



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

2014 California

BLACK BEAR TAKE REPORT

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Executive Summary

The 2014 California black bear hunting season resulted in 1,439 bears reportedly taken, representing a 33 percent increase from the 2013 season harvest of 1,078 bears. A total of 26,576 bear tags were issued. Overall hunter success was 5.4 percent. The bear hunting season closed December 28, 2014, making it the second consecutive season where the use of dogs was prohibited and the fourth bear season since 2010 that did not close early. The last bear season early closure occurred in 2012. The top five counties for reported take were: Humboldt (9.8%), Shasta (9.3%), Trinity (7.8%), Mendocino (7.4%) and Kern (7.1%).

Of the returned harvest report tags, 42.4 percent (610) indicated a female was taken. Of the successful bear hunters who reported effort, approximately 67 percent (963) indicated they spent less than 7 days in pursuit of bear. Lastly, bears killed with the assistance of guides only accounted for 0.6 percent of the total bears harvested.

In 2012, state law was passed that made the use of dogs unlawful for taking bear. The law took effect on January 1, 2013 and applies to bear hunting seasons from 2013 forward. The use of hounds is known to be an effective method in taking black bear. Without the use of this hunting technique, the 2013 bear hunter take decreased as was anticipated.

A premolar tooth was removed from nearly all hunter-killed bears for age determination, which is one factor used to estimate the total population size within the bear hunt zones. According to this analysis, the California Department of Fish and Wildlife (CDFW) estimates 35,101 ($\pm 6,444$) bears inhabited the area encompassed by the black bear hunting zones prior to the start of the 2014 bear hunting season. As bears occupy habitats outside the 2014 hunt zones, the statewide population is likely greater than this estimate.

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Introduction

The primary goal of the CDFW's black bear management program is to maintain a viable and healthy black bear population. To attain this goal, the CDFW 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 aesthetic, educational, and non-appropriative 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 CDFW 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 monitor the state's bear population. The black bear harvest tag reporting system enables the CDFW to collect harvest attributes via a self-administered questionnaire in order to monitor the bear population and the hunting patterns of bear hunters in California. Since 1982, all bear tag holders have been required to return their bear harvest report tags to the CDFW whether or not they successfully take a black bear. Since 2013, successful bear hunters have been able to complete their tag questionnaire on-line through the CDFW's Automated License Data System (ALDS). The data obtained from these harvest tag reports comprise a substantial portion of this report.

In addition to the data derived from the on-line reported or returned harvest report tags, the CDFW also 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 CDFW 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 bear premolar teeth extracted from hunter-killed bears. The results of these analyses are also presented in this report.

Table 1. Resulting Matrix for Monitoring California's 2014 Black Bear Take

Monitoring Technique	Threshold of Concern	2014 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 = 4 Total Combined Median Age = 9 No statistically significant reduction in median age for combined sexes.	NO
Percent Females in Harvest	>40 percent.	42.4 percent	YES
Total Harvest	<1,000 or statistically significant reduction; only if reduction is independent of administrative action.	1,439	NO
Kill per Hunter Effort and Population Index	Statistically significant decline in both kill per hunter effort and in population index.	Increase in both kill per hunter effort and in population index.	NO

Summary of 2014 Bear Hunting Regulations

Black bear are widely distributed in California forests and mountain ranges (excluding desert regions) and the CDFW bear hunt zones encompass approximately 86.6 percent of the estimated bear range (Figure 1). The 2014 general bear season opened concurrently with the opening of the general deer season in the A, B, C, D, X8, X9a, X9b, X10 and X12 deer hunting zones. In the remaining portions of the state where bear hunting is permissible, the general bear season opened on the second Saturday in October. The 2014 general bear season was to close when the CDFW received report of 1,700 bears taken, or on December 28, whichever occurred first. Additionally, persons possessing a valid bear tag were able to hunt during a 23-day archery-only season from mid-August to early September.

