



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



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BLACK BEAR TAKE REPORT 2020

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

Executive Summary

The 2020 California black bear hunting season resulted in 1,028 bears taken, representing a 26% decrease from the 2019 season harvest of 1,389 bears. A total of 30,387 bear tags were issued. Overall hunter success was 3%. The success rate among hunters who reported an attempt to hunt was 7%. The bear hunting season ran its full length and closed December 27, 2020. The top five counties for reported take were: Shasta (11.3%), Trinity (7.9%), Siskiyou (7.4%), Tuolumne (6.3%) and Mendocino (5.6%). In the Private Lands Management (PLM) Program for 2020, there were 27 licensees that turned in their general tags for PLM bear tags and resulted with a program harvest of 4 bear.

Of the returned harvest report tags that reported sex, 38.05% (387) indicated a female was taken. Of the successful bear hunters who reported effort, approximately 79% (801) indicated they spent 7 days or less in pursuit of bear. Lastly, bears killed with the assistance of guides only accounted for 1% of the total bears harvested.

In most years, a premolar tooth is collected from hunter-killed bears for age determination, which is one factor used to estimate population size within the bear hunt area. In 2020 however, emergency social distancing measures were put in place in response to the COVID-19 pandemic, and teeth were not collected. To fill this data gap, averaged age proportions from the most recent three years of data were applied to the 2020 harvest total. From this analysis, the California Department of Fish and Wildlife (Department) produced an estimate of 15,934 ($\pm 6,163$; 95% CI) bears in the area encompassed by the black bear hunt zone prior to the start of the 2020 bear hunting season. As bears occupy habitats outside the 2020 hunt areas, 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 the 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.

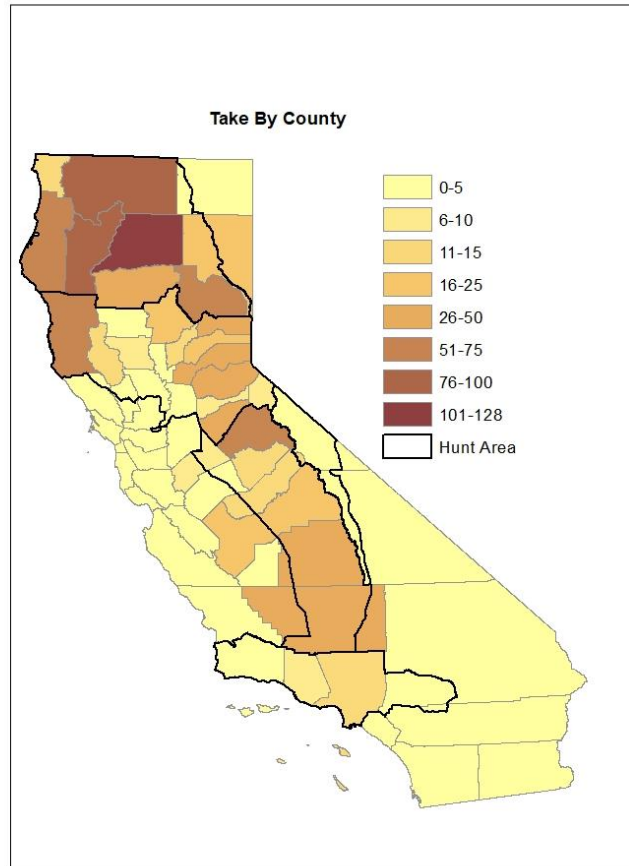
In addition to the data derived from the on-line reported or returned harvest report tags, the Department also typically relies on the age estimates of bears taken during the season to develop population abundance estimates. Age data are obtained from bear premolar teeth collected from hunter-killed 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. In 2020 however, the collection of teeth was not possible due to the COVID-19 pandemic, and averaged age proportions from prior years were used.

Summary of 2020 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 2020 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 2020 general bear season was to close when the Department received report of 1,700 bears taken, or on December 27, 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. 2020 Black Bear Range and Take Summary



2020 Hunt Season Results

Season Length

The 2020 archery bear hunting season opened statewide on August 15 and ended on September 6. 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 10 (the second Saturday in October) and closed on December 27 (the last Sunday in December) pursuant to California Code of Regulations, Title 14, section 365, making it the tenth season since 2010 that the bear season did not close early.

