



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



**BLACK BEAR TAKE REPORT 2016**

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## **Executive Summary**

The 2016 California black bear hunting season resulted in 1,072 bears taken, representing a 16.7 percent decrease from the 2015 season harvest of 1,287 bears. A total of 27,253 bear tags were issued. Overall hunter success was 3.9 percent. The bear hunting season closed December 25, 2016, making it the fourth consecutive season where the use of dogs was prohibited and that did not close early. The top five counties for reported take were: Shasta (10.6%), Trinity (8.2%), Humboldt (8.1%), Mendocino (7.2%) and Siskiyou (5.9%). In the Private Lands Management (PLM) Program for 2016, three licensees purchased 31 PLM bear tags with a resulting program harvest of three bears.

Of the returned harvest report tags, 39.6 percent (425) indicated a female was taken. Of the successful bear hunters who reported effort, approximately 79.3 percent (826) indicated they spent 7 days or less in pursuit of bear. Lastly, bears killed with the assistance of guides only accounted for 0.9 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 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.

A premolar tooth was removed from the majority of hunter-killed bears (919) for age determination, which is one factor used to estimate the total population size within the bear hunt areas. According to this analysis, the California Department of Fish and Wildlife (Department) estimates 35,867 ( $\pm 6,444$ ) bears inhabited the area encompassed by the black bear hunting areas prior to the start of the 2016 bear hunting season. As bears occupy habitats outside the 2016 hunt areas, the statewide population is likely greater than this estimate.

## Introduction

The primary goal of the Department'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 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- amongst other wildlife- to the California Fish and Game Commission. The Commission, in consultation with Department 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 3), and the results of such monitoring are presented herein.

In 1957, the Commission initiated a tag reporting system for black bears taken in California. The black bear harvest tag reporting system enables the Department to monitor both the bear population and hunter's bear-hunting patterns by collecting harvest attributes via a self-administered questionnaire. Since 1982, all bear tag holders have been required to return their bear harvest report tags to the Department whether or not they successfully took a black bear. Since 2013, successful bear hunters have been able to complete their tag questionnaire on-line through the Department's Automated License Data System (ALDS). The data obtained from these harvest tag reports comprise a substantial portion of this report.

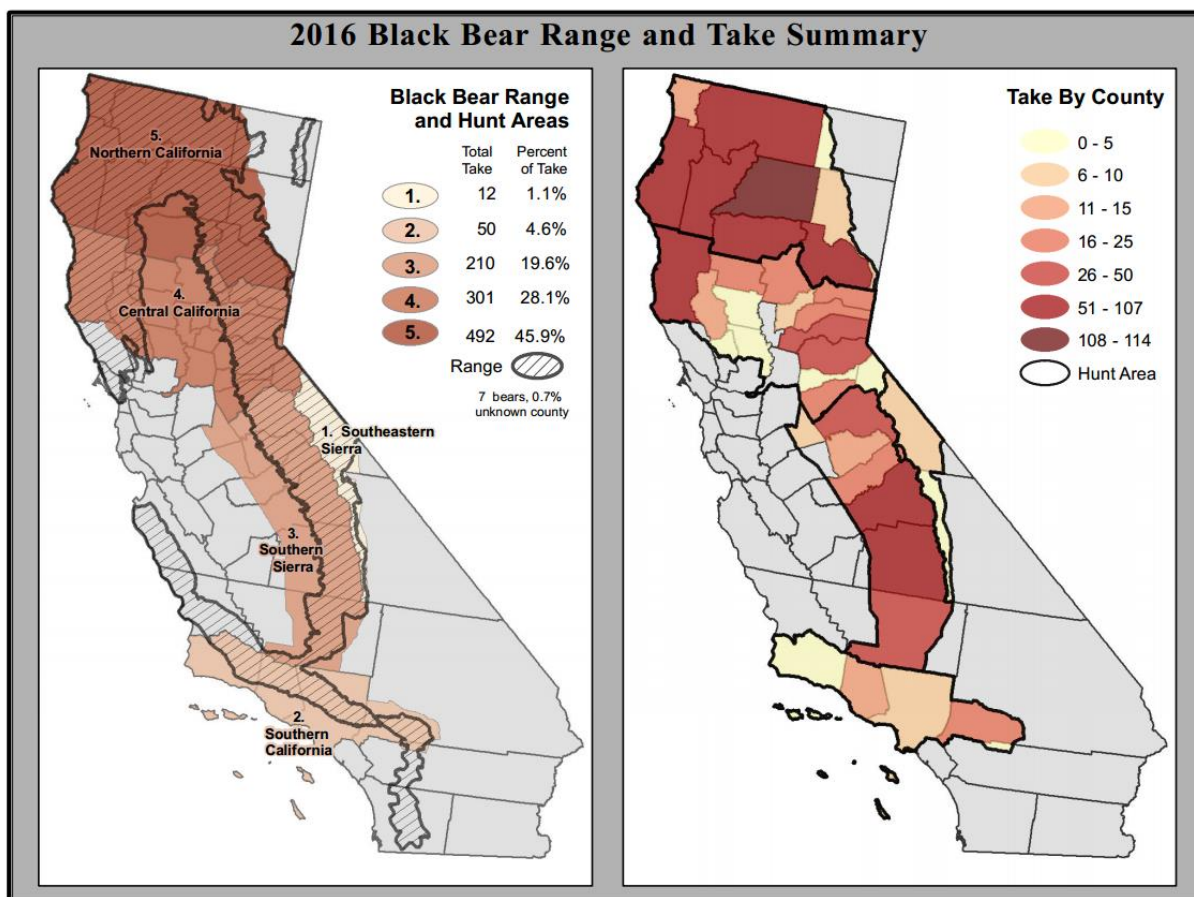
In addition to the data derived from the on-line reported or returned harvest report tags, the Department also relies on the age of bears taken during the season to develop population indices. Age data are obtained from bear premolar teeth extracted from hunter-killed bears. The age-at-harvest data provide direct insight to the age structure of bears taken during the season. Furthermore, the Department utilizes age-at-harvest data in conjunction with sex ratio information in a population estimation model to develop a population index, and to monitor population trends. The results of these analyses are also presented in this report.