There was no limit on bear tag sales. The bag and possession limit was one bear per hunter. Bear cubs (defined as bears less than one year of age or weighing less than 50 pounds) and females with cubs were prohibited from harvest. Beginning in 2013, the use of dogs to take bear was unlawful during both the bear archery season and the general bear season.

Results

Season Length

The 2014 archery bear hunting season opened statewide on August 16 and ended on September 7. 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 11 (the second Saturday in October). The bear season closed on December 28 (the last Sunday in December) pursuant to California Code of Regulations, Title 14, section 365, making it the fourth season since 2010 that the bear season did not close early.

Tag Sales

In all, 26,576 bear hunting tags were sold for the 2014 bear season. The total consisted of 26,481 resident bear tags and 95 non-resident bear tags. Total bear tag sales in 2014 was 13.6 percent (3,179) more than 2013 bear tag sales (23,397) and 11.1 percent more than the previous ten years' average. Non-resident bear tag sales increased by a total of 37.7 percent (26) from 2013 sales (69); resident bear tag sales increased by 13.5 percent (3,153) over 2013 sales. This reflects an overall 102 percent revenue increase of \$137,716 from 2013.

Total Take and Sex Composition

During the 2014 black bear hunting season 1,439 bears were reportedly taken. The 2014 bear take was 33 percent more than hunt year 2013 (Figure 2) and is ten percent (156) less than the previous three years' average take of 1,595 bears. Of the 1,439 bears taken, 810 (56.3%) were male, 610 (42.4%) were female, and 19 (1.3%) harvest report tags did not report sex (Figure 3).

