



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



Photo courtesy of US Forest Service.

## **BLACK BEAR TAKE REPORT 2019**

**September 29, 2021  
Wildlife Branch  
1010 Riverside Parkway  
West Sacramento, CA 95605**

## **Executive Summary**

The 2019 California black bear hunting season resulted in 1,389 bears taken, representing a 3.5% increase from the 2018 season harvest of 1,1342 bears. A total of 27,755 bear tags were issued. Overall hunter success was 5%. The success rate among hunters who reported an attempt to hunt was 10%. The bear hunting season ran its full length and closed December 29, 2019. The top five counties for reported take were: Trinity (9.2%), Shasta (8.5%), Siskiyou (7.34%), Mendocino (7.0%) and Plumas (6.8%). In the Private Lands Management (PLM) Program for 2019, there were 31 licensees that turned in their general tags for PLM bear tags and resulted with a program harvest of 2 bear.

Of the returned harvest report tags that reported sex, 39.7% (524) indicated a female was taken. Of the successful bear hunters who reported effort, approximately 83% (1,053) indicated they spent 7 days or less in pursuit of bear. Lastly, bears killed with the assistance of guides only accounted for 0.6% of the total bears harvested.

A premolar tooth was collected from the majority of hunter-killed bears (1,076) for age determination, which is one factor used to estimate the total population size within the bear hunt areas. Due to backlogs in sample processing, however the teeth collected in 2019 have not been processed at the time of this report. The Department will revisit 2019 age data when it becomes available, but to fill this data gap in the short term, averaged age proportions from the most recent three years of data were applied to the 2019 harvest total. From this analysis, the California Department of Fish and Wildlife (Department) produced an estimate of 21,529 ( $\pm 6,231$ ; 95% CI) bears in the area encompassed by the black bear hunt zone prior to the start of the 2019 bear hunting season. As bears occupy habitats outside the hunt area, the statewide population is likely greater than this estimate. The Department expects that the relatively lower population estimates found since 2013 are an artifact of reduced annual harvests rather than a true reflection of reduced population size. The Department's modeling method is explained in further detail in the Estimated Population Size section of this report.

## **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.

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 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 estimates. Age data are obtained from bear premolar teeth extracted from hunter-killed bears. The age-at-harvest data provide 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 monitor population trends. At the time of this report, however, teeth from the 2019 harvest are still being processed. To fill this data gap in the short term, averaged age proportions from the most recent three years of data were applied to the 2019 harvest total. The results of that analysis are also presented in this report.

