

**State of California
The Natural Resources Agency
Department of Fish and Wildlife**

**2012 CALIFORNIA
BEAR TAKE REPORT**

September 27, 2013



**Prepared by:
Marc Kenyon, Sr. Environmental Scientist
Wildlife Branch
1812 Ninth Street
Sacramento, CA 95811**

Executive Summary

The 2012 California black bear hunting season resulted in 1,962 bears taken, representing an 11.1% increase from the 2011 season. A total of 24,872 bear tags were issued. Overall hunter success was 7.9%. The bear hunting season closed December 18, 2012, making it the first season in three years that the bear season closed early. The top five counties for reported take were: Siskiyou (9.8%), Shasta (9.1%), Trinity (8.7%), Humboldt (6%) and El Dorado (4.4%).

Of the returned harvest report tags, 38% (742) indicated a female was taken. Of bear hunters who reported effort, approximately 87% (1,279) indicated they spent less than 7 days in pursuit of bear. According to returned harvest report tags, approximately 42% (827) of all bears taken were taken with the assistance of dogs, whereas 48% (940) were not taken with the assistance of dogs; 10% (195) of returned harvest report tags lacked a response. Lastly, less than 0.5% of all bears taken were killed with the assistance of guides.

A premolar tooth was removed from nearly all hunter-killed bears for age determination, which is used to estimate the total population size within the bear hunt zones. According to the analyses, the Department estimates approximately 34,002 ($\pm 5,561$) bears inhabited the area encompassed by the black bear hunting zones prior to the start of the 2012 bear hunting season (Figure 1).

Introduction

The primary goal of the California Department of Fish and Wildlife's black bear management program is to maintain a viable and healthy black bear population. To attain this goal, the Department manages bears in accordance with the Black Bear Management Plan (1998), which provides guidance for balancing the needs of this species with the diverse economic and recreational needs of the people of California. This plan was developed in accordance with the State's policy regarding wildlife resources (Fish and Game Code section 1801), which states the following goals:

- a) to provide for the beneficial use and enjoyment of wildlife by all citizens of the state;
- b) to perpetuate all species for their intrinsic and ecological values;
- c) to provide for aesthetic, educational, and nonappropriative uses;
- d) to maintain diversified recreational uses of wildlife including sport hunting;
- e) to provide for economic contributions to the citizens of the state through the recognition that wildlife is a renewable resource; and
- f) to alleviate economic losses or public health and safety problems caused by wildlife.

In order for the State to meet these goals, the Legislature has delegated the power to regulate the take and possession of bears, among other wildlife, to the California Fish and Game Commission. The Commission, in consultation with Department of Fish and Wildlife staff, reviews the factors which may affect the long-term health and viability of the black bear population. These factors are presented in the Black Bear Management Plan as a monitoring matrix (see Table 1), and the results of such monitoring are presented herein.

In 1957, the Commission initiated a tag reporting system for black bears in order to closely monitor the state's bear population. The black bear harvest tag reporting system enables the Department to collect harvest attributes via a self-administered questionnaire in order to monitor the bear population and the behavior of bear hunters in California. Since 1982, all bear tag holders have been required to return their bear harvest report tags to the Department whether or not they successfully take a black bear. The data obtained from these harvest tag reports comprise a substantial portion of this report.

In addition to the data derived from the returned harvest report tags, the Department relies on the age of bears taken during the season to develop population indices. The age-at-harvest data provide insight to the age structure of bears taken during the season. Furthermore, the Department relies on a population estimation model which uses age-at-harvest and sex ratio data to develop a population index to monitor trends. Age data are obtained from extracting a tooth from hunter-killed bears. The results of these analyses are also presented in this report.

Summary of 2012 Bear Hunting Regulations

The general bear season opened concurrently with the opening day of the general deer season in the A, B, C, D, X-8, X9a, X-9b, X-10 and X-12 deer hunting zones. In the remaining portions of the State where bear hunting was allowed, the general bear season opened on the second Saturday in October. The general bear season was to close when the Department received report of 1,700 bears taken, or on December 30, whichever occurred first. Additionally, persons possessing a valid bear tag were able to hunt during a 23-day archery-only season.

