.7
	Predator	2.8	0.9	2.9	1.0	5.3	1.8	4.1	1.3
	Total	311.1	100.0	291.1	100.0	300.0	100.0	305.8	100.0
Northwest	Nonpredator	113.5	98.7	121.9	98.3	114.1	97.5	111.9	96.5
	Predator	1.5	1.3	2.1	1.7	2.9	2.5	4.1	3.5
	Total	115.0	100.0	124.0	100.0	117.0	100.0	116.0	100.0
South Central	Nonpredator	514.2	98.5	619.7	99.2	625.0	98.4	612.2	98.0
	Predator	7.8	1.5	5.3	0.8	10.0	1.6	12.8	2.0
	Total	522.0	100.0	625.0	100.0	635.0	100.0	625.0	100.0
Southeast	Nonpredator	198.0	98.5	170.5	98.0	165.1	94.9	149.2	94.4
	Predator	3.0	1.5	3.5	2.0	8.9	5.1	8.8	5.6
	Total	201.0	100.0	174.0	100.0	174.0	100.0	158.0	100.0
Southwest	Nonpredator	214.1	98.2	208.8	97.1	218.5	97.5	211.4	96.1
	Predator	3.9	1.8	6.2	2.9	5.5	2.5	8.6	3.9
	Total	218.0	100.0	215.0	100.0	224.0	100.0	220.0	100.0

Percentage of 2010 calf death loss, by cause and by region

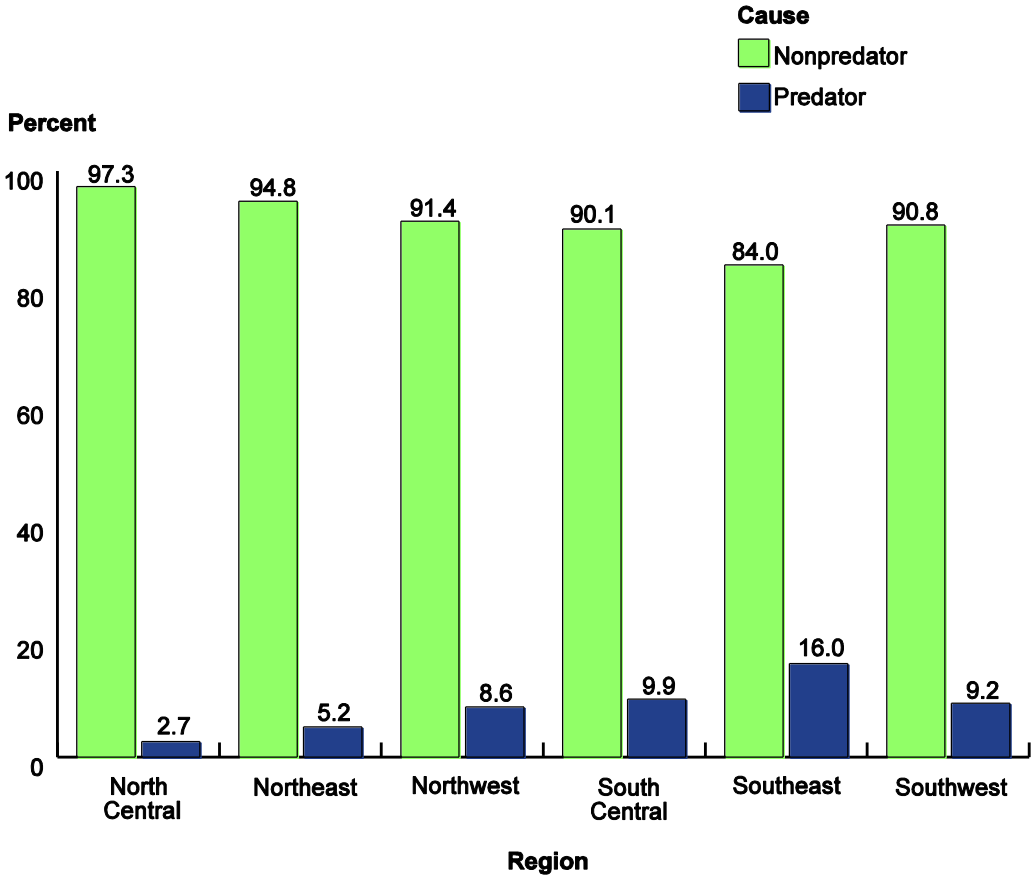


The percentage of total losses due to predator causes ranged from 2.7 percent in the North Central region to 16.0 percent in the Southeast region.

b. Number and percentage of calf death losses by cause—by region and by year:

		Year							
		1995		**2000**		**2005**		**2010**	
Region	**Cause**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**	**Number** (x1,000)	**Pct.**
North Central	Nonpredator	545.3	98.6	416.9	98.1	382.1	97.5	387.2	97.3
	Predator	7.7	1.4	8.1	1.9	9.9	2.5	10.8	2.7
	Total	553.0	100.0	425.0	100.0	392.0	100.0	398.0	100.0
Northeast	Nonpredator	662.5	98.4	526.1	97.7	520.3	95.8	478.7	94.8
	Predator	10.8	1.6	12.4	2.3	22.7	4.2	26.4	5.2
	Total	673.3	100.0	538.5	100.0	543.0	100.0	505.1	100.0
Northwest	Nonpredator	206.1	95.4	210.1	93.3	191.4	93.4	175.4	91.4
	Predator	9.9	4.6	14.9	6.7	13.6	6.6	16.6	8.6
	Total	216.0	100.0	225.0	100.0	205.0	100.0	192.0	100.0
South Central	Nonpredator	636.5	94.3	581.6	93.8	581.0	91.1	599.3	90.1
	Predator	38.5	5.7	38.4	6.2	57.0	8.9	65.7	9.9
	Total	675.0	100.0	620.0	100.0	638.0	100.0	665.0	100.0
Southeast	Nonpredator	299.5	95.7	242.4	91.1	205.6	86.4	179.7	84.0
	Predator	13.5	4.3	23.6	8.9	32.4	13.6	34.3	16.0
	Total	313.0	100.0	266.0	100.0	238.0	100.0	214.0	100.0
Southwest	Nonpredator	292.3	94.9	284.5	91.2	297.6	93.6	258.7	90.8
	Predator	15.7	5.1	27.5	8.8	20.4	6.4	26.3	9.2
	Total	308.0	100.0	312.0	100.0	317.0	100.0	285.0	100.0

Percentage of 2010 calf death loss, by cause and by region



Section II: Population Estimates—Losses Due to Predators

A. Operation Classification

1. Operation classification process

This section reports inventory and death loss on four operation types with cows: beef, dairy, mixed, and other operations (see Terms Used in This Report, p 2, for definition of operation types). NASS collects inventory numbers of beef cows, milk cows, and heifers on each operation. However, animal breed is not specified in death-loss numbers. To estimate death loss, operations were classified based on inventory numbers of beef and dairy cows.