Figure 1. Black Bear Range and Take Summary

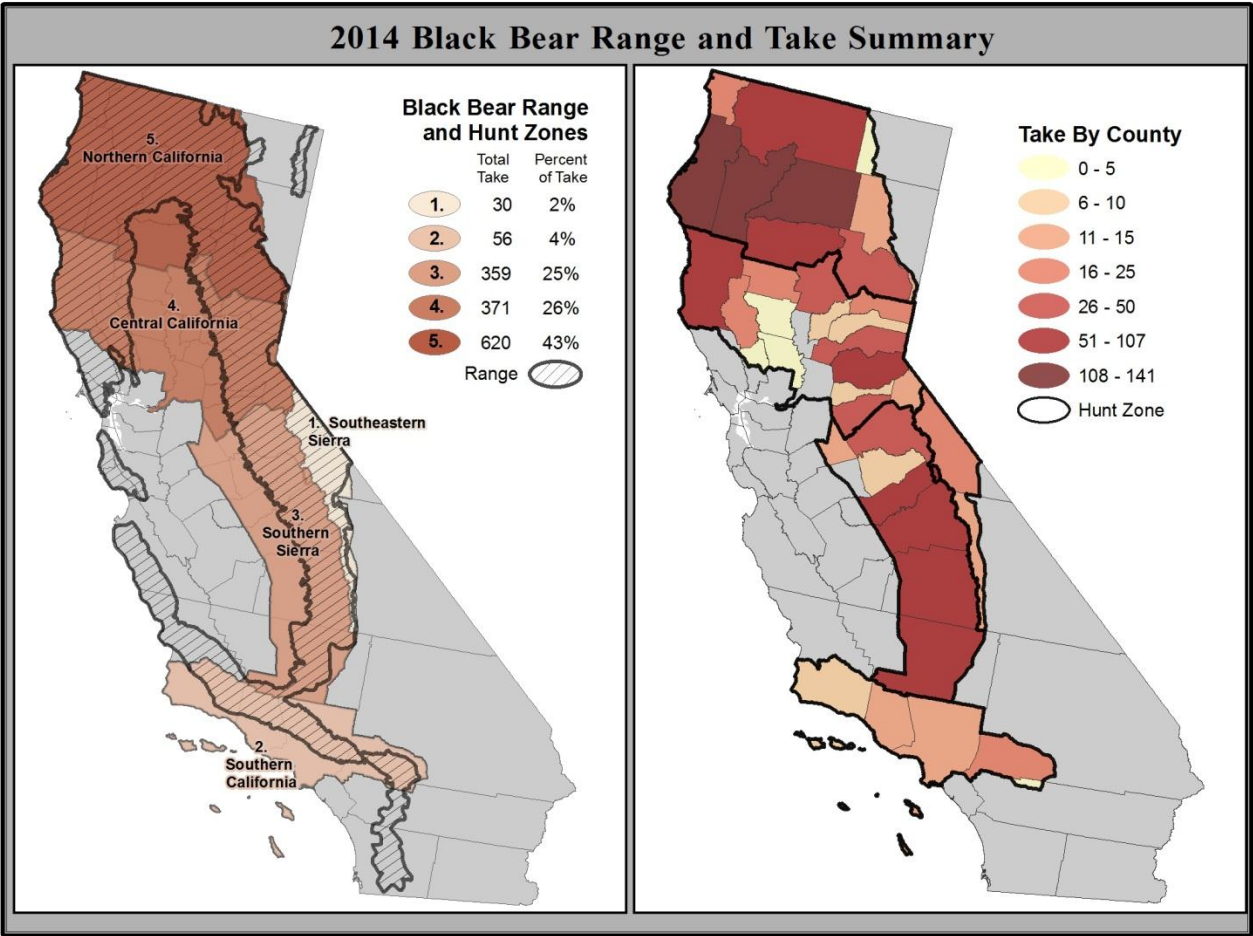


Figure 2. Annual Bear Take

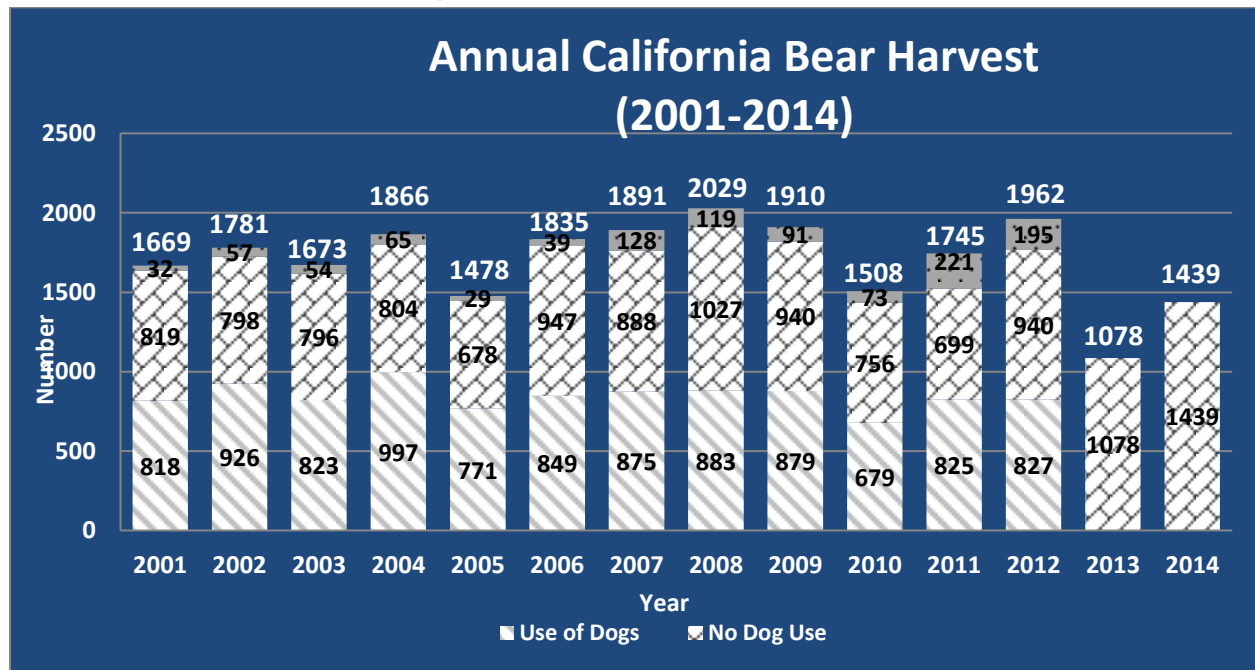
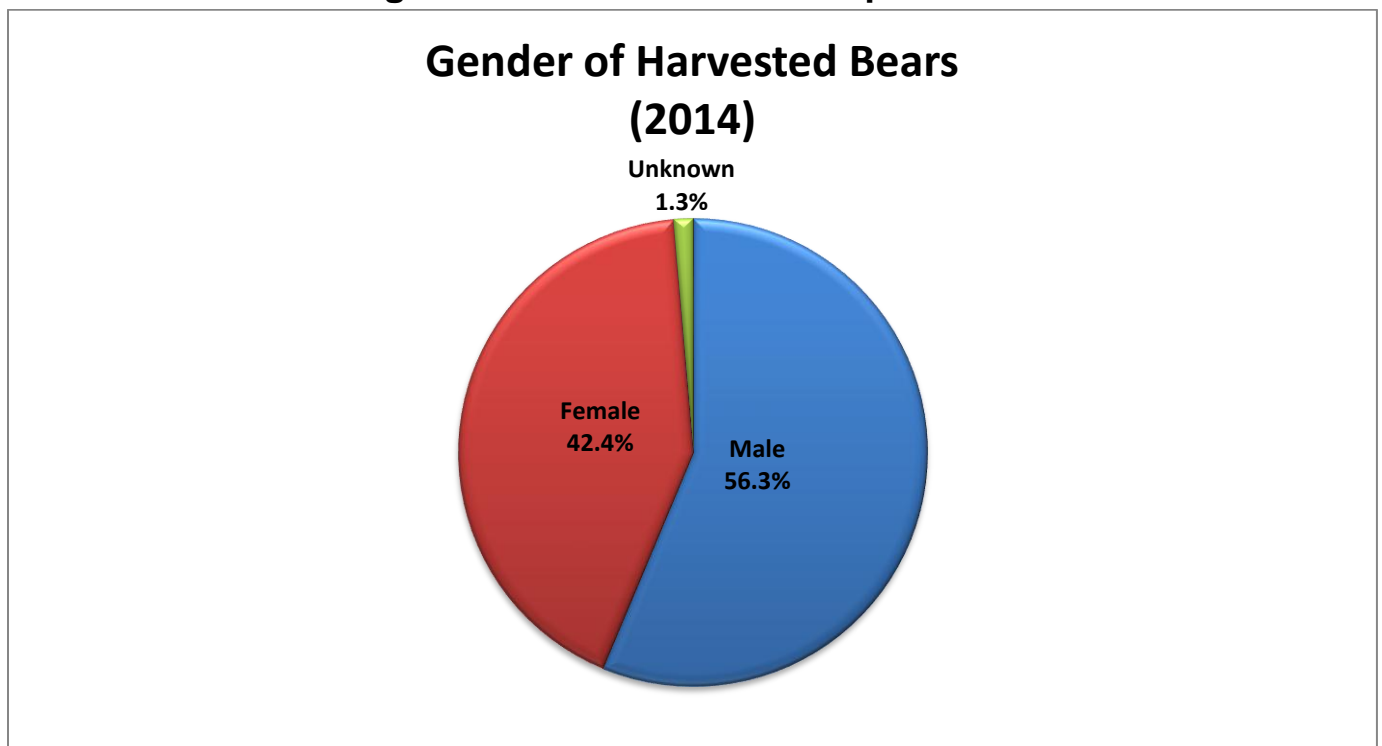


Figure 3. Bear Take Sex Composition



Hunter Effort

Similar to 2013, most bear hunters who were successful in harvesting bear spent a week or less afield (Figure 4). Exactly 37 percent of all successful hunters reported having spent a day or less in the field; 48 percent of successful hunters spent from 2 to 7 days in the field and the remaining 15 percent spent 8 or more days in the field. Of those who responded, successful hunters spent an average of 3.50 days in the field before taking a bear.