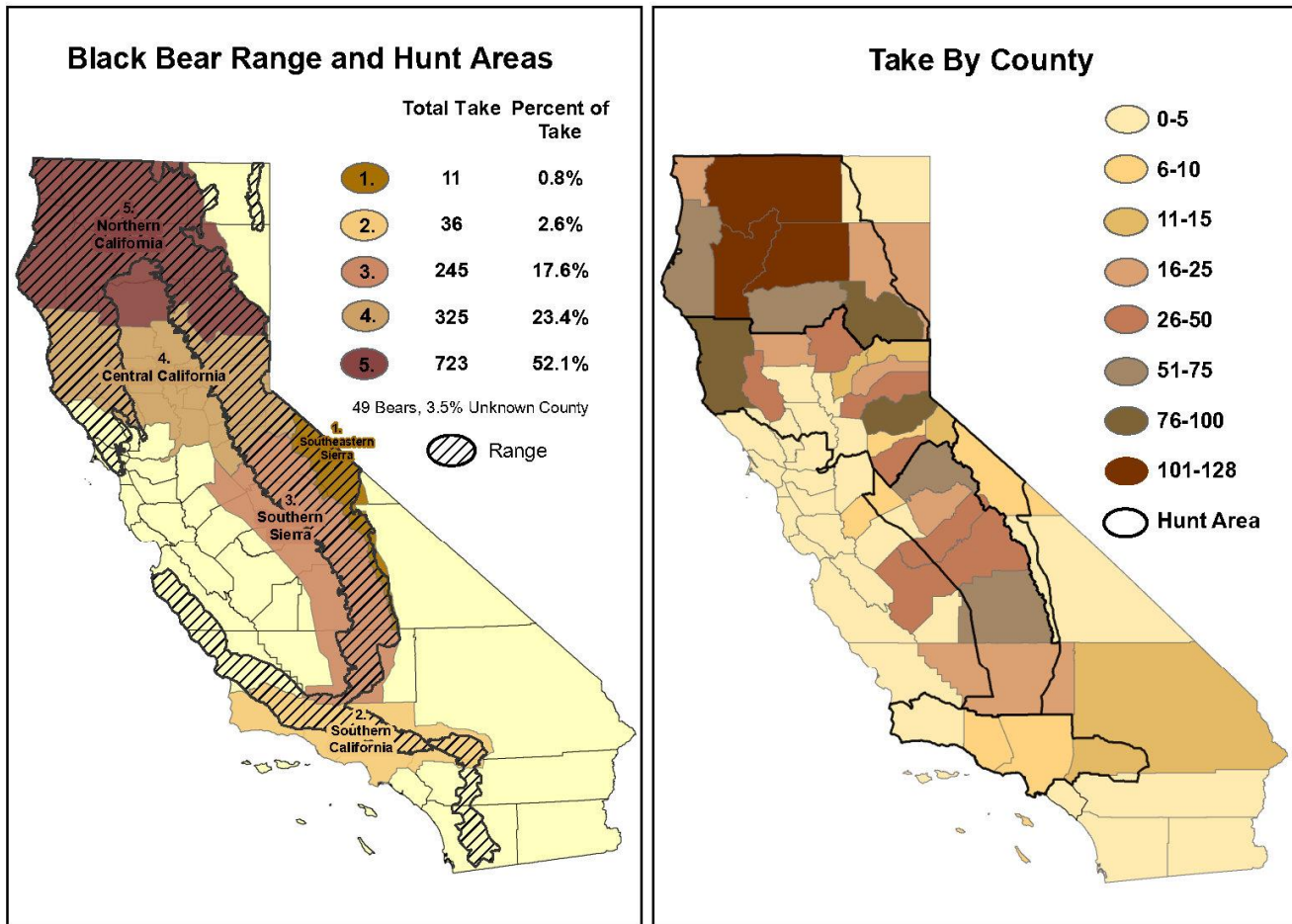
### **Summary of 2019 Bear Hunting Regulations**

Black bears are widely distributed in California forests and ranges, with Department bear hunt areas encompassing approximately 87% of the total estimated bear range (Figure 1). The 2019 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 2019 general bear season was to close when the Department received report of 1,700 bears taken, or on December 29, 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**

2019 Black Bear Range and Take Summary



## 2019 Hunt Season Results

### Season Length

The 2019 archery bear hunting season opened statewide on August 17 and ended on September 8. 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 12 (the second Saturday in October). The bear season closed on December 29 (the last Sunday in December) pursuant to California Code of Regulations, Title 14, section 365, making it the ninth season since 2010 that the bear season did not close early.

### **Tag Sales**

27,755 bear hunting tags were sold for the 2019 bear season. The total consisted of 27,654 resident bear tags (including Junior) and 101 non-resident bear tags. Total bear tag sales in 2019 was 0.5% (130) lower than 2018 bear tag sales (27,885) and 8.2% higher than the previous ten years' average. Non-resident bear tag sales increased by a total of 6.3% (6) from 2018 sales (95) with resident bear tag sales decreasing by 0.5% (136) over 2017 sales. This reflects an overall revenue increase of \$12,249 from 2018.