## Summary of 2016 Bear Hunting Regulations

Black bears are widely distributed in California forests and ranges, with Department bear hunt areas encompassing approximately 86.6 percent of the total estimated bear range (Figure 1). The 2016 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. Additionally, persons possessing a valid bear tag were able to hunt during a 23-day archery-only season from mid-August to early September. The 2016 general bear season was to close when the Department received report of 1,700 bears taken, or on December 25, whichever occurred first.

There was no limit on bear tag sales. The bag and possession limit is 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 may not be taken. Beginning in 2013, the use of dogs to take bear was unlawful during both the bear archery season and the general bear season.

**Figure 1. Black Bear Range and Take Summary**



## 2016 Hunt Season Results

### Season Length

The 2016 archery bear hunting season opened statewide on August 20 and ended on September 11. 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 8 (the second Saturday in October). The bear season closed on December 25 (the last Sunday in December) pursuant to California Code of Regulations, Title 14, section 365, making it the sixth season since 2010 that the bear season did not close early.

### Tag Sales

In all 27,253 bear hunting tags were sold for the 2016 bear season. The total consisted of 27,172 resident bear tags and 81 non-resident bear tags. Total bear tag sales in 2016 was 1.2 percent (325) lower than 2015 bear tag sales (27,578) and 9.9 percent more than the previous ten years' average. Non-resident bear tag sales decreased by a total of 17.3 percent (17) from 2015 sales (91) with resident bear tag sales decreasing by 1.1 percent (308) over 2015 sales. This reflects an overall revenue decrease of \$17,725 from 2015.