Methods of Take

California bear hunters use various methods to harvest a bear. Of those who responded, the use of rifles accounted for 75 percent of bear take, followed by archery equipment (12%), while shotgun, pistol, muzzleloader and crossbow use and disabled hunter take comprised 2 percent of the total bear take (Figure 5). The remaining 11 percent did not report any method of take while harvesting bear. Individuals using a rifle, archery equipment or a shotgun spent, on average, 3.89 days in the field before taking a bear, whereas individuals using a pistol spent 8 days and individuals using muzzleloaders spent 6 days in the field.

In 2012, state law was passed that makes the use of dogs unlawful for taking bear. This law took effect beginning January 1, 2013 and applied to the 2014 bear hunting season. The last bear lawfully taken with assistance of dogs in California was an 11 year old male bear in Trinity County on December 18, 2012. The use of hounds is known to be an effective method in taking black bear. Without the use of this hunting technique, the 2013 bear hunter take decreased as was anticipated. The stacked bar graph in Figure 2 further illustrates the relative harvest by hunters with and without the use of dogs through 2012. In the majority of cases, hunters without dogs took more bears than hunters with dogs for the time period shown.

Similar to the previous year, in comparison to hunters solely bear hunting, hunters who took bear while deer hunting during 2014 accounted for the majority (44.9%) of the total harvest (Table 2); only 6.4 percent of these hunters reportedly used archery equipment. Only 32 percent of hunters took their bear while only bear hunting and 5.6 percent of these hunters used archery equipment. In 2013, 13 (1.2%) of all bear hunters reporting successful take reported the use of a guide. Of all bear hunters reporting successful take in 2014, 7 (0.5%) reported the use of a guide, representing a 46 percent decrease compared to 2013.

Timing of Take

Bears were predominantly harvested in September and October (Figure 6), most likely due to the general bear hunting season being concurrently open with general deer season in most of the deer hunt zones. Similar to previous years, the number of bears harvested in November and December were less than the month previous, reflecting decreasing bear availability due primarily to denning chronology.