2. Operation characteristics

Nearly two-thirds (66.1 percent) of the January 1, 2011, inventory of cattle and calves was on beef operations. Over 99 percent of beef cows were on beef operations, and 0.8 percent were on mixed operations. Over 94 percent of the dairy cow inventory was on dairy operations, and 5.6 percent was on mixed operations. Over three-fourths of the calves born were on beef operations.

a. Percentage of January 1, 2011, inventory for all cattle and calves, beef cows, dairy cows, and calves born, by operation type:

	Percent Inventory							
	All cattle and calves		Beef cows		Dairy cows		Calves born	
Operation type	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Beef	66.1	(0.5)	99.2	(0.1)	0.1	(0.0)	77.5	(0.4)
Dairy	17.4	(0.3)	0.0	(0.0)	94.3	(0.5)	18.8	(0.3)
Mixed	1.6	(0.1)	0.8	(0.1)	5.6	(0.5)	1.5	(0.1)
Other	14.9	(0.5)	0.0	(—)	0.0	(—)	2.2	(0.3)
Total	100.0		100.0		100.0		100.0	

The percentage of **cattle** losses due to predators ranged from 0.3 percent on dairy operations to 4.2 percent on beef operations.

b. Percentage of 2010 cattle death loss, by cause and by operation type:

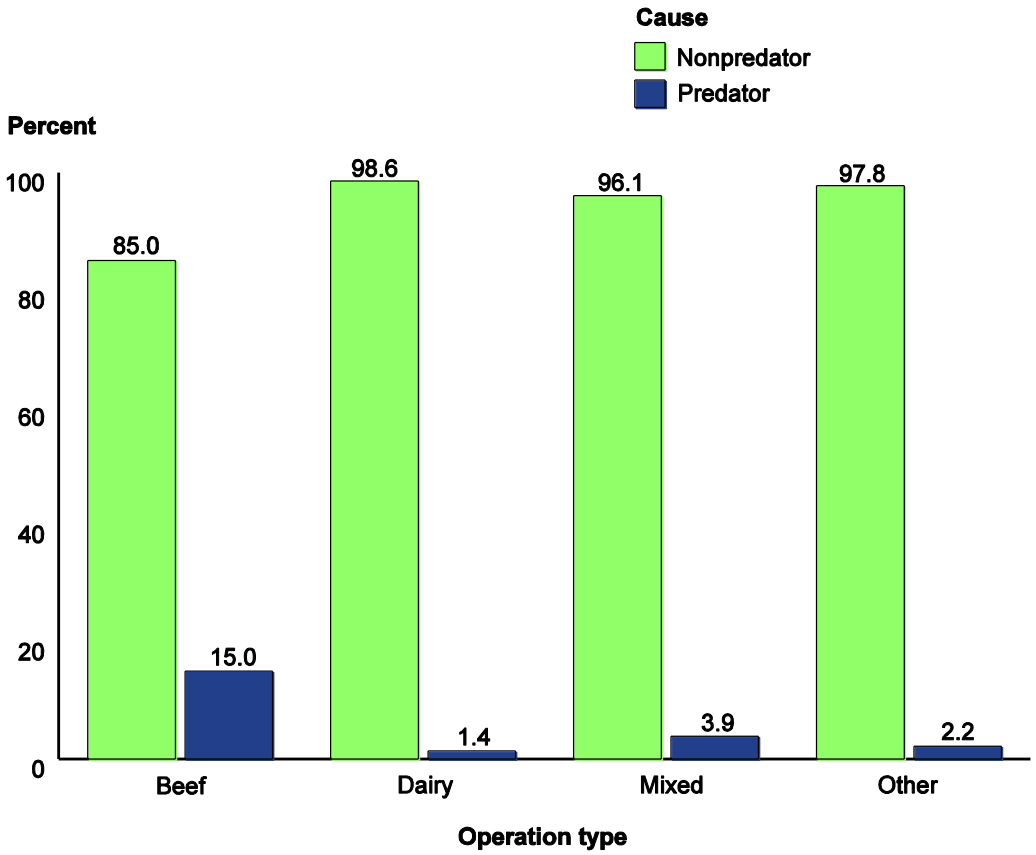
	Percent Loss							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Nonpredator	95.8	(0.5)	99.7	(0.1)	98.7	(0.4)	99.2	(0.3)
Predator	4.2	(0.5)	0.3	(0.1)	1.3	(0.4)	0.8	(0.3)
Total	100.0		100.0		100.0		100.0	

On beef operations, 15.0 percent of **calf** losses were due to predator causes, compared with 1.4, 3.9, and 2.2 percent of losses on dairy, mixed, and other operations, respectively.

c. Percentage of 2010 calf death loss, by cause and by operation type:

	Percent Loss							
	Operation Type							
	Beef		Dairy		Mixed		Other	
Cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Nonpredator	85.0	(0.8)	98.6	(0.2)	96.1	(0.8)	97.8	(0.6)
Predator	15.0	(0.8)	1.4	(0.2)	3.9	(0.8)	2.2	(0.6)
Total	100.0		100.0		100.0		100.0	

Percentage of 2010 calf death loss, by cause and by operation type



A total of 89.4 percent of cattle predator losses and 94.0 percent of calf predator losses occurred on beef operations, which is a reflection of the percentages of cattle and calves inventories on beef operations, and a reflection of the animal rearing environment and associated management practices.

d. Percentage of 2010 cattle and calves **predator** death losses, by type of operation:

Operation type	Percent cattle	Std. error	Percent calves	Std. error
Beef	89.4	(2.4)	94.0	(0.7)
Dairy	3.0	(0.5)	2.8	(0.4)
Mixed	1.0	(0.3)	0.7	(0.2)
Other	6.6	(2.3)	2.5	(0.5)
Total	100.0		100.0	

B. Cattle Death Loss on Beef Operations Due to Predators

Note: With the exception of estimates for all operations, estimates in section B are exclusively for beef operations due to the small number of losses on other types of operations.