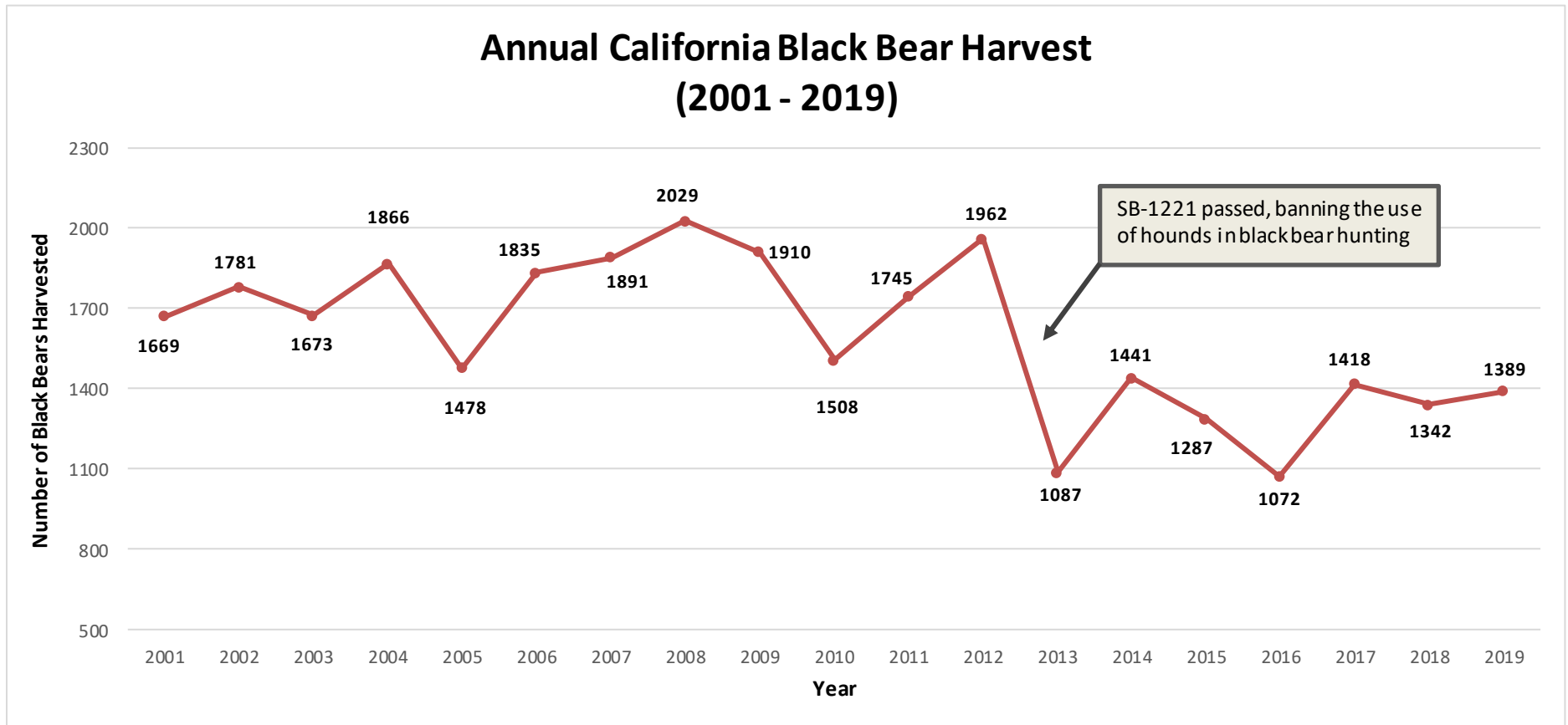
### **Total Take and Sex Composition**

During the 2019 black bear hunting season, 1,389 bears were taken. The 2019 bear take was 3.5% (47) higher than the 2018 hunt year (Figure 2) and 8.1% (112) higher than the previous three years' average take of 1,277 bears. Of the 1,389 bears taken, 796 (57.3%) were male, 524 (37.7%) were female, and 69 (5.0%) harvest report tags did not report sex (Figure 3).