Figure 4. Hunter Effort

**Hunter Days Afield
(Percentage of Successful Hunters 2014 Season)**

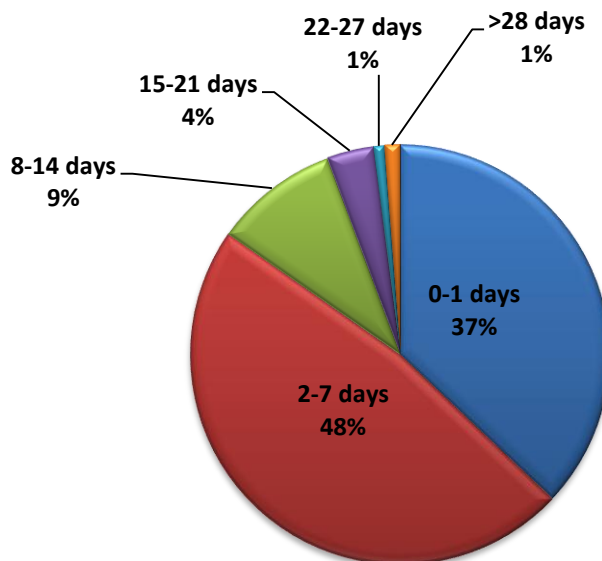


Figure 5. Method of Take Summary

**Method of Take
(2014)**

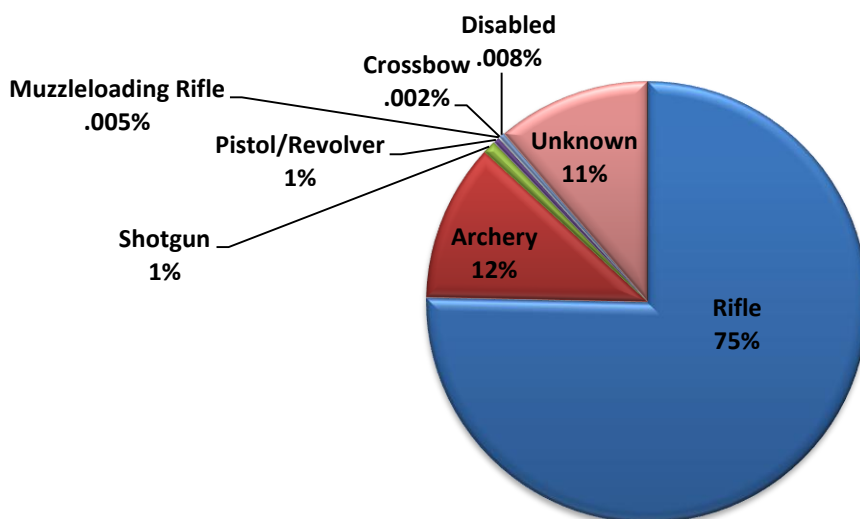
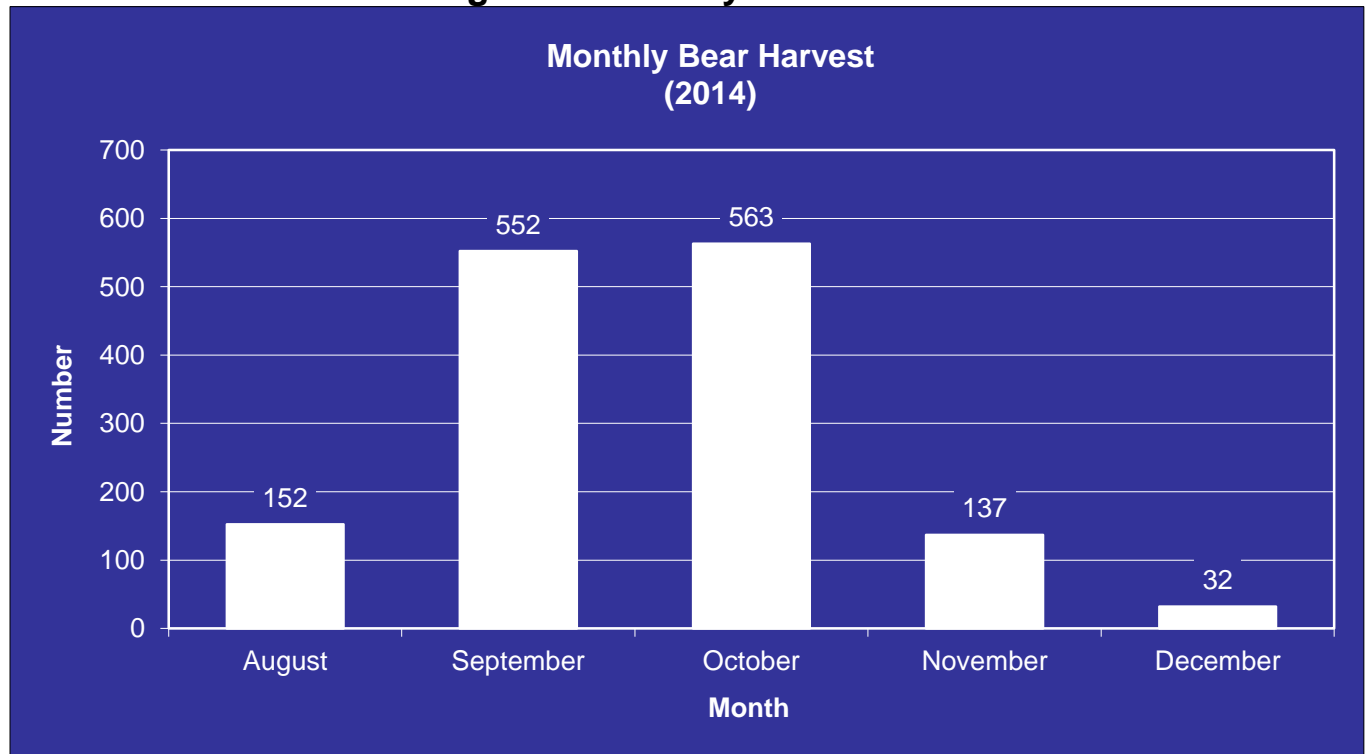