There was no limit on bear tag sales. The bag and possession limit was one bear per hunter. Bear cubs (bears weighing less than 50 pounds) and females with cubs were prohibited from harvest. The use of dogs to take bear was unlawful during the bear archery season. The use of more than one dog to take bear was prohibited in areas where the general deer season was open. Dogs used for trailing bears during the general season were allowed to be equipped with VHF collars but not GPS-enabled collars or treeing (aka “tip”) switches.

Results

Season Length

The 2012 archery bear hunting season opened statewide on August 18 and ended on September 9. The general bear hunting season opened concurrently with general deer hunting season in the A, B, C, D, X8, X9A, X9B, X10 and X12 deer hunting zones. In the remaining deer hunting X zones, bear season commenced October 13. The bear season closed on December 18 pursuant to California Code of Regulations, Title 14, section 365, making it the first season in three years that the bear season closed early.

Tag Sales

In all, 24,872 bear hunting tags were sold. This total consisted of 24,625 resident bear tags and 247 non-resident bear tags. Total bear tag sales in 2012 was 1.27% less than 2011 bear tag sales and 3.9% more than the previous ten years' average.

Total Take and Sex Composition

In total, 1,962 bears were taken during the 2012 black bear hunting season. Although the 2012 bear take was 11% greater than hunt year 2011 (Figure 2), it does not statistically differ from the previous three years' average take of 1722 bears ($P = 0.41867$, $df = 2$). Of the 1,962 bears taken, 1206 (61%) were male, 742 (38%) were female, and 14 (1%) harvest report tags did not report sex (Figure 3).

Hunter Effort

Similar to 2011, most bear hunters who were successful in harvesting a bear spent a week or less afield (Figure 4). Exactly one-half (50%) of all successful hunters reported having spent a day or less in the field; 37% of successful hunters spent from 2 to 7 days in the field and the remaining 13% spent 8 or more days in the field. Overall, successful hunters spent 3.87 days in the field before harvesting a bear.

Methods of Take

California bear hunters use various methods to harvest bear. Overall, the use of rifles accounted for 87% of the bear harvest, followed by archery equipment (7.5%), pistol (3.5%), and shotgun (1.5%). Muzzleloader or crossbow use comprised the remaining 0.5% of the total bear harvest. Individuals using a rifle, archery equipment or a shotgun spent, on average, 4 days in the field before taking a bear, whereas individuals using a pistol spent 5 days and individuals using muzzleloaders or crossbows spent 1.5 and 8 days in the field, respectively.

In 2012, 42% of returned bear harvest tags indicated bears were taken with the assistance of dogs (Figure 5), whereas 48% of bears were reportedly taken without using dogs; 10% did not report. On average, hound hunters (individuals who reported taking a bear with the assistance of dogs) spent 4.4 days in the field before taking a bear, compared to 3.7 days for non-hound hunters. This disparity in effort likely reflects hound-hunters' self-reported propensity to tree multiple bears before taking one; however the Department does not currently collect the data to confirm this assertion. Lastly, 88% of hound hunters took a bear with a rifle, 7% used a pistol, 4% used archery equipment, and 1% used a shotgun. This is in contrast to non-hound hunters, 86% of whom took a bear with a rifle, 11% used archery equipment, and the remaining 3% used a pistol, shotgun or muzzleloader.

In 2012, a new state law was passed that makes the use of dogs unlawful for taking bear. This law takes effect beginning January 1, 2013. The last bear lawfully taken with the assistance of dogs in California was an 11 year old male bear in Trinity County on December 18, 2012.

Similarly to previous years, hunters who took a bear while deer hunting accounted for approximately one-third of the total harvest (Table 2); only 3% of these hunters reportedly used archery equipment. More than 66% of hunters took their bear while only bear hunting and 4% of these hunters used archery equipment. Of all bear hunters reporting successful take, 5 (0.3%) reported the use of a guide.