1. Predator losses as a proportion of inventory—2010

The proportion of cattle 500 lb or more lost to predator causes by region ranged from 1.1 per 10,000 head in the North Central region to 18.2 per 10,000 in the Southwest region. In four of the six regions, large operations (500 or more head) lost a smaller proportion of inventory to predators than smaller operations (fewer than 100 head), although individual differences were not statistically significant.

Cattle predator death loss on beef operations per 10,000 head of cattle 500 lb or more (January 1 following year inventory), by region and by size of operation:

Number Lost (per 10,000 head*)

Size of Operation (number of cows)

	1–49		50–99		100–499		500 or more		All operations	
Region	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**
North Central	0.5	(0.4)	1.7	(0.7)	1.0	(0.3)	1.2	(0.8)	1.1	(0.2)
Northeast	6.5	(1.5)	5.7	(1.9)	6.2	(2.5)	9.0	(4.5)	6.3	(1.1)
Northwest	10.9	(4.2)	8.6	(4.5)	7.7	(3.4)	3.7	(0.7)	6.7	(1.7)
South Central	13.7	(5.9)	6.5	(1.8)	4.2	(0.8)	2.4	(1.1)	7.2	(1.8)
Southeast	17.4	(3.6)	10.2	(2.6)	12.6	(2.9)	2.7	(0.8)	13.2	(1.8)
Southwest	49.8	(27.4)	25.2	(11.6)	9.9	(2.8)	13.1	(4.5)	18.2	(4.6)

*Cattle 500 lb or more.

2. Cause of predator loss—1991, 1995, 2000, 2005, and 2010

From 1991 to 2010, coyotes, dogs, and mountain lions accounted for the highest individual percentages of predator death loss for cattle on all operations. In 2010, coyotes were responsible for about one-third of predator losses (34.4 percent on all operations and 34.6 percent on beef operations). The single largest cause in the "all other predators" category was unknown predators (see following sections).

a. Percentage of cattle predator death loss by cause and by year:

	Percent Loss							
	All operations					Beef operations		
Predator cause	**1991**	**1995**	**2000**	**2005**	**2010**	**2000**	**2005**	**2010**
Coyotes	37.1	36.1	38.1	32.4	34.4	29.7	31.8	34.6
Dogs	17.6	16.3	23.8	12.9	11.3	17.1	13.4	11.7
Mountain lions[1]	10.1	8.2[2]	14.3	9.4	12.1	10.1	9.1	12.8
All other predators[3]	35.2	39.4	23.8	45.3	42.2	43.1	45.7	40.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1]Also known as cougars, pumas, and panthers. Included bobcats in 2010.
[2]Differs slightly from NASS published data due to rounding.
[3]Bears, bobcats or lynx (except in 2010), foxes, wolves, ravens, eagles, vultures, other predators, and unknown predators.

Losses due to predators for all operations increased from 1.9 per 10,000 head of cattle 500 lb or more in 1991 to 5.1 per 10,000 head in 2010. For beef operations, cattle losses due to predators increased from 3.6 per 10,000 head in 2000 to 7.4 per 10,000 head in 2010.

b. Cattle predator death loss per 10,000 head of cattle over 500 lb (January 1 following year inventory), by cause and by year:

	Number Lost (per 10,000 head[1])							
	All operations					Beef operations		
Predator cause	**1991**	**1995**	**2000**	**2005**	**2010**	**2000[2]**	**2005**	**2010**
Coyotes	0.7	0.9	1.0	1.4	1.8	1.1	1.9	2.6
Dogs	0.3	0.4	0.6	0.5	0.6	0.6	0.8	0.9
Mountain lions[3]	0.2	0.2	0.4	0.4	0.6	0.4	0.5	0.9
All other predators[4]	0.7	1.0	0.6	1.9	2.1	1.5	2.7	3.0
All causes	1.9	2.5	2.6	4.2	5.1	3.6	5.9	7.4

[1]Cattle 500 lb or more.
[2]Estimates adapted to NASS published numbers.
[3]Also known as cougars, pumas, and panthers. Included bobcats in 2010.
[4]Bears, bobcats or lynx (except in 2010), foxes, wolves, ravens, eagles, vultures, other predators, and unknown predators.

3. Cause of predator loss by size of operation—2010

Coyotes accounted for the highest percentage of cattle death losses due to known predators across operation sizes. The percentage of losses due to mountain lions ranged from 8.7 percent on operations with 1 to 49 cows to 21.6 percent of losses on operations with 50 to 99 cows.

a. Percentage of cattle predator death loss on beef operations, by cause and by size of operation:

	Percent Loss							
	Size of Operation (number of cows)							
	1–49		**50–99**		**100–499**		**500 or more**	
Predator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Coyotes	30.5	(4.7)	43.1	(6.0)	36.2	(4.9)	35.4	(10.1)
Dogs	13.9	(3.3)	13.0	(3.4)	9.6	(2.3)	4.6	(1.5)
Mountain lions[1]	8.7	(3.6)	21.6	(7.0)	13.2	(4.0)	16.8	(5.3)
Other predators[2]	15.5	(3.0)	12.1	(3.2)	17.0	(3.2)	13.5	(3.2)
Unknown predators	31.4	(7.7)	10.2	(2.9)	24.0	(7.0)	29.7	(8.1)
Total	100.0		100.0		100.0		100.0	

[1]Included bobcats.
[2]Bears, foxes, wolves, ravens, eagles, vultures, and other predators.