Tag Sales

30,387 bear hunting tags were sold for the 2020 bear season. The total consisted of 30,249 resident bear tags (including Junior) and 138 non-resident bear tags. Total bear tag sales in 2020 was 9.5% (2,632) higher than 2019 bear tag sales (27,755) and 17.1% higher than the previous ten years' average. Non-resident bear tag sales increased by a total of 36.6% (37) from 2019 sales (101) with resident bear tag sales increasing by 9.4% (2595) over 2019 sales. This reflects an overall revenue increase of \$136,890 from 2019.

Total Take and Sex Composition

During the 2020 black bear hunting season, 1,028 bears were taken. The 2020 bear take was 26% (361) lower than the 2019 hunt year (Figure 2) and 25.5% (355) lower than the previous three years' average take of 1,383 bears. Of the 1,028 bears taken, 630 (61.3%) were male, 387 (37.6%) were female, and 11 (1.1%) harvest report tags did not report sex (Figure 3).



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Figure 2. Annual Black Bear Take

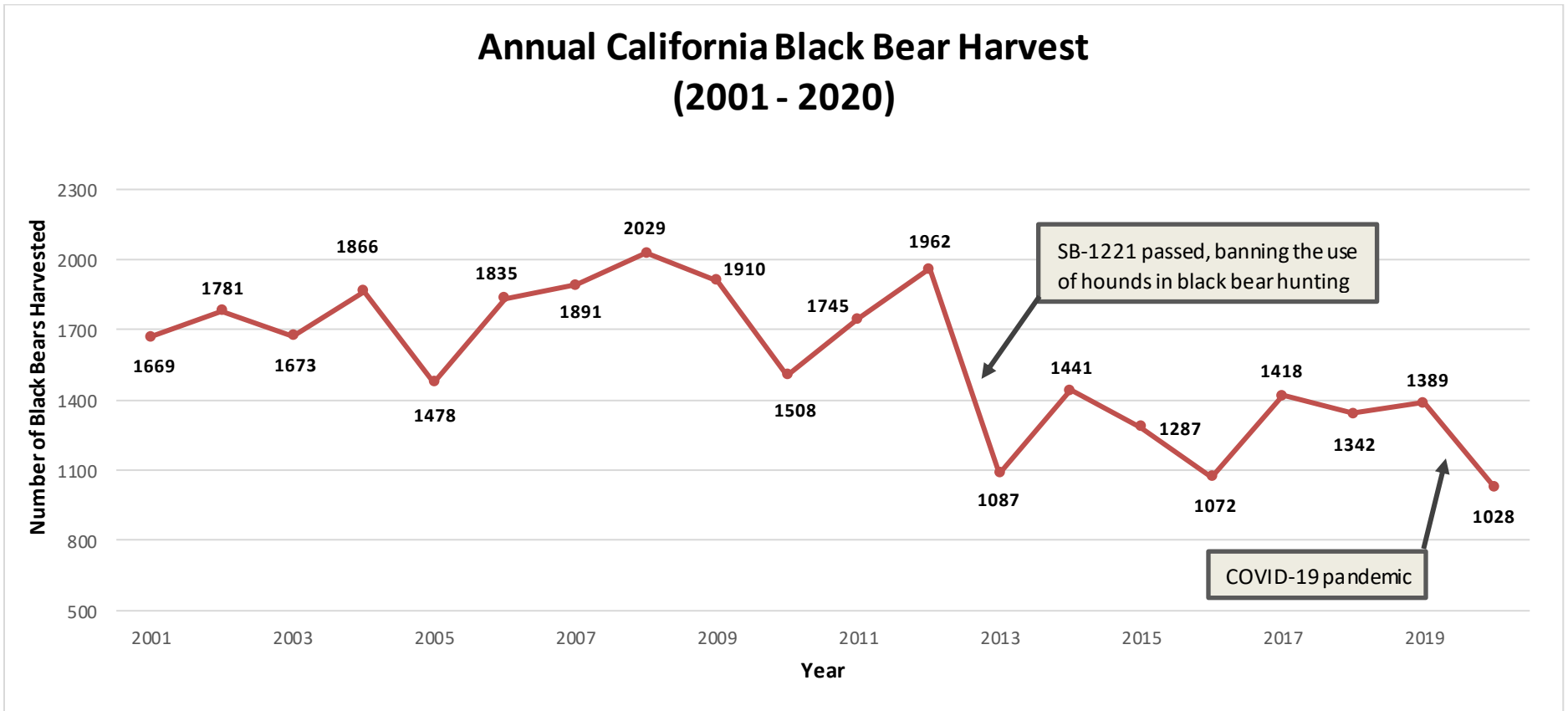
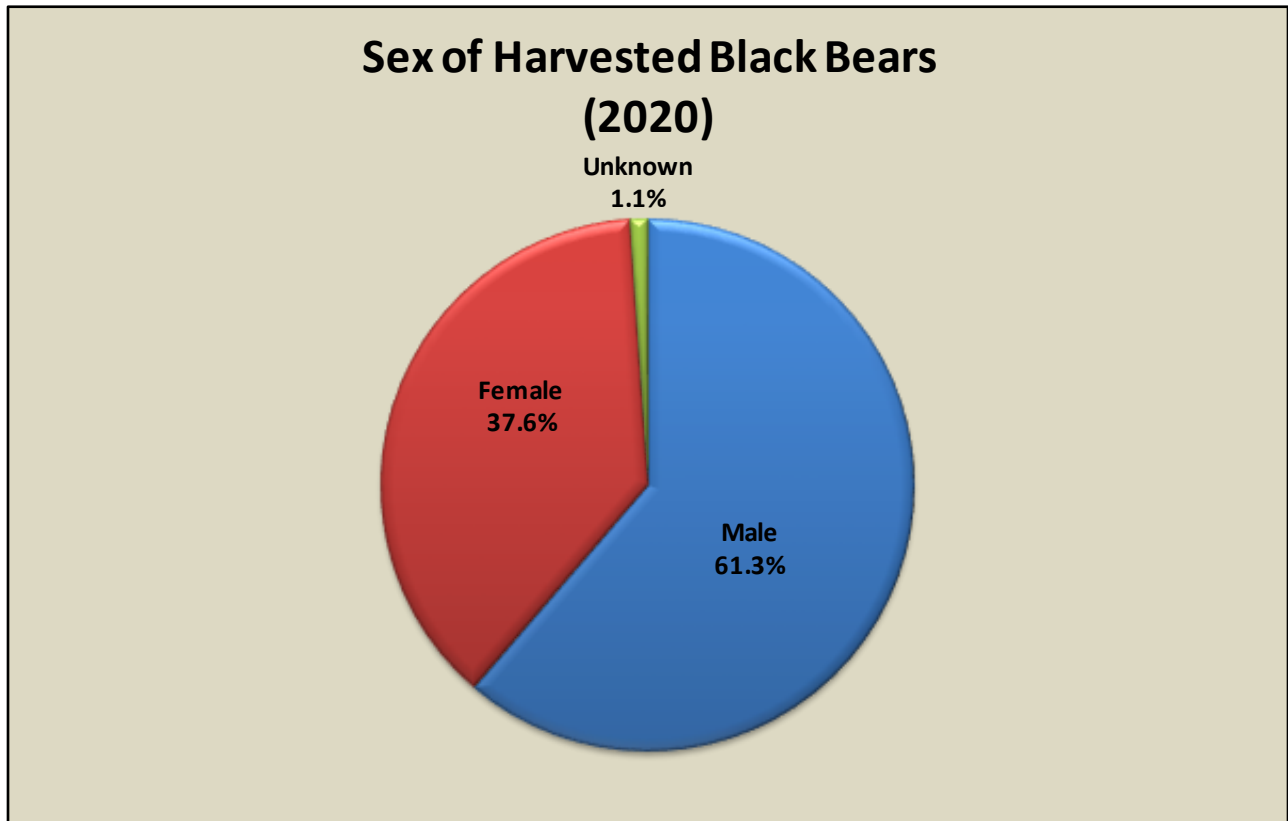