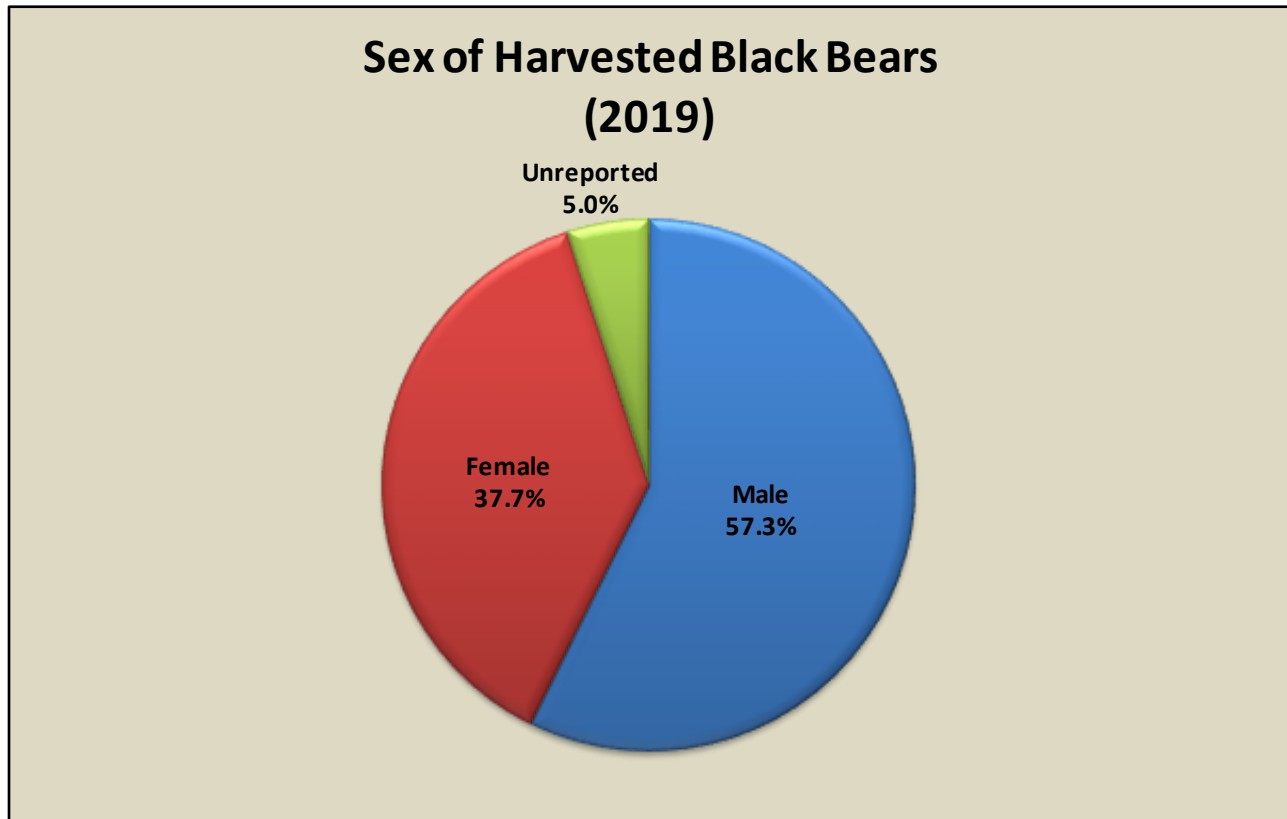


Photo Courtesy of the National Park Service.