Operations with 1 to 49 cows had 12.8 losses per 10,000 head of cattle 500 lb or more due to all predator causes compared with 4.3 losses per 10,000 head on operations with 500 or more cows.

b. Cattle predator death loss on beef operations per 10,000 head of cattle 500 lb or more (January 1 following year inventory), by cause and by size of operation:

	Number Lost (per 10,000 head[1])							
	Size of Operation (number of cows)							
	1–49		**50–99**		**100–499**		**500 or more**	
Predator cause	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**
Coyotes	3.9	(0.7)	3.0	(0.6)	1.9	(0.3)	1.5	(0.6)
Dogs	1.8	(0.4)	0.9	(0.2)	0.5	(0.1)	0.2	(0.1)
Mountain lions[2]	1.1	(0.6)	1.5	(0.6)	0.7	(0.2)	0.7	(0.2)
Other predators[3]	2.0	(0.5)	0.8	(0.2)	0.9	(0.2)	0.6	(0.1)
Unknown predators	4.0	(1.5)	0.7	(0.2)	1.3	(0.5)	1.3	(0.4)
All predator causes	12.8	(2.8)	6.9	(1.1)	5.3	(0.7)	4.3	(0.8)

[1]Cattle 500 lb or more.
[2]Included bobcats.
[3]Bears, foxes, wolves, ravens, eagles, vultures, and other predators.

4. Cause of predator loss by region—2010

Coyotes accounted for the highest percentage of losses in the North Central, Northeast, and Southeast regions.

a. Percentage of cattle predator death loss on beef operations, by cause and by region:

	Percent Loss											
	Region											
	North Central		**Northeast**		**Northwest**		**South Central**		**Southeast**		**Southwest**	
Predator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Coyotes	64.2	(10.2)	47.0	(6.0)	17.6	(6.6)	30.5	(4.0)	49.9	(5.5)	24.4	(8.1)
Dogs	4.7	(4.5)	7.0	(1.6)	0.3	(0.3)	17.0	(3.9)	21.5	(4.4)	1.7	(0.9)
Mountain lions	20.2	(9.1)	1.6	(1.5)	4.4	(1.8)	16.3	(3.2)	0.2	(0.1)	28.1	(9.1)
Other predators	6.1	(3.5)	20.6	(4.8)	31.8	(9.1)	13.4	(2.4)	12.5	(3.5)	11.6	(4.6)
Unknown predators	4.8	(3.7)	23.8	(6.7)	45.9	(13.8)	22.8	(2.8)	15.9	(5.7)	34.2	(15.1)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

Losses due to all predator causes ranged from 1.1 per 10,000 head of cattle 500 lb or more in the North Central region to 18.2 per 10,000 head in the Southwest region. Interestingly, the Northwest region was the only region in which coyotes were not among the leading causes of predator loss.

b. Cattle predator death loss on beef operations per 10,000 head of cattle 500 lb or more (January 1 following year inventory), by cause and by region:

	Number Lost (per 10,000 head*)											
	Region											
	North Central		**Northeast**		**Northwest**		**South Central**		**Southeast**		**Southwest**	
Predator	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**
Coyotes	0.7	(0.2)	3.0	(0.6)	1.2	(0.4)	2.2	(0.5)	6.6	(1.0)	4.4	(1.4)
Dogs	0.1	(0.1)	0.4	(0.1)	0.0	(0.0)	1.2	(0.3)	2.8	(0.7)	0.3	(0.2)
Mountain lions	0.2	(0.1)	0.1	(0.1)	0.2	(0.1)	1.7	(1.6)	0.0	(0.0)	5.0	(1.6)
Other predators	0.1	(0.0)	1.3	(0.4)	2.1	(0.4)	1.0	(0.3)	1.6	(0.5)	2.1	(0.8)
Unknown predators	0.1	(0.0)	1.5	(0.5)	3.1	(1.6)	1.6	(0.5)	2.1	(0.9)	6.2	(4.0)
All predator causes	1.1	(0.2)	6.3	(1.1)	6.7	(1.7)	7.2	(1.8)	13.2	(1.8)	18.2	(4.6)

*Cattle 500 lb or more.

C. Calf Death Loss on Beef Operations Due to Predators

Note: With the exception of estimates for all operations, estimates in section C are exclusively for beef operations due to the small number of losses on the other types of operations.

1. Predator losses as a proportion of calves born—2010

Regional calf predator losses ranged from 18.7 per 10,000 calves born in the North Central region to 105.3 per 10,000 calves born in the Southwest region. The North Central region had the lowest calf predator loss in all size categories.

a. Calf predator death loss on beef operations per 10,000 calves born, by region and by size of operation:

	Number Lost (per 10,000 calves born*)									
	Size of Operation (number of cows)									
	1–49		**50–99**		**100–499**		**500 or more**		**All operations**	
Region	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**	**No.**	**Std. error**
North Central	24.9	(5.5)	24.4	(5.5)	17.5	(2.1)	10.2	(3.0)	18.7	(1.8)
Northeast	89.8	(14.1)	54.4	(9.7)	68.5	(10.1)	63.2	(14.0)	76.6	(8.2)
Northwest	82.4	(22.3)	48.8	(12.7)	40.4	(5.2)	48.3	(4.2)	47.5	(3.8)
South Central	100.0	(29.5)	52.1	(8.0)	48.1	(5.9)	43.9	(6.7)	64.1	(9.4)
Southeast	105.2	(12.4)	94.1	(16.1)	71.5	(7.4)	73.4	(8.9)	90.1	(6.5)
Southwest	199.6	(49.5)	128.9	(33.5)	87.6	(13.4)	76.8	(8.3)	105.3	(10.2)

*All calves born on beef operation.

