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State of California
THE RESOURCES AGENCY
Department of Fish and Game

THE HARVEST OF BOBCATS IN CALIFORNIA, 1985-86^{1/}

by
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ABSTRACT

An estimated 9,824 bobcats were taken during the 1985 hunting year and the 1985-86 trapping season. Approximately 6,927 bobcats were taken by trappers and 2,861 by hunters. The total take was a decrease of about 700 from the 1984-85 year and was lower than any total take since 1976-77 except for the 1983-84 season. As has become normal, the greatest take continued to occur in counties along California's south coast although most of the current year's decrease in take occurred in southern California. Data on the bobcat harvest were gathered through the process of tagging bobcat furs for export, the annual trapping report and hunter survey, and from the U.S. Fish and Wildlife Service depredation control records.

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RECOMMENDATIONS

1. Discontinue statewide monitoring of the age and sex structure of bobcat populations until such time as the statewide or regional maximum harvest limits are reached.
2. Continue to monitor the take of bobcats by geographical area in order to use that information to determine the management needed to maintain viable bobcat populations throughout California.

INTRODUCTION

The Department has maintained records on the take of bobcats since the early 1920's and the instigation of the annual report of licensed trappers. These records document the quantity of take according to the three major harvest methods -- commercial harvest, depredation control, and sport take.

Commercial harvest has varied since 1920, the result of variations in demand and fur value. There have been two periods of high commercial harvest. In the late 1920's the high demand and fur prices resulted in at least four seasons where the reported commercial harvest exceeded 5,000 bobcats with an all-time season high commercial harvest of 12,250 reported in 1927-28. The second peak occurred in the late 1970's and has continued through the current season. Commercial harvest has been above 7,300 bobcats for the last eight seasons and has averaged 8,490 bobcats harvested per year over that period.

For many years, particularly from the mid-1930's to 1970, the take of bobcats for depredation control was a more important cause of bobcat mortality than was commercial harvest. The Animal Control Division of the U.S. Department of Agriculture (formerly of the U.S. Fish and Wildlife Service) has handled depredation complaints and performed prophylactic predator control since the 1920's. The State of California, through the Department of Fish and Game, employed trappers to perform work similar to the federal animal control project from 1932 to 1954. During the peak period, the total annual take by depredation control personnel was never below 1,000 bobcats and exceeded 3,000 in 15 years and peaked at 4,061 in 1947-48. Since 1970 and the recognition that bobcats generally were not a depredation problem, annual take for depredation control on a specific problem-by-problem basis has resulted in a take averaging 37 bobcats per year.

The Department has been monitoring the sport hunting take of bobcats only since 1968. Since that time there has been a dramatic decrease in the sport hunting take of bobcats because of major regulation changes. Prior to 1974 there was no closed season on bobcats and the average annual take, as reported by the Department's annual Hunter Survey, was 37,654 with a peak of 46,652 in 1968. From 1974 to 1977 the sport hunting season coincided with the commercial season and started later than the closing dates of most deer seasons. It appears that most of the high sport take of bobcat was the result of deer hunters taking bobcats while deer hunting and that it took approximately four seasons (1974-77) for deer hunters to become aware of the season on bobcats. From 1978 to 1982, the sport hunting take dropped to less than 7,500 bobcats per year. Since the further reduction of the sport hunting season length in 1980, and the subsequent bag limits and the requirement of bobcat hunting tags, the reported sport harvest has averaged 2,461 bobcats and has not exceeded 3,400.

The rapid increase in commercial take in the mid-1970's and the sustaining of that take since has caused considerable concern. Public interest on local, domestic and international fronts has provided the impetus for increased management effort by federal and state wildlife agencies. The history of this political and management interest is documented in the Progress Report (Project W-65-R-3, Job IV-10).

The goal of this study was to develop a management plan to insure that any type of harvest of bobcats in California is not detrimental to the state or

any regional population of the species. The specific objective of this report is to assess the annual bobcat harvest on a regional basis so that this information may be used with population structure data to determine the impact of harvest on bobcat populations. Ultimately, this procedure also will provide a method to monitor the impacts of harvest by monitoring only the quantity of harvest.

METHODS

The quantity of commercial harvest is determined through assessment of mandatory, annual reports of licensed trappers and through a mandatory export tagging program for all bobcat furs. Commercial fur takers report their take at the end of each license year (fiscal year) giving the quantity of take of each species by county. Anyone possessing or wishing to sell or to transport a bobcat fur must have it tagged. As part of the tagging process, the taker must supply information on the place, date and method of take and provide other biological information for determining the age of the harvested bobcat.