Figure 2. Annual Bear Take



**Figure 3. Bear Take Sex Composition**

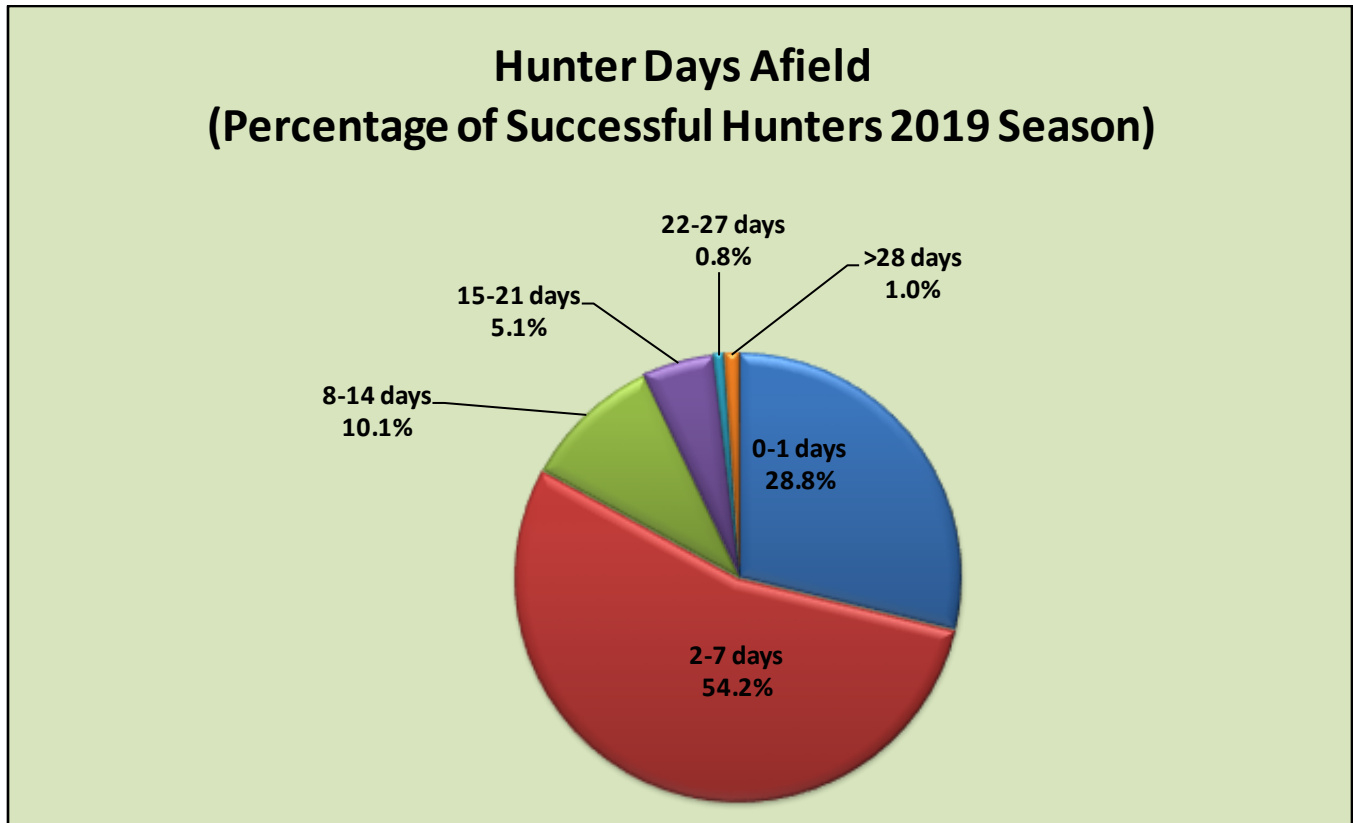


### **Hunter Effort**

Similar to 2018, 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, 28.8% spent a day or less in the field while 54.2% spent 2 to 7 days in the field. The remaining 17.0% reported spending 8 or more days in the field. Successful hunters reporting effort spent an average of 4.8 days in the field before taking a bear. The 2019 season average represents a 7.7% decrease in days spent afield for hunters when compared with the average of 5.2 days afield in the 2018 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 83.3% of bear take, followed by archery equipment (10.2%). Two archers used disabled archer licenses. Shotgun, pistol, muzzleloader, crossbow, and disabled hunter take comprised 1.2% of the total bear take (Figure 5). The remaining 5.4% did not report any method of take while harvesting bear. SB-1221 was passed in 2012 and prohibited the use of hounds in the take of bear. This law took effect January 1, 2013, so hounds are no longer listed in these reports as a method of bear take.

Individuals using a rifle spent an average 4.8 days in the field before taking a bear, whereas individuals using archery equipment spent an average 4.7 days and individuals using muzzleloaders spent an average 4 days in the field. Individuals hunting under a disabled archer license accounted for the lowest reported days afield average at 2.5 days before take.

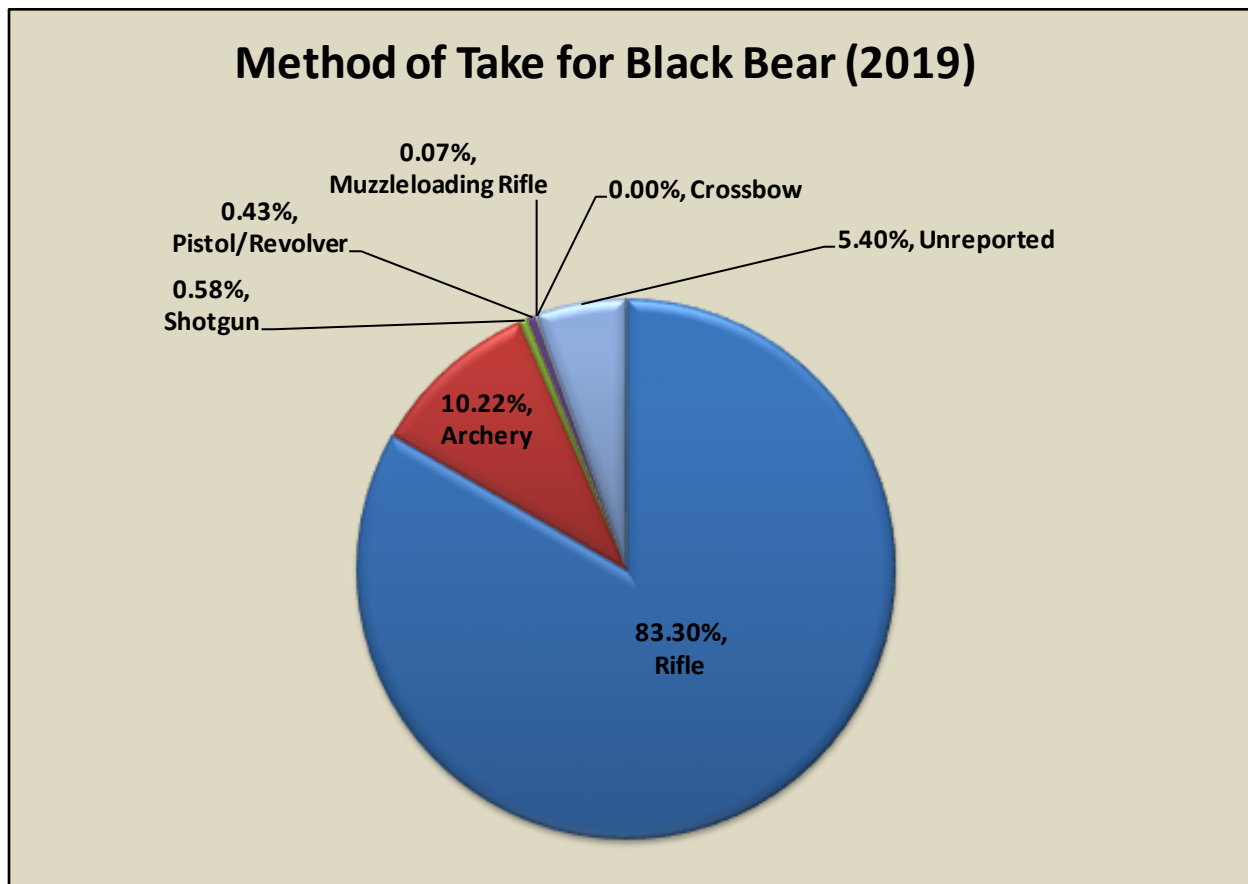
Hunters were also asked to report whether a bear was taken while hunting exclusively for bear, or while deer hunting. Similar to previous years, the 2019 season hunters who took bear while concurrently hunting deer accounted for the majority (59.0%) of the total harvest scenarios (Table 1). Only 6.6% of hunters reported taking their bear using archery equipment while deer hunting. A total of 35.1% of