Timing of Take

Bears were predominantly harvested in October (Figure 6), most likely due to hound use restrictions. Similar to previous years, the number of bears harvested in November and December were less than the month previous, reflecting decreasing bear availability due to inclement weather and denning chronology.

Location

Northern California counties provide some of the better bear hunting in the State (Table 3). Siskiyou, Shasta, and Trinity counties accounted for 10%, 9% and 9% of the total bear harvest, respectively. Humboldt, El Dorado, Fresno and Mendocino counties accounted for 6%, 4.4%, 4.3% and 4.2% of the total statewide 2012 bear harvest, respectively. These northern counties provide some of the better bear habitat in the state – areas of mixed aged conifers interspersed with open meadows and mixed hardwood forests that provide ample amounts of calorie-dense berries and nuts.

Estimated Population Size

A premolar tooth was removed from nearly all hunter-killed bears for age determination, which is used to estimate the total population size within the bear hunt zones. Teeth are sent to an independent laboratory in Montana for age determination. The age and sex ratios of bears in the harvest are input into a statistical model that produces a conservative estimate of bear abundance within the hunt zones prior to the commencement of the hunting season. According to these analyses, the Department estimates approximately 34,002 ($\pm 5,561$) bears inhabited the area encompassed by the black bear hunting zones prior to the start of the 2012 bear hunting season (Figure 1). It is important to note that this method only estimates bears within the current hunt zone, prior to the commencement of the previous year's hunting season. As bears occupy habitats outside the 2012 hunt zone, the Statewide population is likely greater than this number.

Monitoring Matrix

The Department monitors the black bear population in accordance with the 1998 Black Bear Management Plan. Contained within this plan is a matrix of thresholds of concern for the statewide black bear population (Table 1). The plan states that if two or more of these thresholds are exceeded, the Department will recommend to the Fish and Game Commission that the bear harvest be reduced.

None of the four thresholds of concern were exceeded. The median age for females in the harvest was 6 years old, and the median age of all bears in the harvest increased from 5 years old in 2011 to 6 years old in 2012. Females comprised less than 40% of the total harvest (Figure 3). Total bear harvest did not exceed the threshold as total harvest was greater than 1,000, nor was there a statistically significant reduction in harvest when compared to the previous three years' average. The

effort and population index threshold requires a significant decline in both take per hunter effort and the population index; this threshold was not exceeded because there was an increase in take per hunter effort when compared to the previous three years' average.