The sport hunting take is determined through the Department's annual hunter survey. This survey queries a 2% to 4% sample of California's licensed hunters on their hunting effort and success for various species. Information on total take, distribution of hunting effort, and percent successful hunters is gathered on bobcat hunting from this survey. Additional information on sport hunting is gathered through the sale of hunting tags and their return. Sport hunters are required to report their kill and provide specific information.

All depredation take must be reported to the Department. This information is reported directly by the person doing the taking or from the public agencies doing the depredation control work.

RESULTS

The total estimated take of bobcats during 1985-86 was 9,824 individuals (Table 1). This was about 700 less (7%) than were taken during 1984-85, and from 4,602 less to 1,128 more than were taken since more stringent regulations on the harvest of bobcats have been in effect in California. Trappers continue to take the majority (70%) of bobcats and the total hunter take was similar to that of last year and of the 1981-82 and 1982-83 seasons. The total take of bobcats ranged from none in four counties to 1,052 in San Bernardino County (Table 2). The harvest in each of the ten counties having the highest total take was at least 371, compared to 391 last year. Despite a lower statewide harvest, 23 counties reported a take of more than 100 bobcats this year; last year more than 100 bobcats were taken from 25 counties.

As normal, the vast majority of bobcats are harvested from counties in southern California (Table 2). Two counties from the South Sierra area and one from the Southern California area had the highest commercial take (Table 3). Four of the six counties in the South Coastal area and two from the Southern California area constituted the majority of the representation in the top ten counties in commercial take. Humboldt County was the only northern California representative in the top ten.

Table 1. Estimated Annual Take of Bobcats by Hunting and Trapping in California, 1976-77 to 1985-86.

Season	Total Commercial Take (IA+IB)	Commercial Trapper Take (IA)	Commercial Hunter Take (IB)	Total Hunter Take (II)	Animal Damage Control Take (III)	Total Annual Take (IA+II+III)
1976-77	5400	5000	400	10500	347	15847
1977-78	5150	4650	500	15300	208	20158
1978-79	8325	6825	1500	5811	56	12692
1979-80	7809	6686	1123	7708	32	14426
1980-81	9595	8702	893	3737	24	12463
1981-82	9337	8162	1175	3037	34	11233
1982-83	8513	7427	1086	2951	48	10426
1983-84	7362	6576	786	2077	43	8696
1984-85	8897	7495	1402	2993	48	10536
1985-86	8099	6927	1172	2861	36	9824

The 9% decrease in commercial take from last year was representative of a general trend in areas where bobcat take is substantial (Table 4). The decrease was most noticeable (from 16 to 31%) in the two most northern areas of the state and in the Southern Sierra. These are the same areas which showed the most dramatic increases in take in the 1984-85 season.

The market for bobcat fur has become relatively stable in both political and economic terms. There was no national or international regulatory action pending which might have influenced the demand for bobcat furs. However, the average value for a raw bobcat fur decreased 11.6% from last year, but still remained within the normal range of average prices seen in the previous eight seasons (Table 5). The decrease in the harvest of bobcat from last year is probably the result of the decrease in the value of bobcat fur and the continued reduced value of coyote and gray fox fur.

Indications from the trends in average take per trapper over the last ten seasons are that it was just as easy, if not easier, to catch a bobcat in 1985-86 as in 1975-76 (Table 6). This would imply that the trappable population of bobcats is as large now as it has been. The continued maintenance of a relatively high take of bobcats per trapper indicates that the bobcat resource was abundant during the 1985-86 season.

As usual the commercial take of bobcats was mostly (85.1%) by trapping (Table 7). The take by dogs, of 13.2% of the total take, was similar to the percent taken by this method last year and higher than the average over the past six seasons. Only about 0.1% of the bobcat furs were salvaged road kills and of the remaining, 0.6% were taken through the use of a predator call and 0.7% were taken by hunting where the specific method was not given. The same areas appear to support more dog hunting year after year with Humboldt and Tulare counties as prime examples. Predator calling only occurs erratically as a commercial hunting method.

Table 2. Take of Bobcats by County during the 1985-86 Season.