hunters took their bear while exclusively bear hunting, with 3.6% of those hunting exclusively for bear using archery equipment.

In the 2018 hunt season, five (0.4%) of all successful bear hunters reported the use of a guide. Of all bear hunters reporting successful take in 2019, nine (0.6%) reported the use of a guide, representing no significant change.

**Figure 5. Method of Take Summary**



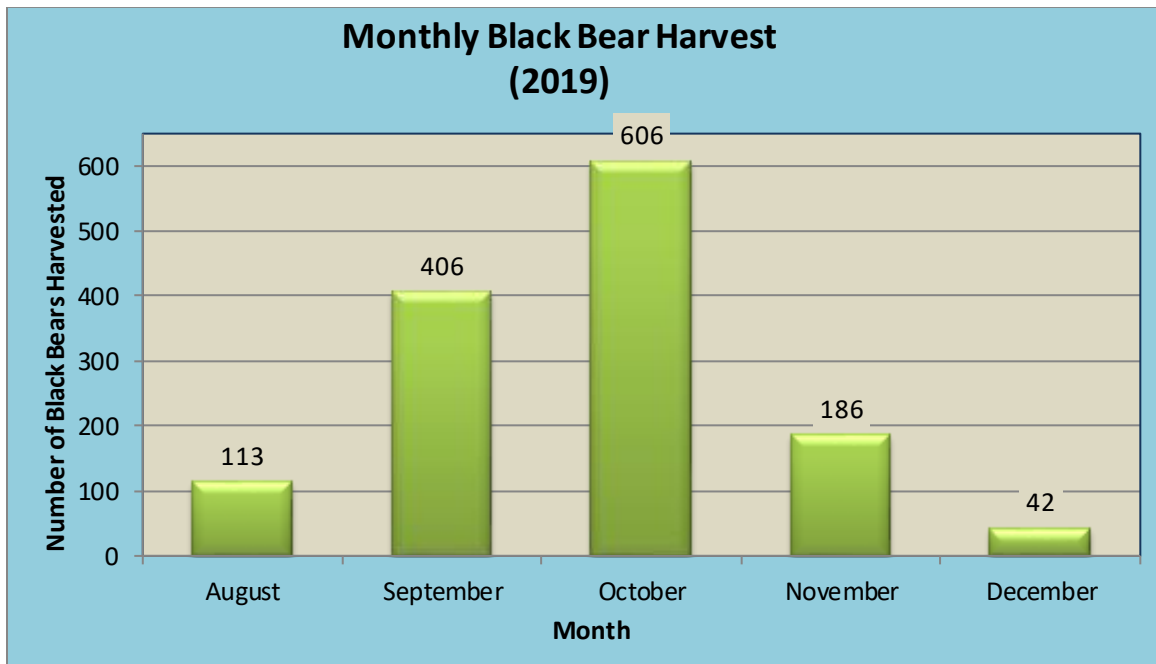
**Table 1. Take Summary by Target Species and Method of Take (2019)**