### Total Take and Sex Composition

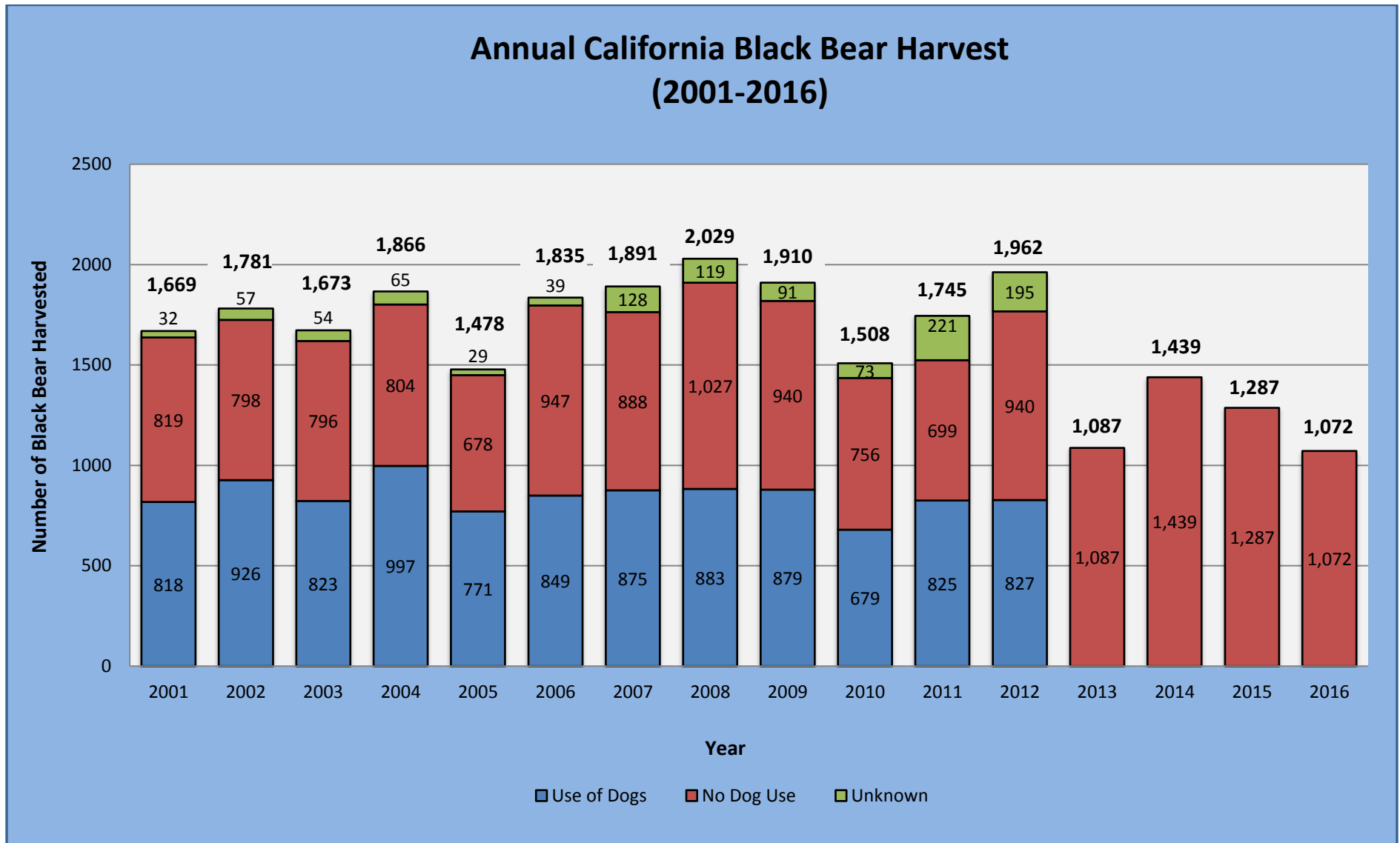
During the 2016 black bear hunting season 1,072 bears were taken. The 2016 bear take was 16.7 percent (215) less than the 2015 hunt year (Figure 2) and 15.7 percent (199) less than the previous three years' average take of 1,271 bears. Of the 1,072 bears taken 639 (59.6%) were male, 425 (39.6%) were female, and 8 (0.7%) harvest report tags did not report sex (Figure 3).