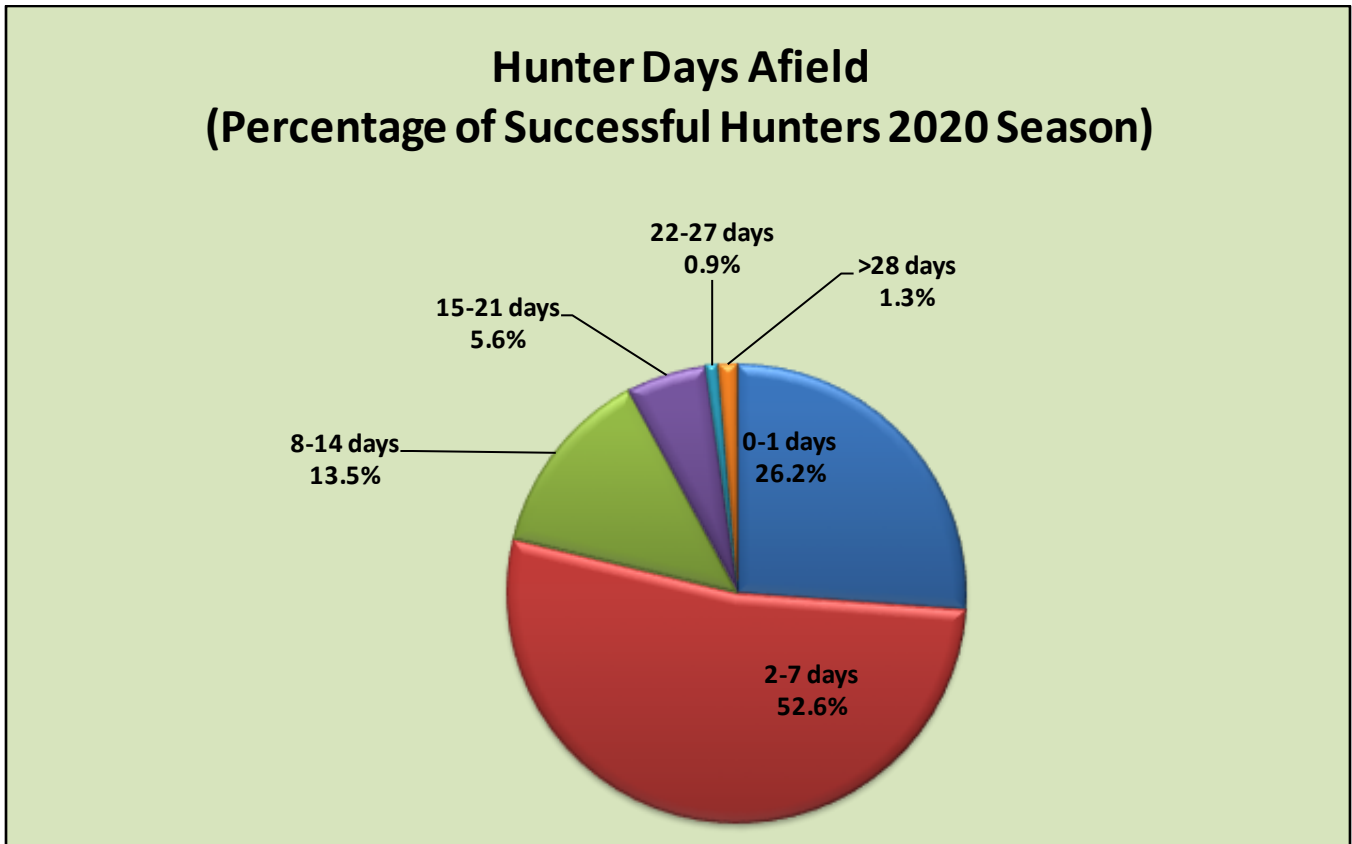
Figure 3. Bear Take Sex Composition



Hunter Effort

Similar to 2019, 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, 26.2% spent a day or less in the field while 52.6% spent 2 to 7 days in the field. The remaining 21.2% reported spending 8 or more days in the field. Successful hunters reporting effort spent an average of 5 days in the field before taking a bear. The 2020 season average represents a 1.1% increase in days spent afield for hunters when compared with the average of 4.8 days afield in the 2019 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 81.9% of bear take, followed by archery equipment (16.6%). 13 archers used disabled archer licenses. Shotgun, pistol, muzzleloader, and crossbow comprised 0.5% of the total bear take (Figure 5). The remaining 1% 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 5.3 days in the field before taking a bear, whereas individuals using archery equipment spent an average 4.9 days and individuals using muzzleloaders spent an average 7 days in the field. Individuals hunting under a disabled archer license accounted for the lowest reported days afield average at 3.2 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 2020 season hunters who took bear while concurrently hunting deer accounted for the majority (54.1%) of the total harvest scenarios (Table 1). Only 9.4% of hunters reported taking their bear using archery equipment while deer hunting. A total of 44.5% of

hunters took their bear while exclusively bear hunting, with 7% of those hunting exclusively for bear using archery equipment.

In the 2019 hunt season, 9 (0.6%) successful bear hunters reported the use of a guide. Of all bear hunters reporting successful take in 2020, 11 (1.1%) reported the use of a guide, representing no significant change.