2. Cause of predator loss—1991, 1995, 2000, 2005, and 2010

Coyotes were the single largest cause of predator losses in calves on all operations from 1991 to 2010. However, the percentage of all calf losses attributable to coyotes decreased from 66.3 percent in 1991 to 57.2 percent in 2010. The percentage of losses due to dogs declined from 18.6 percent in 1991 to 9.6 percent in 2010 for all operations. The percentage of calves lost because of "other" predators increased from 9.9 to 25.4 percent on all operations and from 19.5 to 25.4 percent on beef operations from 2000 to 2010.

a. Percentage of calf predator death loss, by cause and by year:

	Percent Loss							
	All operations—for comparison					Beef operations		
Predator cause	**1991**	**1995**	**2000**	**2005**	**2010**	**2000**	**2005**	**2010**
Coyotes	66.3	64.1	69.1[1]	55.1	57.2	60.8	53.7	56.9
Dogs	18.6	19.1	16.7	11.2	9.6	14.3	11.2	9.7
Mountain lions[2]	5.2	6.6[1]	6.3	7.4	7.8	5.4	7.7	8.0
All other predators[3]	9.9	10.2	7.9	26.3	25.4	19.5	27.4	25.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1]Differs slightly from NASS published data due to rounding.
[2]Also known as cougars, pumas, and panthers. Included bobcats in 2010.
[3]Bears, bobcats or lynx (except in 2010), foxes, wolves, ravens, eagles, vultures, other predators, and unknown predators.

Predator losses in calves on all operations increased from 23.4 per 10,000 calves born in 1991 to 50.5 per 10,000 in 2010. For beef operations, calf losses increased from 37.8 per 10,000 calves born in 2000 to 61.7 per 10,000 calves in 2010.

b. Calf predator death loss per 10,000 calves born, by cause:

	Number Lost (per 10,000 calves born[1])							
	All operations					**Beef operations**		
Predator cause	**1991**	**1995**	**2000**	**2005**	**2010**	**2000[2]**	**2005**	**2010**
Coyotes	15.5	15.3	22.5	22.9	28.9	23.1	26.6	35.1
Dogs	4.4	4.6	5.4	4.6	4.9	5.3	5.5	6.0
Mountain lions[3]	1.2	1.6	2.1	3.1	3.9	2.1	3.8	5.0
All other predators[4]	2.3	2.4	2.6	10.9	12.8	7.3	13.7	15.6
Total	23.4	23.9	32.6	41.5	50.5	37.8	49.6	61.7

[1]All calves born on beef operation.
[2]Estimates adapted to NASS published numbers.
[3]Also known as cougars, pumas, and panthers. Included bobcats in 2010.
[4]Bears, bobcats or lynx (except in 2010), foxes, wolves, ravens, eagles, vultures, other predators, and unknown predators.

3. Cause of predator loss by size of operation—2010

The percentages of calf death losses due to each of the listed causes were relatively consistent across operation sizes.

a. Percentage of calf predator death loss on beef operations, by cause and by size of operation:

	Percent Loss							
	Size of Operation (number of cows)							
	1–49		**50–99**		**100–499**		**500 or more**	
Predator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Coyotes	57.7	(3.1)	55.7	(3.2)	56.9	(2.8)	55.4	(2.3)
Dogs	9.1	(0.9)	13.0	(2.9)	9.9	(2.1)	6.0	(0.7)
Mountain lions[1]	6.7	(1.2)	7.1	(1.3)	9.9	(1.4)	9.8	(1.0)
Other predators[2]	14.7	(1.5)	15.2	(1.8)	16.3	(1.6)	18.0	(1.7)
Unknown predators	11.8	(1.3)	9.0	(1.4)	7.0	(0.8)	10.8	(1.4)
Total	100.0		100.0		100.0		100.0	

[1]Included bobcats.
[2]Bears, foxes, wolves, ravens, eagles, vultures, and other predators.

Losses due to most predator causes showed a clear trend across herd sizes. Operations with 1 to 49 cows had the highest losses from all predator causes, with 95.3 losses per 10,000 calves born.

b. Calf predator death loss on beef operations per 10,000 calves born, by cause and by size of operation:

	Number Lost (per 10,000 calves born[1])							
	Size of Operation (number of cows)							
	1–49		**50–99**		**100–499**		**500 or more**	
Predator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Coyotes	55.0	(6.4)	31.6	(3.0)	26.5	(2.1)	25.8	(1.9)
Dogs	8.7	(1.4)	7.4	(1.9)	4.6	(1.1)	2.8	(0.4)
Mountain lions[2]	6.3	(1.9)	4.0	(0.8)	4.6	(0.7)	4.6	(0.6)
Other predators[3]	14.0	(2.8)	8.6	(1.2)	7.6	(0.8)	8.4	(0.9)
Unknown predators	11.2	(2.0)	5.1	(0.8)	3.3	(0.4)	5.0	(0.7)
All predator causes	95.3	(12.9)	56.8	(4.8)	46.5	(3.0)	46.6	(2.8)

[1]All calves born on beef operation.
[2]Included bobcats.
[3]Bears, foxes, wolves, ravens, eagles, vultures, and other predators.

4. Cause of predator loss by region—2010

Coyotes accounted for the highest percentage of calf predator losses across all regions. Dogs accounted for a higher percentage of losses in the South Central and Southeast regions than in the other regions.

a. Percentage of calf predator death loss on beef operations, by cause and by region:

	Percent Loss											
	Region											
	North Central		**Northeast**		**Northwest**		**South Central**		**Southeast**		**Southwest**	
Predator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Coyotes	71.7	(4.3)	73.6	(3.6)	48.5	(3.9)	42.8	(1.4)	65.8	(3.1)	66.5	(4.5)
Dogs	2.1	(1.7)	6.0	(1.6)	1.2	(0.7)	14.0	(1.7)	12.6	(2.6)	5.9	(1.5)
Mountain lions	9.8	(3.2)	0.5	(0.4)	6.8	(1.1)	12.9	(1.0)	0.4	(0.1)	12.5	(2.4)
Other predators	10.2	(2.7)	12.3	(2.6)	29.2	(3.4)	18.2	(1.0)	13.8	(1.8)	7.8	(1.8)
Unknown predators	6.2	(1.7)	7.6	(1.9)	14.3	(2.7)	12.1	(0.8)	7.4	(1.7)	7.3	(1.8)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

Calf losses due to coyotes ranged from 13.4 per 10,000 calves born in the North Central region to 70.1 per 10,000 calves born in the Southwest region. Mountain lions accounted for 13.2 losses per 10,000 calves born in the Southwest region.

b. Calf predator death loss on beef operations per 10,000 calves born, by cause and by region:

	Number Lost (per 10,000 calves born*)											
	Region											
	North Central		**Northeast**		**Northwest**		**South Central**		**Southeast**		**Southwest**	
Predator cause	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Coyotes	13.4	(1.5)	56.3	(7.5)	23.1	(2.4)	27.5	(3.8)	59.3	(5.2)	70.1	(10.1)
Dogs	0.4	(0.3)	4.6	(1.3)	0.6	(0.3)	9.0	(1.5)	11.4	(2.5)	6.2	(1.5)
Mountain lions	1.8	(0.6)	0.4	(0.3)	3.2	(0.6)	8.3	(1.5)	0.4	(0.1)	13.2	(2.4)
Other predators	1.9	(0.5)	9.4	(2.0)	13.9	(2.2)	11.7	(2.1)	12.4	(1.6)	8.2	(1.8)
Unknown predators	1.2	(0.3)	5.8	(1.4)	6.8	(1.4)	7.7	(1.3)	6.6	(1.6)	7.7	(1.8)
All predator causes	18.7	(1.8)	76.6	(8.2)	47.5	(3.8)	64.1	(9.4)	90.1	(6.5)	105.3	(10.2)

*All calves born on beef operation.

D. Nonlethal Predator Control on Beef Operations

Note: With the exception of estimates for all operations, estimates in section D are exclusively for beef operations due to the small number of losses on the other types of operations.

1. Frequency of use

The percentage of all operations that used any nonlethal predator control methods increased from 3.1 percent in 2000 to 11.3 percent in 2010. In 2000, beef operations were slightly more likely than all operations to use nonlethal methods, although this difference has been diminishing. Most methods showed an increase in usage. The methods used most frequently were guard animals, fencing, culling, and frequent checks.

a. Percentage of operations that used a nonlethal predator control method, by method used:

	Percent Operations											
	All operations*						Beef operations					
	2000		2005		2010		2000		2005		2010	
Nonlethal control method	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**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)	2.1	(0.2)	3.2	(0.2)	4.7	(0.3)
Fencing	1.1	(0.1)	2.5	(0.2)	3.8	(0.2)	2.0	(0.2)	2.8	(0.2)	3.8	(0.3)
Herding	0.2	(0.0)	0.3	(0.1)	0.6	(0.1)	0.3	(0.1)	0.3	(0.1)	0.7	(0.1)
Night penning	0.3	(0.0)	0.5	(0.1)	0.8	(0.1)	0.4	(0.1)	0.6	(0.1)	0.7	(0.1)
Fright tactics	0.2	(0.2)	0.2	(0.0)	0.3	(0.1)	0.4	(0.1)	0.2	(0.0)	0.3	(0.1)
Carcass removal	0.8	(0.1)	1.3	(0.1)	2.5	(0.1)	1.1	(0.1)	1.5	(0.1)	2.9	(0.2)
Culling	—	(—)	1.6	(0.1)	3.0	(0.2)	—	(—)	2.0	(0.1)	3.6	(0.2)
Frequent checks	—	(—)	1.8	(0.1)	3.7	(0.3)	—	(—)	2.1	(0.1)	4.1	(0.3)
Other	0.3	(0.1)	0.5	(0.1)	0.8	(0.1)	0.6	(0.1)	0.6	(0.1)	0.8	(0.1)
Any methods	3.1	(0.2)	7.5	(0.3)	11.3	(0.4)	5.4	(0.3)	8.6	(0.3)	12.4	(0.4)

*Data on nonlethal predator control methods were not collected in 1991 and 1995.

More than 1 of 10 beef operations (12.4 percent) used some type of nonlethal predator control method. The most common nonlethal method was guard animals, followed by frequent checks, fencing, and culling. Operations with 500 head or more were more likely to use any nonlethal predator control method than smaller operations.

b. Percentage of beef operations by nonlethal predator control method used in 2010, and by size of operation:

	Percent Operations							
	Size of Operation (number of cows)							
	1–49		**50–99**		**100–499**		**500 or more**	
Nonlethal control method	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Guard animals	4.8	(0.3)	4.4	(0.6)	4.5	(0.5)	3.9	(0.7)
Fencing	4.1	(0.3)	3.1	(0.5)	2.2	(0.3)	1.6	(0.4)
Herding	0.7	(0.1)	0.9	(0.4)	1.2	(0.3)	1.9	(0.4)
Night penning	0.7	(0.1)	0.3	(0.1)	1.1	(0.3)	0.9	(0.3)
Fright tactics	0.3	(0.1)	0.3	(0.1)	0.8	(0.2)	1.2	(0.4)
Carcass removal	2.3	(0.2)	3.6	(0.4)	6.8	(0.7)	8.7	(1.5)
Culling	2.9	(0.2)	5.3	(0.6)	7.5	(0.6)	9.0	(0.9)
Frequent checks	3.7	(0.3)	4.1	(0.5)	7.0	(0.5)	10.2	(1.5)
Other	0.7	(0.1)	1.0	(0.2)	1.5	(0.6)	0.9	(0.3)
Any methods	11.9	(0.5)	13.2	(0.9)	15.1	(1.0)	16.5	(1.7)

c. Percentage of beef operations by nonlethal predator control method used in 2010, and by region:

	Percent Operations											
	Region											
	North Central		Northeast		Northwest		South Central		Southeast		Southwest	
Nonlethal control method	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Guard animals	4.4	(0.8)	3.4	(0.4)	4.5	(1.0)	4.4	(0.5)	7.0	(0.7)	4.4	(1.0)
Fencing	2.7	(0.5)	5.1	(0.6)	4.1	(1.2)	2.4	(0.5)	4.8	(0.6)	5.8	(1.4)
Herding	0.2	(0.1)	0.6	(0.2)	1.4	(0.4)	0.5	(0.2)	0.6	(0.2)	3.4	(0.5)
Night penning	0.5	(0.1)	0.8	(0.2)	1.2	(0.4)	0.3	(0.1)	0.3	(0.2)	3.2	(1.2)
Fright tactics	0.4	(0.1)	0.3	(0.1)	1.1	(0.5)	0.3	(0.1)	0.1	(0.0)	0.2	(0.1)
Carcass removal	3.2	(0.4)	2.3	(0.3)	3.6	(0.6)	1.7	(0.2)	5.2	(0.5)	2.5	(0.9)
Culling	4.0	(0.6)	2.9	(0.4)	3.4	(0.5)	3.5	(0.4)	5.1	(0.5)	1.7	(0.5)
Frequent checks	4.0	(0.5)	3.1	(0.4)	5.8	(0.9)	2.6	(0.4)	6.4	(0.6)	7.1	(2.1)
Other	1.0	(0.3)	0.8	(0.2)	1.7	(0.6)	0.6	(0.2)	0.7	(0.2)	1.6	(0.9)
Any methods	9.8	(1.0)	11.1	(0.8)	15.2	(1.7)	10.3	(0.8)	16.1	(0.9)	17.7	(2.4)