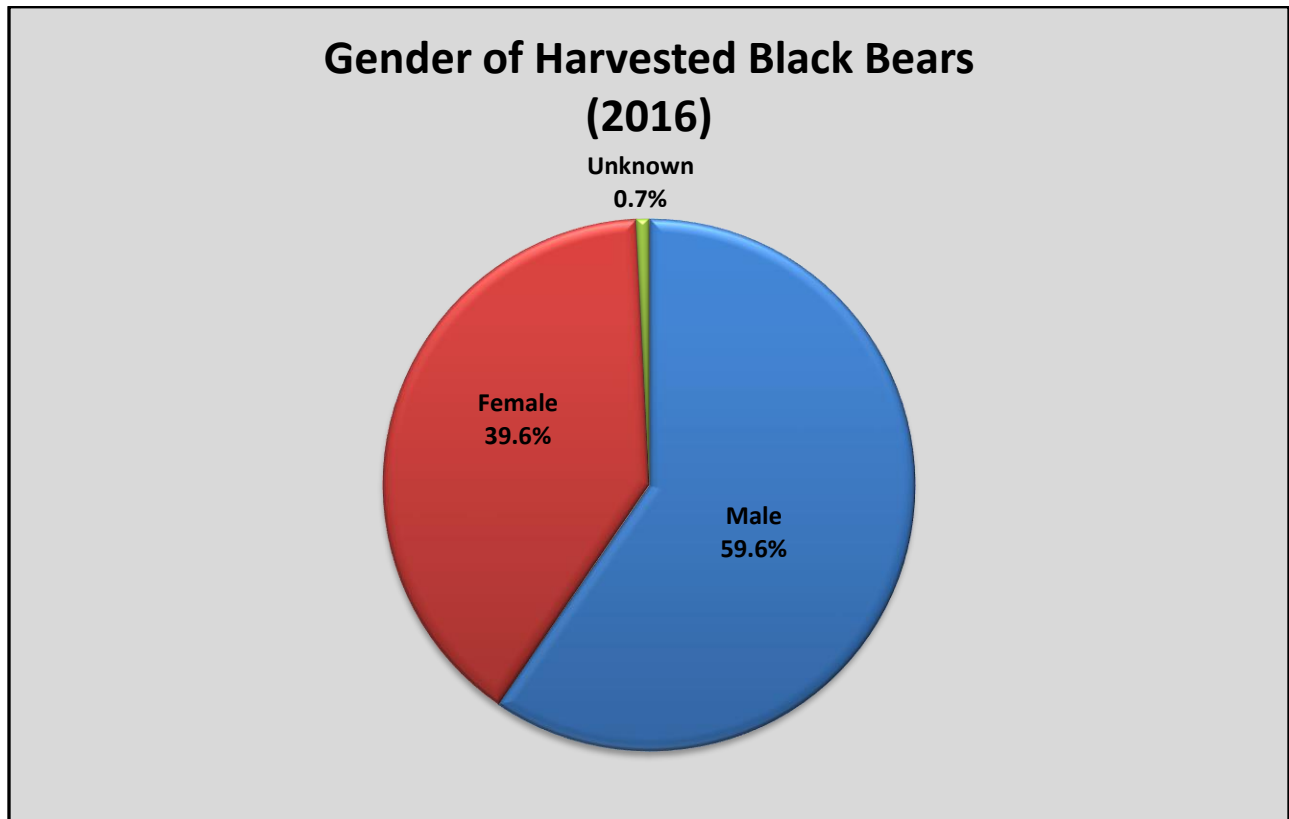
Photo courtesy CDFW Keep Me Wild®.