Figure 5. Method of Take Summary

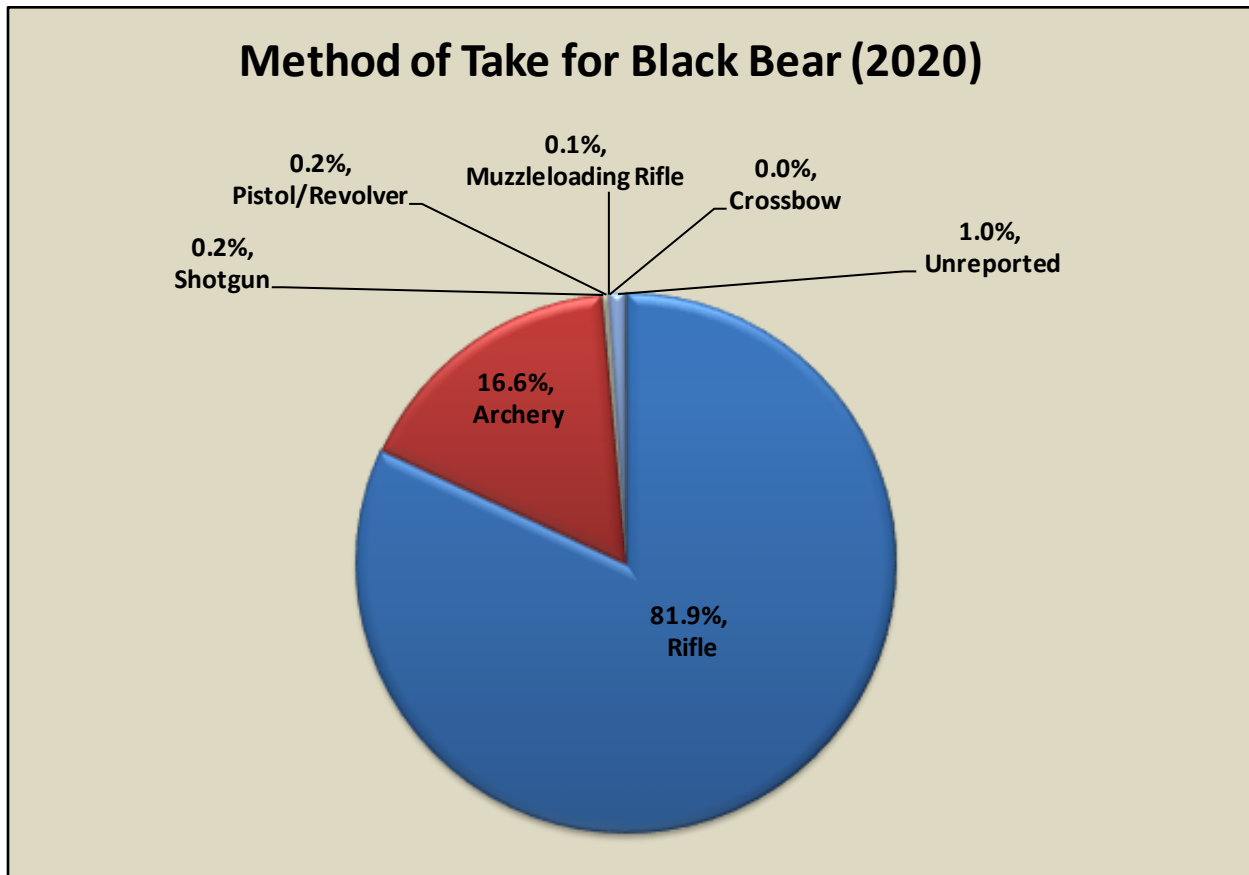


Table 1. Take Summary by Target Species and Method of Take (2020)

	Non-archery	Archery	Unreported	Total
Bear-targeted hunting	37.5%	7.0%	0.0%	44.5%
Took a bear while deer hunting	44.6%	9.4%	0.0%	54.1%
Unreported	0.3%	0.2%	1.0%	1.5%
Total	82.4%	16.6%	1.0%	100.0%