Figure 1. Bear Population Index

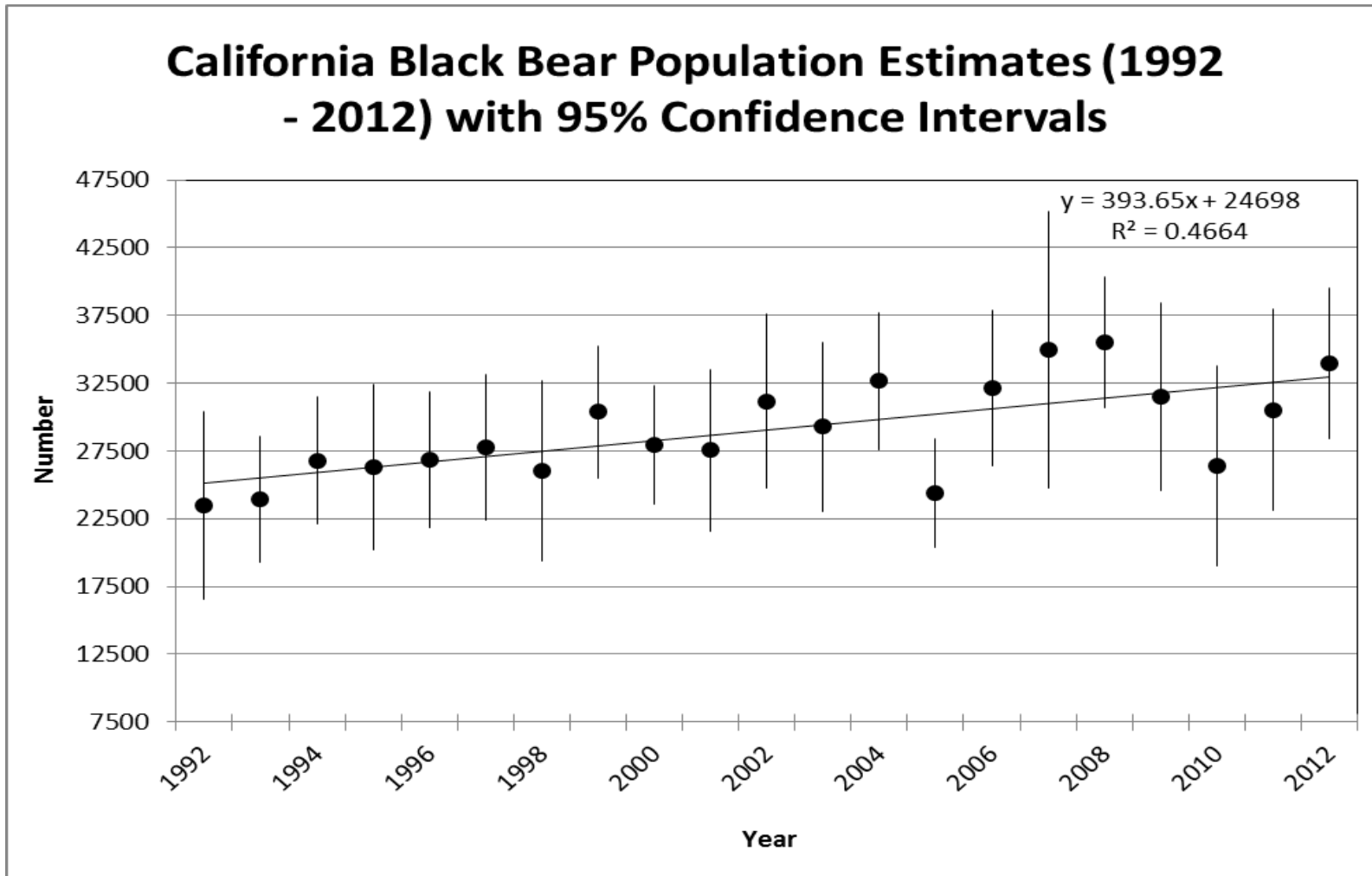


Figure 2. Annual Bear Harvest

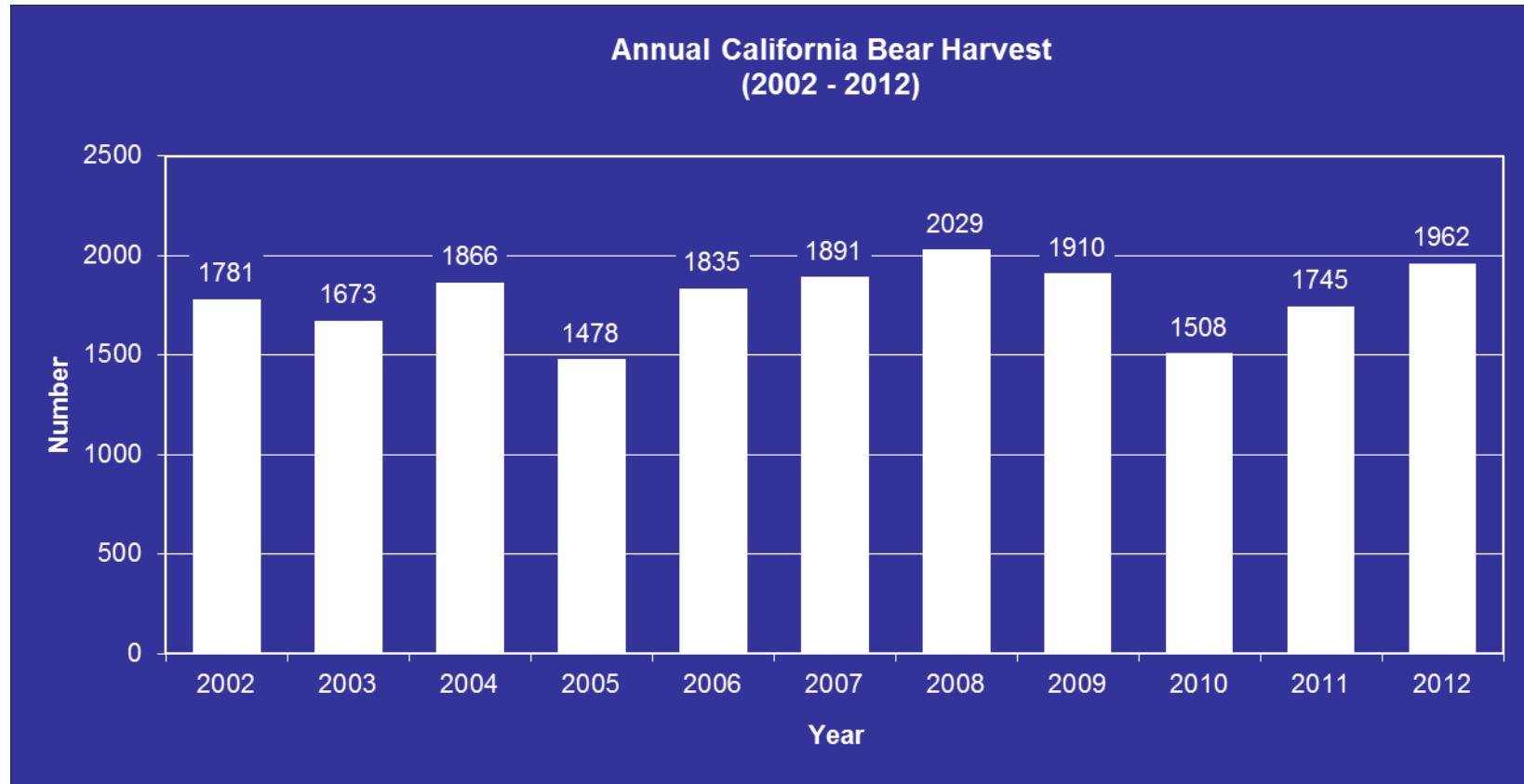


Table 1. Resulting Matrix for Monitoring California's 2012 Black Bear Take.

Monitoring Technique	Threshold of Concern	2012 Data	Threshold Exceeded?
Median Ages of Hunter Killed Bears	Female ages <4.0 years old; -or- statistically significant reduction in median age for combined sexes.	Median Female Age = 6 No statistically significant reduction in median age for combined sexes.	NO
Percent Females in Harvest	>40 percent.	38 percent	NO
Total Harvest	<1,000 or statistically significant reduction; only if reduction is independent of administrative action.	1,962 No statistically significant reduction in harvest	NO
Kill per Hunter Effort and Population Index	Statistically significant decline in both kill per hunter effort and in population index.	No significant decline in kill per hunter effort or population index	NO

Table 2. Method of Take Summary

	Not Archery Hunting	Archery Hunting	Unknown	Grand Total
Bear Hunting	62.7%	3.8%	0.1%	66.6%
Took a Bear while Deer Hunting	28.7%	3.1%	0.0%	31.8%
Unknown	1.1%	0.1%	0.5%	1.6%
Grand Total	92.5%	6.9%	0.6%	100.0%