	Non-Archery	Archery	Unreported	Total
<b>Bear-targeted hunting</b>	31.5%	3.6%	0.0%	<b>35.1%</b>
<b>Took a bear while deer hunting</b>	52.5%	6.6%	0.0%	<b>59.0%</b>
<b>Unreported</b>	0.4%	0.1%	5.4%	<b>5.9%</b>
<b>Total</b>	<b>84.4%</b>	<b>10.2%</b>	<b>5.4%</b>	<b>100.0%</b>

### Timing of Take

Bears were predominantly harvested in September and October (Figure 6). Similar to previous years, fewer bears were harvested in November and December than in September and October.

**Figure 6. Monthly Bear Take**



### Location

Bears were reported to be harvested in 39 of California's 58 counties (Table 2). The top five counties for reported take were: Trinity (9.2%), Shasta (8.5%), Siskiyou (7.3%), Mendocino (7.0%) and Plumas

(6.8%). These five northern counties combined account for about 39% the total statewide 2019 bear harvest.

**Table 2. Bear Take by County**

County	# of Bears Reported Harvested	Percent of Total Harvest
ALPINE	15	1.08%
AMADOR	11	0.79%
BUTTE	38	2.74%
CALAVERAS	30	2.16%
COLUSA	2	0.14%
DEL NORTE	23	1.66%
EL DORADO	79	5.69%
FRESNO	49	3.53%
GLENN	20	1.44%
HUMBOLDT	75	5.40%
INYO	3	0.22%
KERN	23	1.66%
LAKE	30	2.16%
LASSEN	25	1.80%
LOS ANGELES	10	0.72%
MADERA	35	2.52%
MARIPOSA	16	1.15%
MENDOCINO	97	6.98%
MODOC	1	0.07%
MONO	8	0.58%
NAPA	1	0.07%
NEVADA	24	1.73%
PLACER	38	2.74%
PLUMAS	95	6.84%
RIVERSIDE	1	0.07%
SAN BERNARDINO	12	0.86%
SANTA BARBARA	4	0.29%
SHASTA	118	8.50%
SIERRA	18	1.30%
SISKIYOU	102	7.34%
STANISLAUS	9	0.65%
TEHAMA	59	4.25%
TRINITY	128	9.22%
TULARE	55	3.96%
TUOLUMNE	58	4.18%
UNKNOWN COUNTY	49	3.53%
VENTURA	9	0.65%
YOLO	5	0.36%
YUBA	14	1.01%
<b>Total</b>	<b>1389</b>	<b>100.00%</b>

## Estimated Population Size

A premolar tooth was collected 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 processed by an independent laboratory in Montana. An age-at-harvest model is used to produce a conservative estimate of total bear abundance within the bear hunt area at the time the black bear hunting season began. At the time of this report, teeth collected in 2019 are still being processed, and the Department will revisit 2019 age data when it becomes available. To fill this data gap in the short term, averaged age proportions from the most recent three years of data were applied to the 2019 harvest total to produce age estimates.