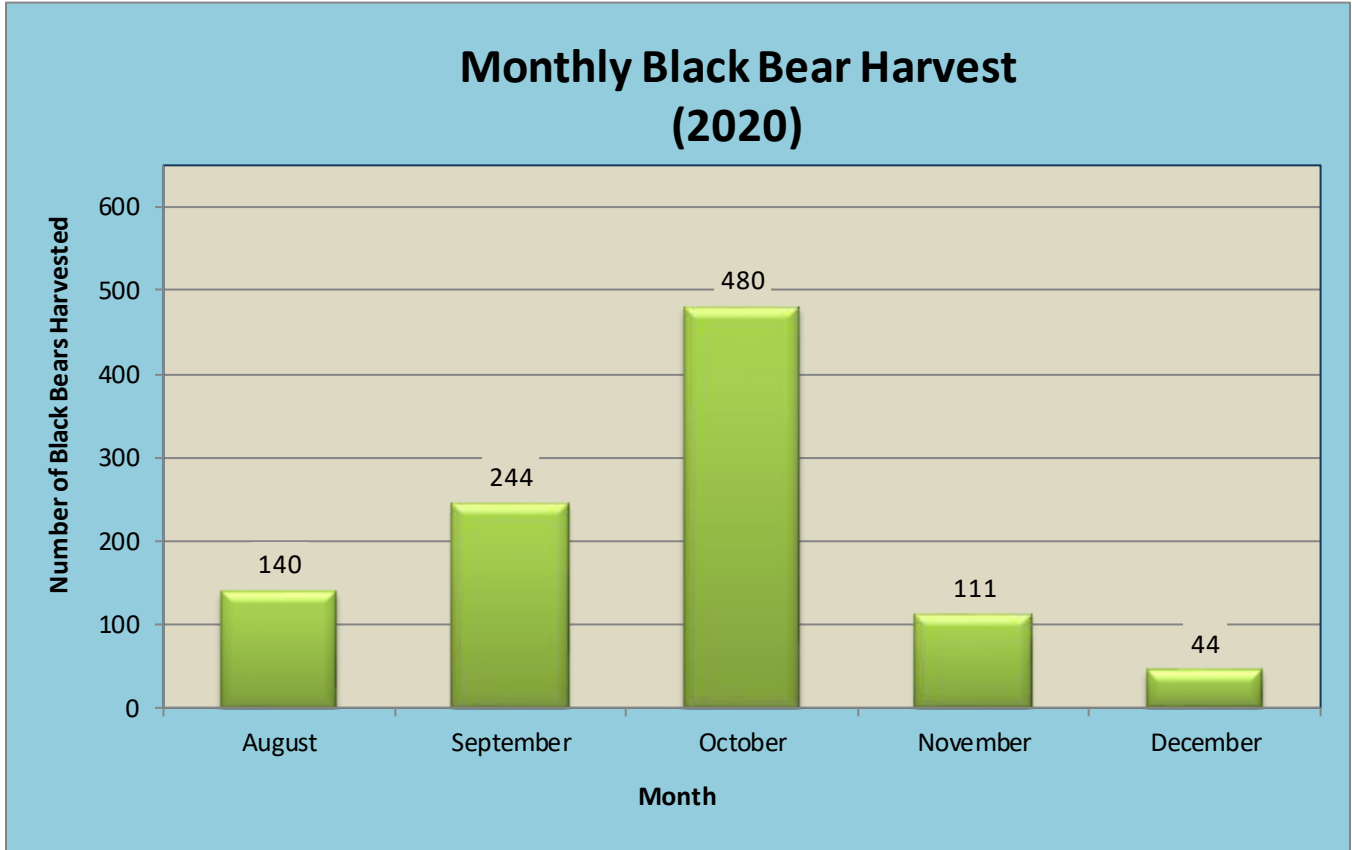
Timing of Take

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.



Photo courtesy CDFW Flickr®.

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: Shasta (11.3%), Trinity (7.9%), Siskiyou (7.4%), Tuolumne (6.3%) and Mendocino (5.6%). These five northern counties combined account for about 39% of the total statewide 2020 bear harvest.

Table 2. Bear Take by County

County	# of Animals Reported Harvested	Percent of Total Harvest
ALPINE	9	0.88%
AMADOR	7	0.68%
BUTTE	17	1.65%
CALAVERAS	28	2.72%
COLUSA	9	0.88%
DEL NORTE	12	1.17%
EL DORADO	49	4.77%
FRESNO	21	2.04%
GLENN	5	0.49%
HUMBOLDT	56	5.45%
INYO	3	0.29%
KERN	49	4.77%
LAKE	13	1.26%
LASSEN	24	2.33%
LOS ANGELES	14	1.36%
MADERA	15	1.46%
MARIPOSA	14	1.36%
MENDOCINO	58	5.64%
MERCED	1	0.10%
MONO	5	0.49%
NAPA	1	0.10%
NEVADA	21	2.04%
PLACER	43	4.18%
PLUMAS	54	5.25%
RIVERSIDE	1	0.10%
SACRAMENTO	1	0.10%
SAN BERNARDINO	3	0.29%
SANTA BARBARA	5	0.49%
SHASTA	116	11.28%
SIERRA	30	2.92%
SISKIYOU	76	7.39%
SONOMA	2	0.19%
STANISLAUS	6	0.58%
TEHAMA	35	3.40%
TRINITY	81	7.88%
TULARE	46	4.47%
TUOLUMNE	65	6.32%
UNKNOWN COUNTY	10	0.97%
VENTURA	9	0.88%
YOLO	2	0.19%
YUBA	12	1.17%
TOTAL	1028	100.00%

Estimated Population Size

In normal years, a premolar tooth is collected from nearly all hunter-killed bears for age determination, which is one factor used to calculate the population size within the bear hunt zone. 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 zone at the time the black bear hunting season began. In 2020, tooth collection was not possible due to restrictions put in place in response to the COVID-19 pandemic. Averaged age proportions from the most recent three years of age data (2015-2017, at the time of this report) were applied to the 2020 total harvest to produce age estimates.