Figure 2. Annual Bear Take



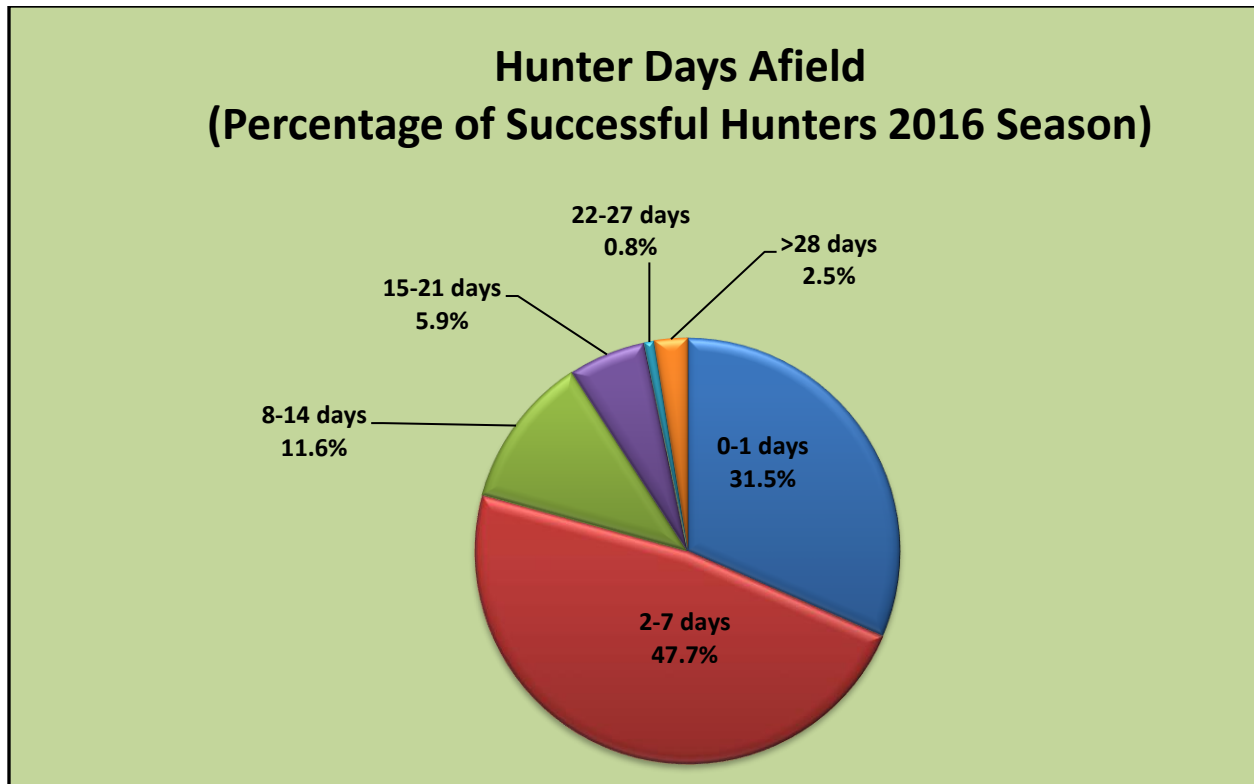
**Figure 3. Bear Take Sex Composition**



### **Hunter Effort**

Similar to 2015, most bear hunters that were successful in harvesting a bear spent a week or less afield (Figure 4). Of the successful hunters who reported number of days hunting before take, 31.6 percent spent a day or less in the field while 47.7 percent spent 2 to 7 days in the field. The remaining 20.7 percent reported spending 8 or more days in the field. Successful hunters reporting effort spent an average of 5.4 days in the field before taking a bear. The 2016 season average represents a 17.4 percent increase in days spent afield for hunters when compared with the average of 4.6 days afield in the 2015 black bear hunting season.

**Figure 4. Hunter Effort**



### **Methods of Take**

There are various methods by which Californians can legally harvest a bear. Of those who responded, the use of rifles accounted for 85.4 percent of bear take, followed by archery equipment (11.1%). Shotgun, pistol, muzzleloader, crossbow, and disabled hunter take comprised 1.4 percent of the total bear take (Figure 