County	Licenced Trapper Take	Commercial Hunter Take	Sport Hunter Take	Animal Control Take	Total County Take
Alameda	5	1	17		23
Alpine	18				18
Amador	2		18		20
Butte	8	2	7		17
Calaveras	9	1	8		18
Colusa	87				87
Contra Costa			18		18
Del Norte	25	2			27
El Dorado	32	4	23	1	60
Fresno	230	33	40		303
Glenn	71				71
Humboldt	221	140	9	1	371
Imperial	10		9		19
Inyo	329	3	15		347
Kern	724	137	86		947
Kings	12				12
Lake	63	1	63		127
Lassen	86	22	4		112
Los Angeles	332	2	53		387
Madera	32		82	2	116
Marin		22		4	26
Mariposa	73	21		3	97
Mendocino	47	42	67	4	160
Merced		1			1
Modoc	163	18			181
Mono	56		18		74
Monterey	464	98	59		621
Napa	45		55		100
Nevada	2				2
Orange	43		18		61
Placer	3	2			5
Plumas	23		64		87
Riverside	237	5	59		301
Sacramento					0
San Benito	57	30	134		221
San Bernardino	804	21	226	1	1052
San Diego	417	46	165		628
San Joaquin	1				1
San Luis Obispo	288	29	44	3	364
San Mateo				1	1
Santa Barbara	487	6	21	2	516
Santa Clara	55	21	4		80
Santa Cruz			9		9
Shasta	113	77	41		231
Sierra	6		9		15
Siskiyou	249	54	129	9	441
Solano					0
Sonoma	46	14	9	5	74
Stanislaus	45	1	8		54
Sutter					0
Tehama	35	8	19		62
Trinity	14	18			32
Tulare	291	286	9		586
Tuolumne	108	3	52		163
Ventura	422		18		440
Yolo	18				18
Yuba	19	1			20
Total	6927	1172	1689	36	9824

No bobcats were reported taken in Sacramento, San Francisco, Solano and Sutter Counties.

Table 3. Ten Counties Reporting Highest Commercial Take of Bobcats 1971-86.

Rank	1971-72	1972-73	1973-74	1974-75	1975-76
1	Modoc	Merced	San Diego	San Diego	Humboldt
2	Shasta	Modoc	Modoc	Modoc	San Diego
3	Merced	Shasta	Tehama	Lassen	Modoc
4	Lassen	Siskiyou	Tuolumne	Humboldt	Shasta
5	Siskiyou	Humboldt	Siskiyou	Inyo	Inyo
6	Riverside	Sierra	Humboldt	Siskiyou	Siskiyou
7	San Bernardino	Tehama	Mendocino	Colusa	Riverside
8	San Diego	San Bernardino	Shasta	Riverside	San Bernardino
9	Humboldt	Butte	Lake	Fresno	Solano
10	Plumas	San Diego	Solano	Lake	Lake
Rank	1976-77	1977-78	1978-79	1979-80	1980-81
1	Humboldt	San Bernardino	Humboldt	Santa Barbara	San Bernardino
2	San Bernardino	Humboldt	San Bernardino	Humboldt	Monterey
3	Santa Barbara	Tulare	Shasta	Tulare	Santa Barbara
4	Shasta	Santa Barbara	Kern	Kern	San Luis Obispo
5	San Benito	Kern	Siskiyou	San Bernardino	Humboldt
6	Mendocino	Inyo	Santa Barbara	Siskiyou	Tulare
7	Tulare	Mendocino	Inyo	San Diego	Mendocino
8	Fresno	Modoc	Modoc	Mendocino	Kern
9	San Diego	Shasta	Mendocino	Monterey	San Diego
10	Inyo	Monterey	Tehama	San Luis Obispo	San Benito
Rank	1981-82	1982-83	1983-84	1984-85	1985-86
1	San Bernardino	San Bernardino	San Bernardino	Kern	Kern
2	Kern	Monterey	Kern	Tulare	San Bernardino
3	Monterey	Kern	Santa Barbara	Monterey	Tulare
4	Santa Barbara	Santa Barbara	San Luis Obispo	San Bernardino	Monterey
5	Tulare	San Luis Obispo	Los Angeles	Santa Barbara	Santa Barbara
6	Humboldt	Tulare	Monterey	San Luis Obispo	San Diego
7	San Diego	Humboldt	Tulare	Los Angeles	Ventura
8	Ventura	Los Angeles	San Diego	Humboldt	Humboldt
9	Fresno	San Diego	Ventura	Siskiyou	Los Angeles
10	San Luis Obispo	Ventura	Humboldt	San Diego	Inyo

Table 4. Geographical Differences in the Amount of Commercial Take of Bobcats in California, 1980-81 to 1985-86.