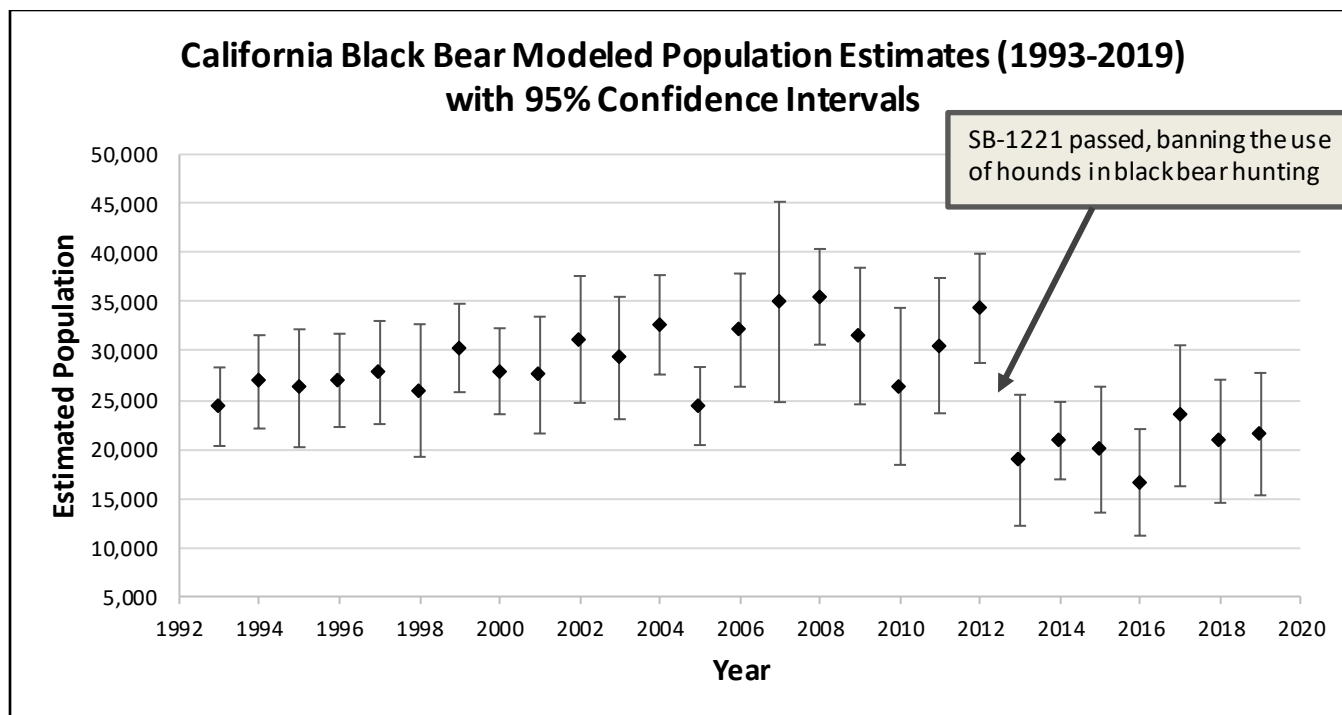
To produce a population estimate for a given year, the Department uses an age-at-harvest model reliant on the age and sex of bears harvested that year. In 2013, the use of hounds in the sport take of bears was prohibited, which violated a key assumption in the model regarding consistent hunter effort. Annual bear harvests have been relatively lower since this ban (Figure 2), resulting in correspondingly lower population estimates (Figure 7). The average population growth rate in the years following the ban (1.04 in 2013-2019) remains steady and on par with the average population growth rate in years before the ban (1.03 in 1993-2012). Due to this, the Department expects that the reduced population estimates are solely an artifact of the model's constraints. The Department is continuously working towards improving our methods of estimating bear abundance and changes in abundance over time.

The Department estimates approximately 21,529 ( $\pm 6,231$ : 95% CI) bears inhabited the black bear hunt area prior to the start of the 2019 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 2017 bear hunt areas, the statewide population is likely greater than this number.



Photo courtesy of Mike O'Shea and the National Park Service.

**Figure 7. Yearly Bear Population Estimates**



### 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, but one was unable to be measured at this time. Teeth collected from harvested bears in 2019 are still being processed at the time of this report, so the Department will revisit this threshold when those data become available. Females comprised 39.7% of the harvested bears of known sex, which is below the 40% level of concern (Figure 3). Total bear harvest did not drop below the threshold (harvest less than 1,000), nor was there a reduction in harvest compared to the previous three years' average. There was no decline in kill per hunter effort.

To better reflect true population trends over time, the Department has re-calculated population estimates for 2013-2016 with the methodology used in this report, rather than what was previously published. These are 18,868, 20,865, 19,948, and 16,616, respectively (Figure 7). There was therefore no decline in the 2019 population estimate compared to the 2016-2018 average.



**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 ( $P < 0.05$ ) reduction in median age for combined sexes.	Data not currently available. To be revisited.	TBA
Percent Females in Harvest	>40%	39.7%	NO
Total Harvest	<1,000 <b>or</b> statistically significant (< 95% CI) reduction; only if reduction is independent of administrative action.	1,389 No reduction in harvest.	NO
Kill per Hunter Effort and Population Index	Statistically significant decline in <b>both</b> kill per hunter effort ( $P < 0.05$ ) and population estimate (< 95% CI) .	No decline in kill per hunter effort or population estimate.	NO



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