2. Operations that used nonlethal predator control methods

Of beef operations that used nonlethal predator control methods, about one-third used the following methods: guard animals (37.9 percent), fencing (31.0 percent), culling (29.2 percent), and frequent checks (33.1 percent).

a. For the 11.3 percent of all operations and the 12.4 percent of beef operations that used a nonlethal predator control method in 2010, percentage of operations by control method used:

	Percent Operations					
	All operations*			Beef operations		
Nonlethal control method	**2000**	**2005**	**2010**	**2000**	**2005**	**2010**
Guard animals	27.7	38.0	36.9	37.9	37.6	37.9
Fencing	29.9	34.0	32.8	36.4	32.0	31.0
Herding	7.4	3.8	5.3	5.3	4.0	6.0
Night penning	10.8	9.7	6.6	8.0	6.7	5.4
Fright tactics	6.8	3.0	2.5	7.3	2.9	2.5
Carcass removal	40.4	16.5	23.9	20.6	17.5	23.0
Culling	NA	19.6	28.9	NA	22.8	29.2
Frequent checks	NA	21.8	32.1	NA	24.9	33.1
Other	11.3	6.2	7.0	10.7	6.6	6.7

*NASS Cattle Predator Loss—2000, May 4, 2001; NASS Cattle Predator Loss—2005, May 5, 2006; NASS Cattle Predator Loss—2010, May 12, 2011.

Only 12.4 percent of beef operations used a nonlethal control method during 2010. Of these operations, the percentage that used guard animals decreased as operation size increased. Conversely, the percentage of operations that used carcass removal, culling, or frequent checks increased as operations size increased.

b. For the 12.4 percent of beef operations that used a nonlethal predator control method in 2010, percentage of operations by control method used and by size of operation:

	Percent Operations									
	Size of Operation (number of cows)									
	1–49		50–99		100–499		500 or more		All operations	
Nonlethal control method	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Guard animals	39.8	(2.2)	33.4	(3.6)	29.9	(3.1)	23.6	(3.9)	37.9	(1.8)
Fencing	34.6	(2.2)	23.6	(3.2)	14.6	(1.9)	9.8	(2.3)	31.0	(1.8)
Herding	5.6	(0.7)	6.6	(2.7)	7.7	(1.6)	11.4	(2.3)	6.0	(0.7)
Night penning	5.7	(1.1)	2.1	(0.7)	7.1	(1.9)	5.2	(1.6)	5.4	(0.8)
Fright tactics	2.1	(0.6)	2.4	(0.9)	5.0	(1.0)	7.1	(2.4)	2.5	(0.5)
Carcass removal	19.0	(1.5)	27.4	(3.0)	45.0	(3.5)	53.1	(5.2)	23.0	(1.3)
Culling	24.4	(1.8)	40.1	(3.7)	49.9	(3.5)	54.4	(5.6)	29.2	(1.5)
Frequent checks	31.4	(2.2)	31.0	(3.4)	46.1	(3.3)	62.2	(4.7)	33.1	(1.8)
Other	6.2	(1.0)	7.5	(1.7)	9.8	(3.6)	5.4	(1.6)	6.7	(0.9)

Of the 12.4 percent of beef operations that used a nonlethal predator control method, almost one-half (46.3 percent) in the Northeast region used fencing compared with about one-fourth of operations in the South Central region (23.1 percent). Culling was less frequently used in the Southwest region (9.8 percent) than in the other regions.

c. For the 12.4 percent of beef operations that used a nonlethal predator control method in 2010, percentage of operations by control method used and by region:

	Percent Operations											
	Region											
	North Central		Northeast		Northwest		South Central		Southeast		Southwest	
Nonlethal control method	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Guard animals	44.7	(5.8)	30.6	(3.3)	29.4	(5.6)	42.4	(3.9)	43.3	(3.2)	24.7	(5.4)
Fencing	27.6	(4.5)	46.3	(3.6)	27.1	(6.1)	23.1	(3.8)	29.9	(3.0)	32.9	(6.7)
Herding	2.1	(0.8)	5.5	(1.4)	9.0	(2.5)	4.7	(1.5)	3.5	(1.2)	19.0	(3.4)
Night penning	4.9	(1.3)	7.6	(1.8)	8.0	(2.9)	2.7	(1.1)	2.0	(1.0)	18.1	(6.8)
Fright tactics	4.1	(1.3)	2.4	(1.1)	7.3	(3.0)	3.0	(1.2)	0.7	(0.3)	0.9	(0.5)
Carcass removal	33.1	(4.5)	20.5	(2.6)	23.7	(3.9)	16.3	(2.3)	32.3	(2.8)	14.4	(4.8)
Culling	41.0	(5.3)	26.1	(2.9)	22.2	(3.4)	33.8	(3.4)	31.5	(2.8)	9.8	(2.7)
Frequent checks	41.4	(5.1)	28.3	(3.3)	38.2	(5.3)	25.1	(3.2)	39.6	(3.1)	40.0	(9.4)
Other	10.4	(2.7)	7.3	(1.7)	11.0	(3.7)	5.6	(1.6)	4.4	(1.3)	9.3	(4.8)

Of beef operations that used a nonlethal predator control method, 80.8 percent used only one nonlethal predator control method in 2000 compared with 58.2 percent of operations in 2010. The percentage of beef operations that used more than one nonlethal predator control method doubled from 2000 to 2010, from 19.2 percent of operations in 2000 to 41.8 percent of operations in 2010.