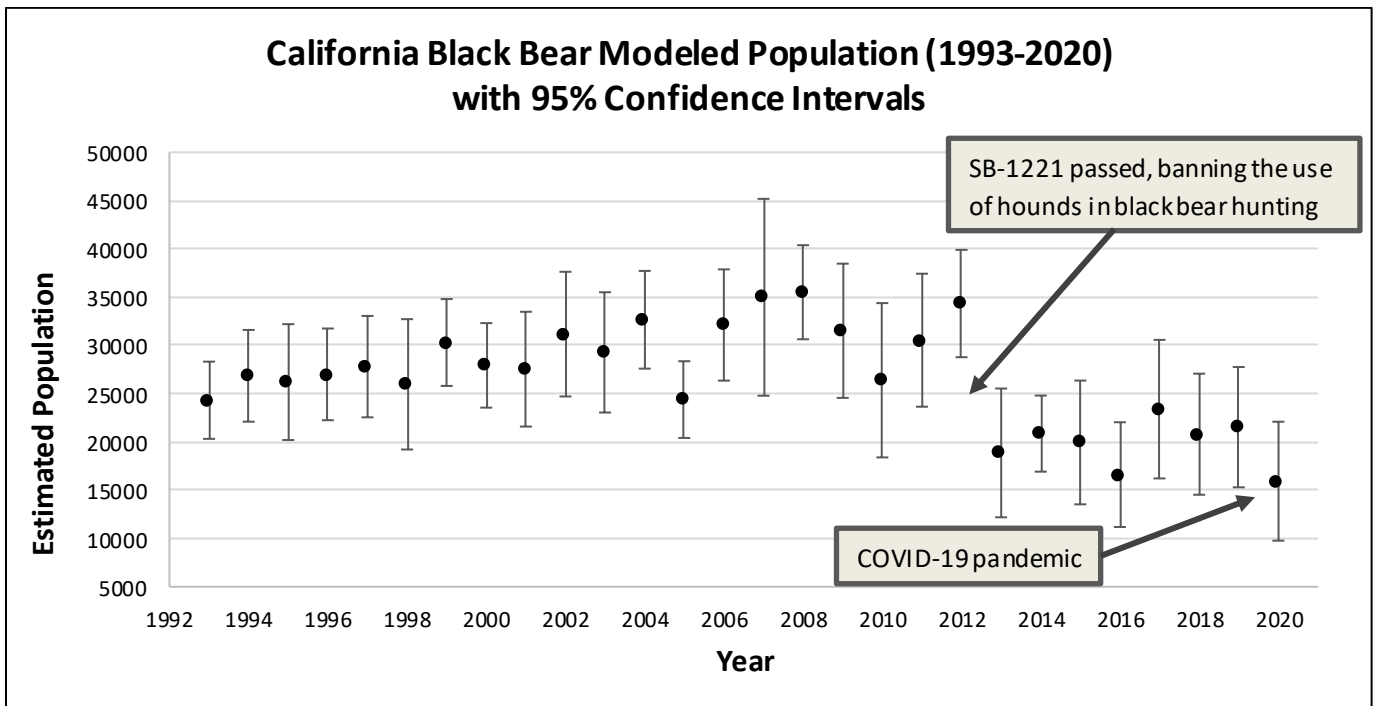
To produce a population estimate for a given year, the Department uses an age-at-harvest model reliant on the age and sex of bears harvested that year. In 2013, the use of hounds in the sport take of bears was prohibited, which violated a key assumption in that model regarding consistent hunter effort. 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 (1.00 in 2013-2020) 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 15,934 ($\pm 6,163$: 95% CI) bears inhabited the black bear hunt area prior to the start of the 2020 bear hunting season (Figure 1). It is important to note that this method only estimates bears within the bear hunt area, prior to the commencement of the previous year's hunting season. As bears occupy habitats outside the bear hunt area, the statewide population is likely greater than this estimate.



Photo courtesy CDFW Flickr®.

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. Due to restrictions put in place in response to the COVID-19 pandemic, teeth were not collected from harvested bears, and median ages cannot be determined. Females comprised 38.05% of harvested bears of known sex, which remains below the 40% level of concern (Figure 3). While there was statistically significant reduction in harvest compared to previous years' averages, this was not independent of administrative action. The COVID-19 pandemic response included stay-at-home orders across the state, which likely prevented many hunters from hunting in 2020. There was a decline in both kill per hunter effort and the population estimate compared to the averages of the past three years, but only the decline in kill per hunter effort was determined to be statistically significant.

Table 3. Resulting Monitoring Matrix

Monitoring Technique	Threshold of Concern	2020 Data	Threshold Exceeded?
Median Ages of Hunter Killed Bears	Female ages <4.0 years old; -or- statistically significant ($P < 0.05$) reduction in median age for combined sexes.	Information not available for 2020.	N/A
Percent Females in Harvest	>40 percent.	38.05%	NO
Total Harvest	<1,000 or statistically significant (< 95% CI) reduction; only if reduction is independent of administrative action.	1,028 This is a statistically significant reduction, but it is not independent of administrative action.	NO
Kill per Hunter Effort and Population Estimate	Statistically significant decline in both kill per hunter effort ($P < 0.05$) and population estimate (< 95% CI) .	Statistically significant decline in kill per hunter effort. Decline in population estimate was not statistically significant.	NO