Table 2. Take Summary by Method and Season (2014)

	General Hunting	Archery Hunting	Unknown	Grand Total
Bear Hunting	32.0%	5.6%	11.2%	48.7%
Took a Bear while Deer Hunting	44.9%	6.4%	0.0%	51.3%
Grand Total	76.9%	12.0%	11.2%	100.0%

Figure 6. Monthly Bear Take



Location

Northern California counties provide some of the better bear hunting in the state (Table 3). Figure 1 further illustrates bear take by bear hunt zone and county. Humboldt, Shasta, and Trinity counties accounted for 9.8 percent, 9.3 percent and 7.8 percent of the total statewide 2014 bear sport take, respectively. Additionally, Mendocino, Kern, Tulare, Siskiyou, Tehama, and Fresno counties accounted for 7.4 percent, 7.1 percent, 6.7 percent, 6.0 percent, 4.9 percent and 4.7 percent of the total bear sport take, respectively. These 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 (1,252) hunter-killed bears for age determination, which is one factor 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 bear hunt zones prior to the commencement of the black bear hunting season.

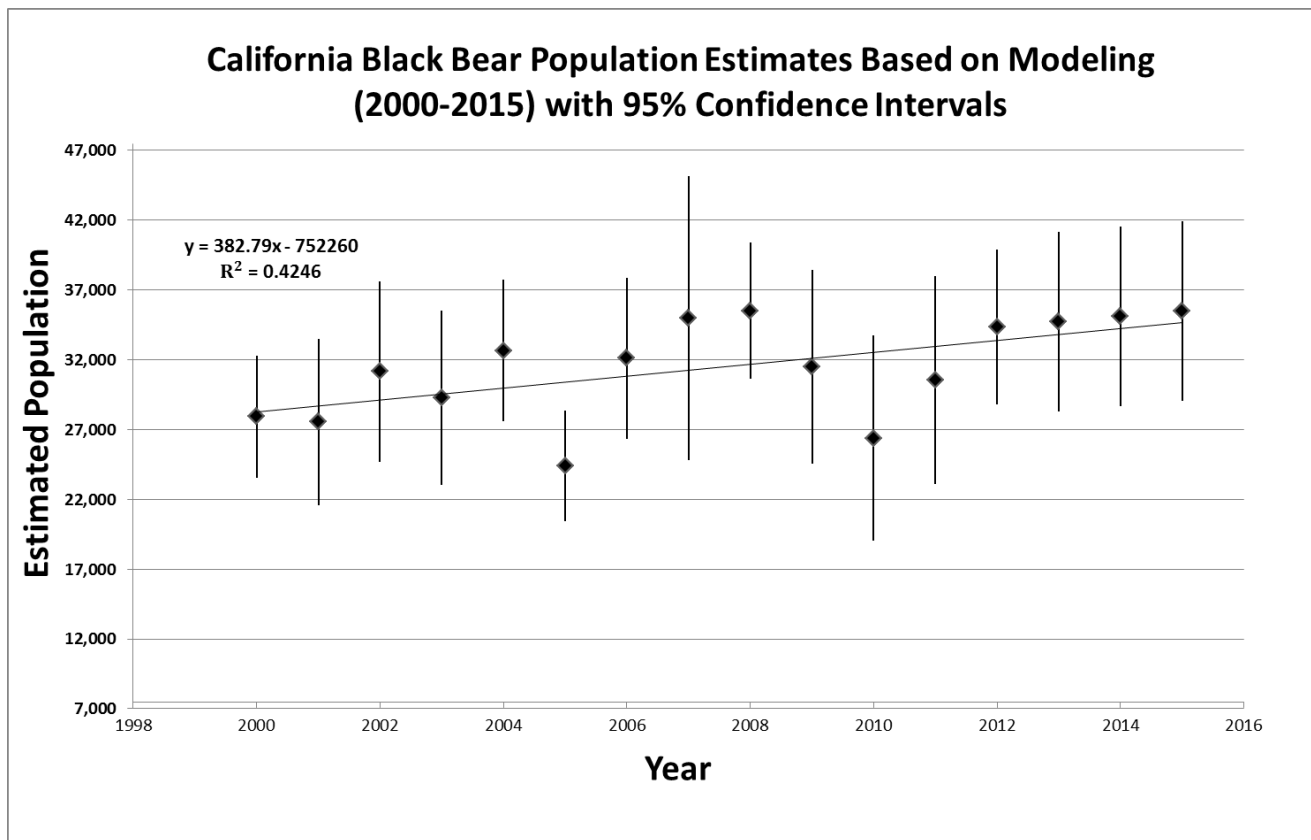
Through 2012, the age and sex ratios of bears taken with and without the use of hounds have been input into the statistical model. As previously stated, beginning in 2013, the use of dogs in the sport take of bears is prohibited thereby eliminating this type of data to be input into the statistical model for population estimation. A regression best fit graph line using data of bears taken without dogs was subsequently developed to determine population trend information (Figure 7). The trend information from this regression line for 2014 of 383 additional bears ($y=383$) was applied to the 2013 bear hunt zones population estimate of 34,718.