5). The remaining 1.7 percent did not report any method of take while harvesting bear. Individuals using a rifle spent an average 5.4 days in the field before taking a bear, whereas individuals using archery equipment spent an average 5.3 days and individuals using muzzleloaders spent an average 8.5 days in the field. Individuals using a shotgun accounted for the lowest reported days afield average at 1.25 days before take.

In 2012, a new state law was passed that made the use of dogs unlawful for taking bear. This law took effect beginning January 1, 2013 and applied to the 2016 bear hunting season. Without the use of this hunting technique, the 2013 bear hunter take decreased to the second-lowest take season seen since the turn of the century. However, in the majority of hunt seasons preceding 2013, black bear take by hunters without dogs exceeded take by hunters with dogs (Figure 2).

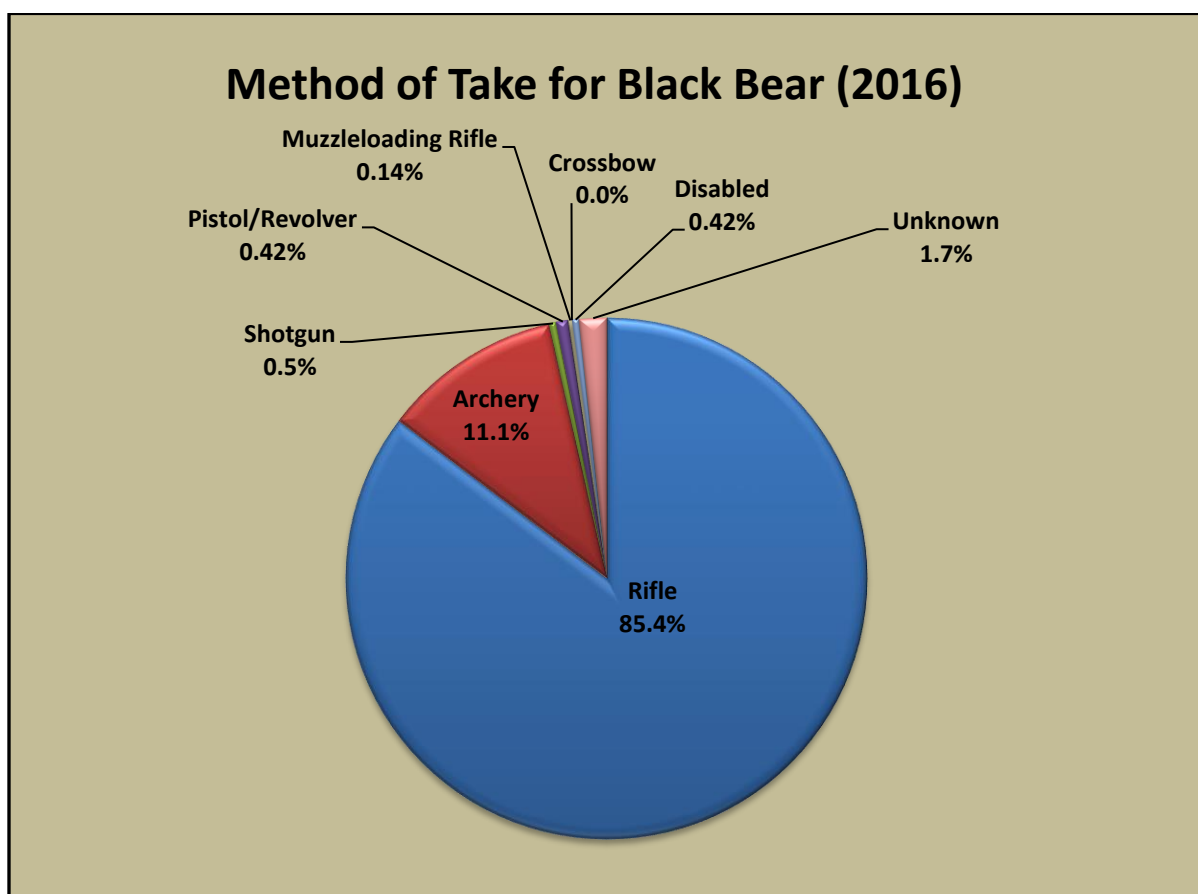
Hunters were also asked to report whether a bear was taken while hunting exclusively for bear, or while deer hunting. Similar to previous years, the 2015 season hunters who took bear while concurrently