Figure 3. Bear Take Sex Composition

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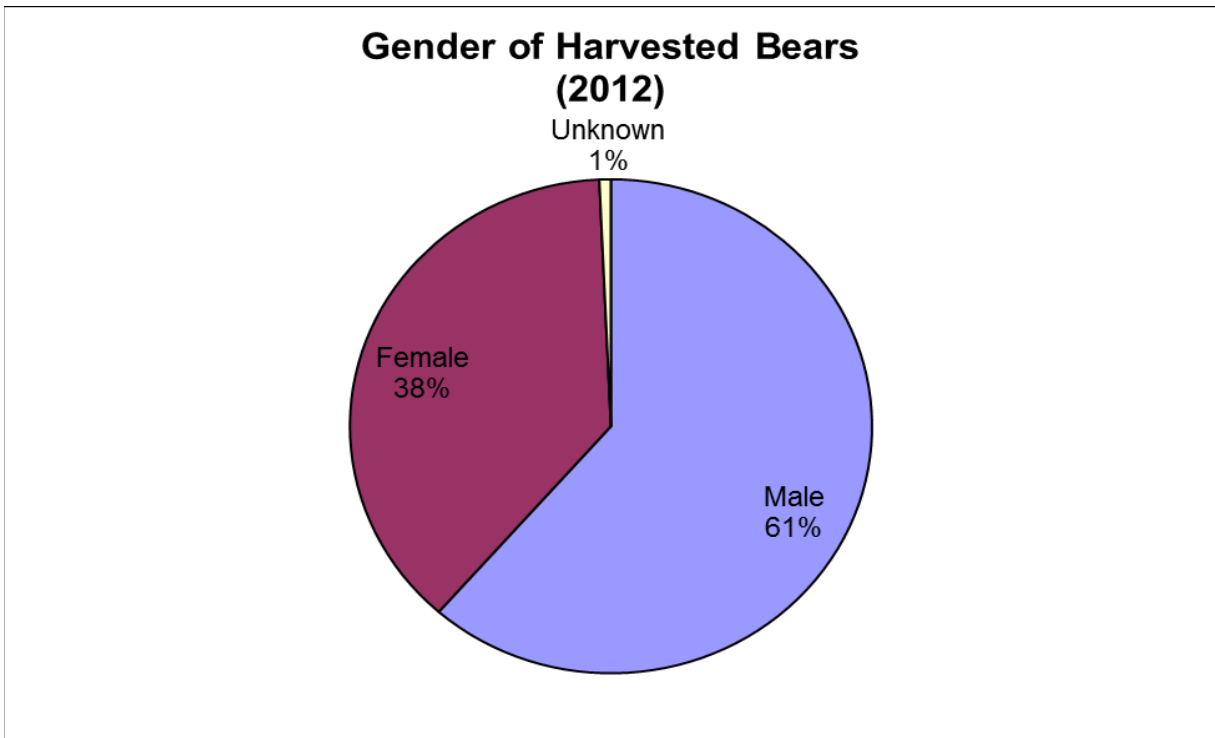


Figure 4. Hunter Effort.