According to these analyses, the CDFW estimates approximately 35,101 ($\pm 6,444$, 2008-2012 average confidence interval of take with dogs) bears inhabited the area encompassed by the black bear hunting zones prior to the start of the 2014 bear hunting season (Figure 1). It is important to note that this method only estimates bears within the current hunt zones, prior to the commencement of the previous year's hunting season. As bears occupy habitats outside the 2014 hunt zones, the statewide population is likely greater than this number.

Table 3. Bear Take by County

County	# of Bears Harvested	Percent of Total Harvest
Alpine	13	0.9%
Amador	7	0.5%
Butte	28	1.9%
Calaveras	26	1.8%
Colusa	4	0.3%
Del Norte	19	1.3%
El Dorado	54	3.8%
Fresno	67	4.7%
Glenn	25	1.7%
Humboldt	141	9.8%
Inyo	12	0.8%
Kern	102	7.1%
Lake	16	1.1%
Lassen	12	0.8%
Los Angeles	13	0.9%
Madera	54	3.8%
Mariposa	7	0.5%
Mendocino	107	7.4%
Modoc	2	0.1%
Mono	18	1.3%
Napa	4	0.3%
Nevada	8	0.6%
Placer	36	2.5%
Plumas	43	3.0%
Riverside	2	0.1%
San Bernardino	20	1.4%
Santa Barbara	7	0.5%
Shasta	134	9.3%
Sierra	22	1.5%
Siskiyou	86	6.0%
Stanislaus	13	0.9%
Tehama	71	4.9%
Trinity	112	7.8%
Tulare	96	6.7%
Tuolumne	32	2.2%
Ventura	14	1.0%
Yolo	1	0.0%
Yuba	8	0.6%
Unknown County	3	0.2%
Total	1,439	99.9%

Figure 7. Bear Population Index



Monitoring Matrix

The CDFW 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 CDFW will recommend to the Fish and Game Commission that the bear harvest be reduced. One of the four thresholds of concern was exceeded. The median age for females in the harvest was 4 years old, and the median age of all bears in the harvest increased from 7 years old in 2013 to 9 years old in 2014. Females comprised more than 40% of the total harvest (Figure 3). Total bear harvest did not exceed (drop below) the threshold (harvest less than 1,000) as total harvest was greater than 1,000 (1,439), nor was there a statistically significant reduction in harvest independent of administrative action (prohibiting the use of dogs while taking bear) when compared to the previous three years' average. Moreover, there was no statistically significant decline in both the kill per hunter effort and in the population index.

As previously stated, successful hunters in 2014 spent an average of 3.50 days in the field before taking a bear compared to the 2013 successful hunter average days' effort of 4.05 days. Also, the 2014 bear harvest of 1,439 bears was 33 percent greater than the 2013 harvest of 1,078 bears. Hence, the kill per hunter effort and the population index both increased and together did not exceed a matrix threshold of concern notwithstanding the prohibition on the use of dogs in bear hunting.