hunting deer accounted for the majority (61.8%) of the total harvest scenarios (Table 1). Of hunters who took a bear while deer hunting, only 7.1 percent reportedly used archery equipment. Only 36.6 percent of hunters took their bear while exclusively bear hunting, with 4.5 percent of these hunters using archery equipment.

In the 2015 hunt season, eight (0.6%) of all successful bear hunters reported the use of a guide. Of all bear hunters reporting successful take in 2016, 10 (0.9%) reported the use of a guide, representing no significant change.

**Figure 5. Method of Take Summary**



**Table 1. Take Summary by Method and Season (2016)**

	General Hunting	Archery Hunting	Unknown
Bear Hunting	36.6%	4.5%	0.0%
Took a Bear while Deer Hunting	61.8%	7.1%	0.0%
Unknown	0.0%	0.0%	1.7%

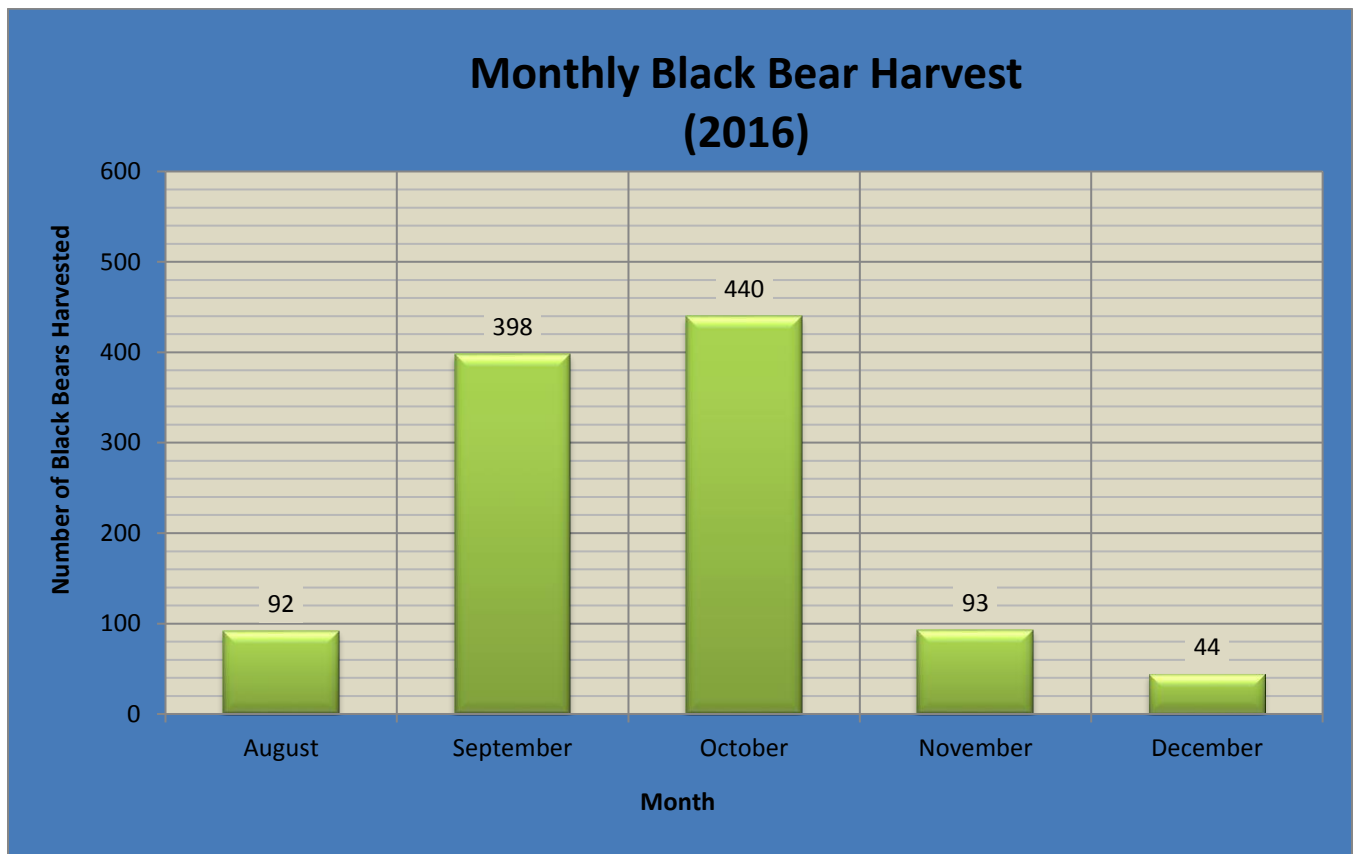
### Timing of Take

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 was less than the month of October, reflecting decreasing bear availability due primarily to denning chronology.



Photo courtesy CDFW Flickr®.

**Figure 6. Monthly Bear Take**



### **Location**

Northern California counties provide some of the better bear hunting in the state (Figure 1). Bears were known to be harvested in 38 of California's 58 counties (Table 2). Shasta, Trinity, and Humboldt counties accounted for 10.6 percent, 8.2 percent and 8.1 percent of the total bear sport take, respectively. Mendocino, Siskiyou, Plumas, Tulare, Tehama, and Fresno counties accounted for 7.2 percent, 5.9 percent, 5.7 percent, 5.0 percent, 5.0 percent, and 4.8 percent of the total statewide 2016 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. These regions provide ample amounts of black bear preferred forage of calorie-dense berries and nuts as well as access to supplemental insects, meats, and other consumable plant material.

**Table 2. Bear Take by County**

<b>County</b>	<b># of Bears Harvested</b>	<b>Percent of Total Harvest</b>
Alpine	3	0.28%
Amador	3	0.28%
Butte	23	2.15%
Calaveras	23	2.15%
Colusa	2	0.19%
Del Norte	15	1.40%
El Dorado	44	4.10%
Fresno	51	4.76%
Glenn	23	2.15%
Humboldt	87	8.12%
Inyo	3	0.28%
Kern	28	2.61%
Lake	13	1.21%
Lassen	9	0.84%
Los Angeles	10	0.93%
Madera	20	1.87%
Mariposa	11	1.03%
Mendocino	77	7.18%
Modoc	1	0.09%
Mono	9	0.84%
Napa	5	0.47%
Nevada	19	1.77%
Placer	34	3.17%
Plumas	61	5.69%
Riverside	3	0.28%
San Bernardino	19	1.77%
Santa Barbara	4	0.37%
Shasta	114	10.63%
Sierra	23	2.15%
Siskiyou	63	5.88%
Stanislaus	6	0.56%
Tehama	54	5.04%
Trinity	88	8.21%
Tulare	54	5.04%
Tuolumne	40	3.73%
Ventura	14	1.31%
Yolo	1	0.09%
Yuba	8	0.75%
Unknown County	7	0.65 %
<b>Total</b>	<b>1,072</b>	<b>100.0%</b>

## Estimated Population Size

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 areas. 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 areas prior to the commencement of the black bear hunting season.