d. For the 11.3 percent of all operations and the 12.4 percent of beef operations that used a nonlethal predator control method in 2010, percentage of operations by number of methods used:

	Percent Operations											
	All operations						Beef operations					
	2000		2005		2010		2000		2005		2010	
Number of control methods used	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
1	80.6	(2.1)	68.3	(1.7)	58.6	(1.9)	80.8	(2.6)	67.9	(1.7)	58.2	(1.8)
2	13.4	(2.0)	15.9	(1.2)	21.1	(1.5)	13.9	(2.4)	16.0	(1.3)	19.7	(1.5)
3	4.3	(0.8)	11.2	(1.2)	11.9	(1.0)	4.0	(1.0)	11.3	(1.1)	13.2	(1.2)
4	1.2	(0.4)	3.0	(0.5)	6.3	(0.7)	1.1	(0.5)	3.3	(0.5)	6.6	(0.7)
5 or more	0.5	(0.2)	1.6	(0.4)	2.1	(0.4)	0.2	(0.1)	1.5	(0.4)	2.3	(0.4)
Total	100.0		100.0		100.0		100.0		100.0		100.0	

Section III: Methodology

A. Cattle and Calf Death Loss Estimates

1. Survey procedures

A random sample of U.S. cattle producers was surveyed to provide data for these estimates. Survey procedures ensured that all producers (except those in Alaska) had an opportunity to participate in the survey, regardless of operation size. Large operations were sampled more heavily than small operations. Data were collected from about 77,000 producers in 1991, 50,000 in 1996, 50,000 in 2001, 50,000 in 2006, and 40,000 in 2011. Surveys were conducted during the first half of January by mail, telephone, and face-to-face interviews. During the respective years, producers were asked to report death losses for cattle and calves for the 1991, 1995, 2000, 2005, and 2010 calendar years and the January 1, 1992, 1996, 2001, 2006, and 2011 cattle and calf inventories by class.

Based on the original data collected during January, the NASS "Cattle and Calves Death Loss" report was issued in May 1992, May 1996, May 2006, and May 2011. The NASS "Cattle Predator Loss" report was published in May 2001. These reports contained data for death loss by cause, including predator losses and losses from other causes. These estimates were on State and regional levels. The NASS "Cattle" report was issued in February 1992, February 1996, January 2001, January 2006, and January 2011 and contained January 1 inventory estimates.

Data in the reports mentioned above as well as additional summaries from the original data provided estimates for this report. The original data were resummarized to break-out the losses by class of operation and by size group based on reported inventory. The operation classes included beef cattle, dairy cattle, mixed, and "other" cattle operations. These classes and size groups are further defined in Terms Used in This Report.

2. Estimation procedures

Estimates of total death loss and death loss by cause were prepared by the Livestock, Dairy and Poultry Branch, NASS, and the National Animal Health Monitoring System, APHIS. Total cattle and calf death losses from all causes were published in NASS's 1991, 1995, 2000, 2005, and 2010 "Meat Animal Production, Disposition, and Income" reports, released in April 1992, April 1996, April 2001, April 2006, and April 2010. Breakdowns by cause of loss and value of loss were published in the NASS "Cattle and Calves Death Loss" reports issued in May 1992, May 1996, May 2006, and May 2011. Only the NASS "Cattle Predator Loss" report was issued in May 2001.

3. Reliability

Since all cattle producers are not included in the sample, survey estimates are subject to sampling variability. Survey results also are subject to nonsampling errors such as omissions, duplications, and mistakes in reporting, recording, and processing data. The effects of these nonsampling errors cannot be measured directly. They are minimized through rigid quality controls in the data collection process and through a careful review of all reported data for consistency and reasonableness.

4. Revision

Revisions to previous estimates of total death losses are made to improve the current estimates. Previous-year estimates are subject to revision when current estimates are made. Estimates for losses from all causes are subject to revision in the following year's "Meat Animals, Production, Disposition, and Income" report.

Appendix I: U.S. Populations and Operations*

Number of Cattle and Calves on January 1, 2011, and Number of Operations in 2007

	State	Number cattle and calves (1,000 head)	Number operations
North Central	Iowa	3,900	31,000
	Minnesota	2,360	26,000
	Nebraska	6,450	24,000
	North Dakota	1,690	11,700
	South Dakota	3,650	17,000
	Total	18,050	109,700
Northeast	Connecticut	49	1,100
	Delaware	19	420
	Illinois	1,070	19,800
	Indiana	860	19,000
	Kentucky	2,150	45,000
	Maine	86	1,700
	Maryland	200	4,000
	Massachusetts	41	1,100
	Michigan	1,110	14,400
	New Hampshire	35	850
	New Jersey	31	1,500
	New York	1,410	14,700
	Ohio	1,280	27,000
	Pennsylvania	1,610	28,000
	Rhode Island	5	220
	Vermont	260	2,500
	Virginia	1,490	25,000
	West Virginia	390	12,500
	Wisconsin	3,400	36,000
	Total	15,496	254,790
Northwest	Idaho	2,220	10,400
	Montana	2,500	12,600
	Oregon	1,300	15,300
	Washington	1,110	13,000
	Wyoming	1,360	5,800
	Total	8,490	57,100
South Central	Arkansas	1,670	30,000
	Kansas	6,100	32,000
	Missouri	3,900	64,000
	Oklahoma	4,500	56,000
	Texas	11,900	150,000
	Total	28,070	332,000
Southeast	Alabama	1,210	25,000
	Florida	1,710	18,800
	Georgia	1,020	21,000
	Louisiana	790	14,500
	Mississippi	950	21,000
	North Carolina	810	21,000
	South Carolina	370	10,000
	Tennessee	1,970	48,000
	Total	8,830	179,300
Southwest	Arizona	920	2,600
	California	5,350	17,000
	Colorado	2,750	12,900
	Hawaii	140	800
	Nevada	470	1,600
	New Mexico	1,390	7,600
	Utah	800	7,000
	Total	11,820	49,500
Total (49 States)		90,756	982,390
Total U.S. (50 States)		90,769	982,510

*Source: NASS Cattle, 2012; NASS Farms, Land in Farms and Livestock Operations, 2007.