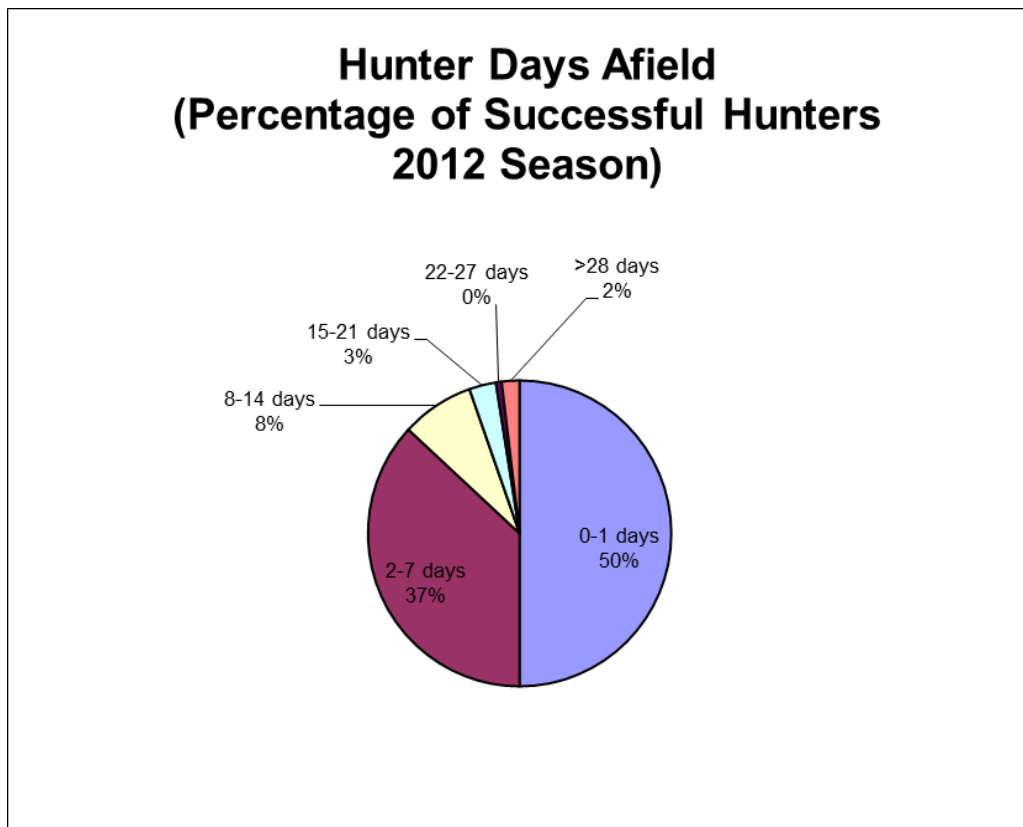


Figure 5. Use of Dogs.