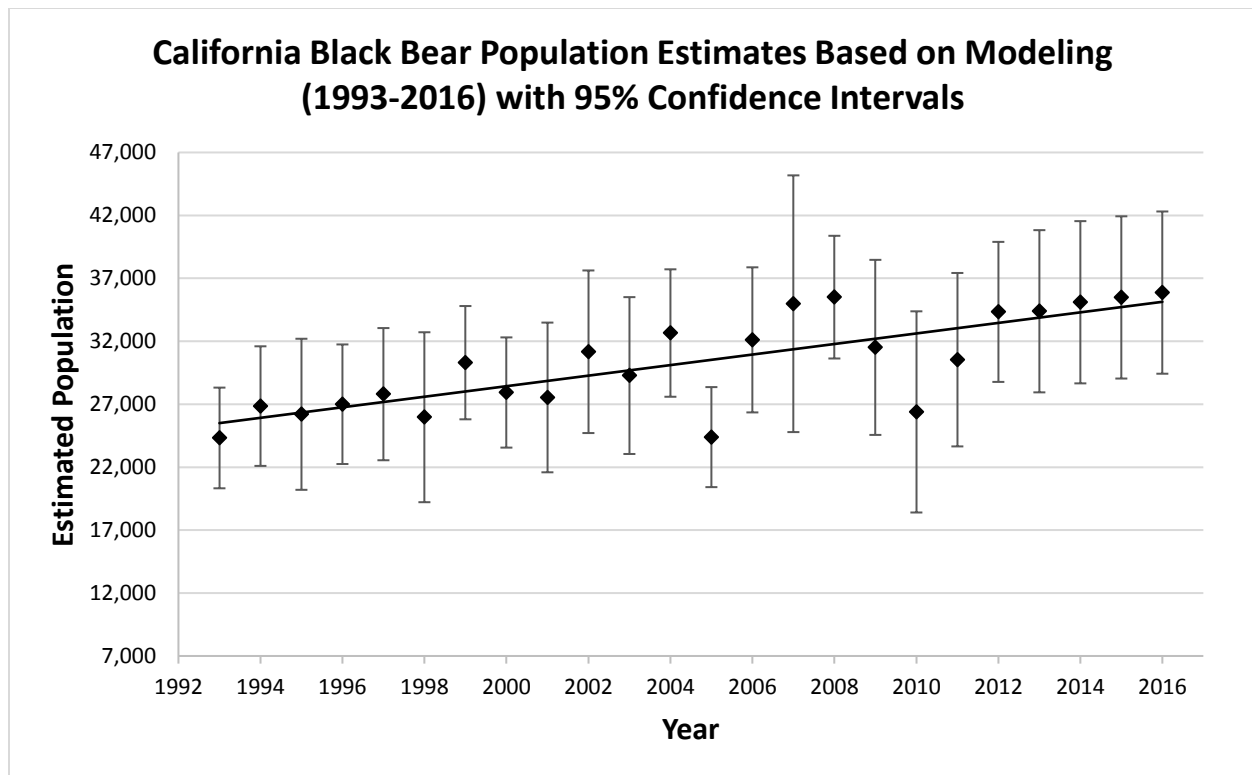
Through 2012, the age and sex ratios of bears taken with and without the use of hounds have been input into the statistical model. As previously stated, beginning in 2013, the use of dogs in the sport take of bears is prohibited thereby eliminating the use of this category of data in the statistical 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 2016 of 383 additional bears ( $y=383$ ) was applied to the 2015 bear hunt areas population estimate of 35,484.

According to these analyses, the Department estimates approximately 35,867 ( $\pm 6,444$ , 2008-2012 average confidence interval of take with dogs) bears inhabited the area encompassed by the black bear hunting areas prior to the start of the 2016 bear hunting season (Figure 1). It is important to note that this method only estimates bears within the current bear hunt areas, prior to the commencement of the previous year's hunting season. As bears occupy habitats outside the 2016 bear hunt areas, the statewide population is likely greater than this number.



Photo courtesy of 2017-2018 California  
Mammal Hunting Regulations booklet

**Figure 7. Bear Population Index**



### **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 3). 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 was exceeded. The median age for females in the harvest was 7 years old, and the median age of all bears in the harvest increased from 4 years old in 2015 to 6 years old in 2016. Females comprised 39.6 percent of the total harvest, putting their numbers below the 40 percent level of concern (Figure 3). Total bear harvest did not drop below the threshold (harvest less than 1,000), 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 2016 spent an average of 5.4 days in the field before taking a bear compared to the 2015 successful hunter average days' effort of 4.6 days, representing an insignificant decrease in kill per effort. Also, the 2016 bear harvest of 1,072 bears was 16.7 percent less than the 2015 harvest of 1,287 bears.



**Table 3. Resulting Monitoring Matrix**

Monitoring Technique	Threshold of Concern	2016 Data	Threshold Exceeded?
Median Ages of Hunter Killed Bears	Female ages <4.0 years old; <b>-or-</b> statistically significant reduction in median age for combined sexes.	Median Female Age = 7  Total Combined Median Age = 6	NO
Percent Females in Harvest	>40 percent.	39.6 percent	NO
Total Harvest	<1,000 <b>or</b> statistically significant reduction; only if reduction is independent of administrative action.	1,072	NO
Kill per Hunter Effort and Population Index	Statistically significant decline in <b>both</b> kill per hunter effort and in population index.	No decline in population index.	NO