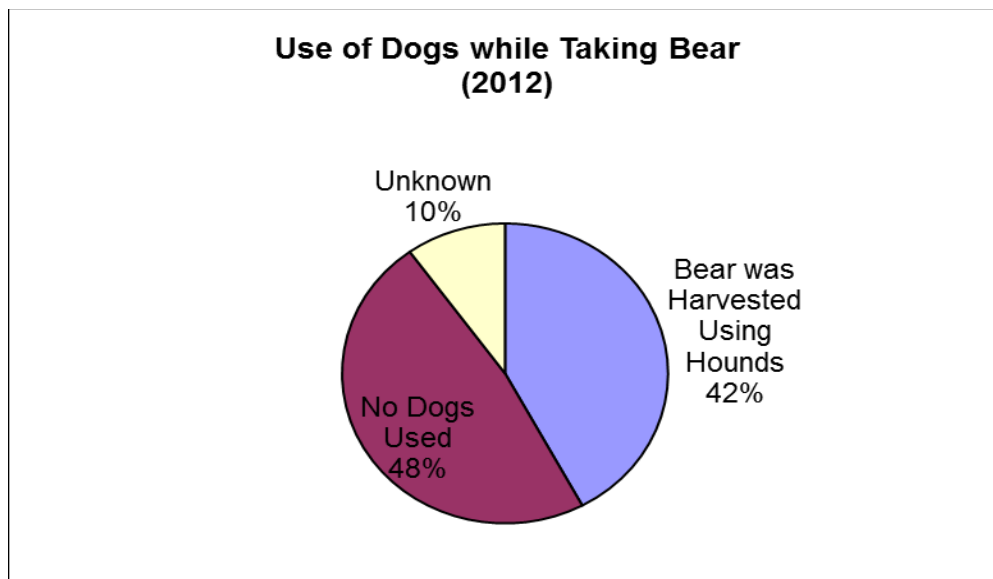


Figure 6. Monthly Bear Take

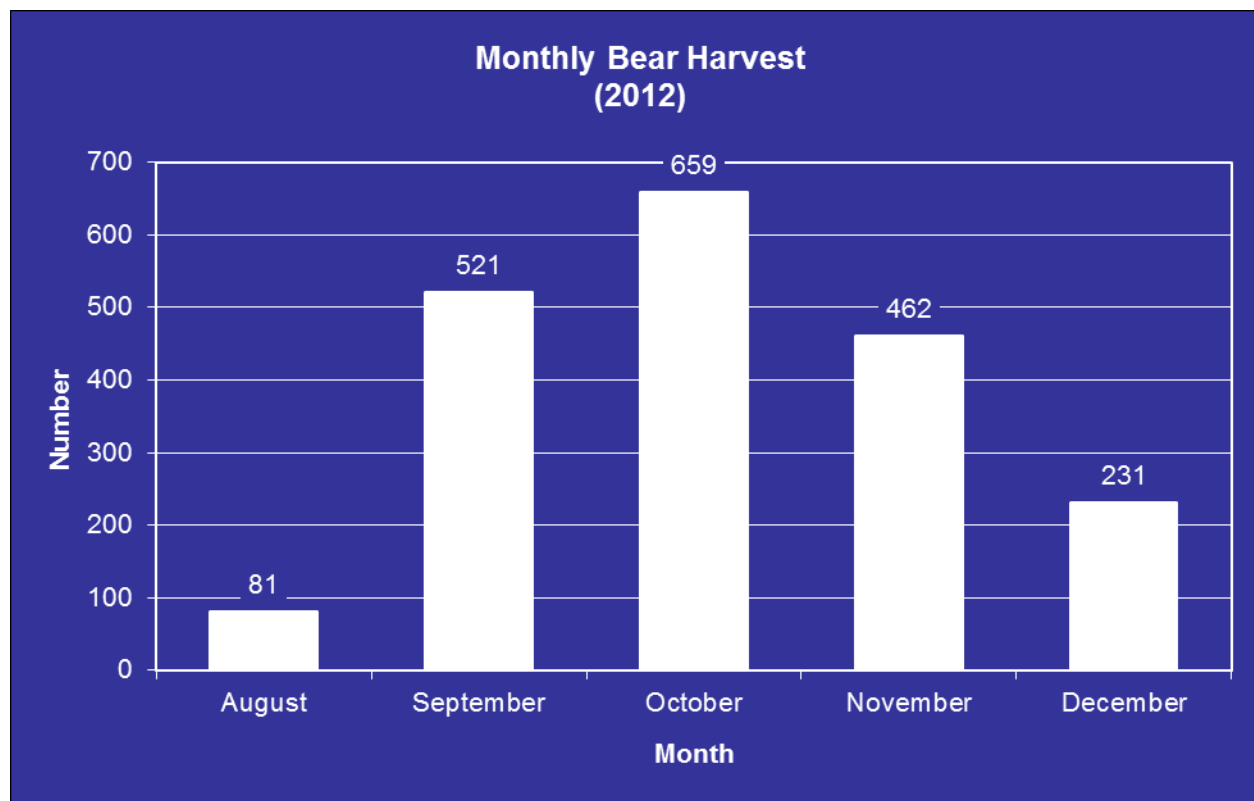


Table 3. Bear Take by County

County	# of Bears Harvested	Percent of Total Harvest
Alpine	5	0.3%
Amador	4	0.2%
Butte	69	3.5%
Calaveras	14	0.7%
Colusa	5	0.3%
Del Norte	37	1.9%
El Dorado	86	4.4%
Fresno	85	4.3%
Glenn	25	1.3%
Humboldt	117	6.0%
Inyo	6	0.3%
Kern	54	2.8%
Lake	9	0.5%
Lassen	21	1.1%
Los Angeles	16	0.8%
Madera	35	1.8%
Mariposa	33	1.7%
Mendocino	82	4.2%
Merced	2	0.1%
Modoc	6	0.3%
Mono	16	0.8%
Napa	4	0.2%
Nevada	28	1.4%
Placer	48	2.4%
Plumas	78	4.0%
Riverside	2	0.1%
San Bernardino	13	0.7%
Santa Barbara	6	0.3%
Shasta	179	9.1%
Sierra	37	1.9%
Siskiyou	193	9.8%
Stanislaus	3	0.2%
Tehama	76	3.9%
Trinity	170	8.7%
Tulare	80	4.1%
Tuolumne	81	4.1%
Ventura	16	0.8%
Yolo	1	0.1%
Yuba	23	1.2%
Unknown	197	10.0%
Total	1962	100%