Geographical Area	1980-81 Take	Change < to >	1981-82 Take	Change < to >	1982-83 Take	Change < to >	1983-84 Take	Change < to >	1984-85 Take	Change < to >	1985-86 Take
Northeast	343	16	397	31	522	-37	328	54	506	-23	390
Northwest	1787	-16	1501	-24	1141	-13	997	41	1404	-31	967
North Coast	434	29	559	-4	538	-38	332	8	358	3	367
Central Coast	321	-63	118	6	125	-77	29	266	106	23	130
North Sierra	75	-39	46	41	65	-46	35	43	50	-14	43
Central Sierra	449	-17	374	-29	267	-16	224	1	226	12	253
East Sierra	367	-10	332	-22	260	16	301	11	333	22	406
South Coast	3060	-21	2429	5	2546	-9	2318	8	2511	-7	2344
South Sierra	1334	48	1971	-28	1428	10	1569	33	2086	-16	1745
Southern California	1425	-7	1332	7	1419	-13	1230	7	1317	10	1454

Table 5. Bobcat Pelt Prices.

Season	Average Price	Highest Price
1970-71	\$ 10.86	Not Recorded
1971-72	\$ 18.83	\$ 30.00
1972-73	\$ 29.33	\$ 6.00
1973-74	\$ 45.00	\$ 110.00
1974-75	\$ 50.00	\$ 110.00
1975-76	\$ 133.50	\$ 300.00
1976-77	\$ 76.00	\$ 225.00
1977-78	\$ 105.00	\$ 185.00
1978-79	\$ 120.00	\$ 426.00
1979-80	\$ 114.20	\$ 313.00
1980-81	\$ 129.90	\$ 325.00
1981-82	\$ 114.53	\$ 325.00
1982-83	\$ 105.85	\$ 342.11
1983-84	\$ 102.33	\$ 380.00
1984-85	\$ 121.96	\$ 368.00
1985-86	\$ 107.86	Not Available

Table 6. Average Bobcat Harvest per Successful Trapper per Season in California.*

County	Season										
	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
Butte	3.8	5.6	2.9	3.1	3.4	2.5					
Fresno		9.1	10.5	10.6	9.2	10.2	9.1	8.5	11.9	10.0	12.1
Humboldt	9.2	8.8	6.6	6.0	6.1	5.3	5.7	4.8	7.6	9.3	18.0
Inyo	10.6	8.3	10.9	10.5	7.3	8.5	5.0	5.3	7.8	5.6	14.2
Kern	5.3		14.6	26.9	10.6	11.0	10.8	12.2	16.5	18.4	14.7
Lake	4.5	5.3	5.7	10.0	6.4	4.7	5.9	4.6	5.9		
Lassen		5.4	3.5	6.0	4.3	3.8	5.9	6.5	3.6	4.8	4.4
Los Angeles	6.8	6.6	8.6	7.6	14.8	14.1	8.1	8.8	13.5	15.8	14.9
Mendocino	4.4	6.7	5.9	8.0	5.9	6.1	4.5	5.4	6.1	5.9	5.1
Modoc		5.0	5.3	5.6	4.2	3.2	4.6	5.5	7.7	7.2	6.3
Monterey		8.1	9.1	9.2	11.3	16.3	14.2	11.7	14.7	18.0	17.8
Plumas	9.8	2.9	3.4	4.5	4.3		5.5	4.5			
Riverside				7.8	9.9	5.8	7.8	9.0	7.4	10.3	10.1
San Benito		10.9	8.7	9.0	9.8	13.0	9.0	9.8		8.3	
San Bernardino		16.9	17.4	19.3	17.5	14.7	9.2	10.0	12.0	11.6	14.6
San Diego		11.1		12.1	11.5	6.0	9.4	9.8	10.6	11.8	10.8
San Luis Obispo				9.1	9.0	13.9	8.5	10.6	14.4	11.1	10.8
Santa Barbara			19.4	16.9	16.8	15.2	13.6	12.2	16.6	17.4	16.3
Shasta	5.4	5.1	4.3	4.0	3.6	2.9	3.1	3.3	4.1	4.4	4.8
Siskiyou	6.2	4.3	5.1	6.7	4.4	3.8	5.7	5.1	5.2	0.2	5.6
Tehama	3.6	4.7	4.8	5.3	3.7	5.1	4.1	3.8	3.7	6.3	3.8
Trinity	2.5	3.7	4.0	5.4	4.0	3.3	3.3	4.4	2.5	3.5	
Tulare		13.1	7.7	11.7	12.2	9.2	9.3	11.2	10.5	13.4	14.5
Ventura				7.1	10.0	9.4	10.4	11.2	10.4	13.5	12.6
Statewide	7.78	8.11	8.08	9.04	7.76	8.04	8.78	9.08	11.86	12.01	12.71
# Trappers harvesting bobcats	283	446	550	766	920	1,007	909	821	488	398	547
# Trappers licenced	931	1,692	1,889	2,378	3,221	3,201	3,686	3,901	1,607	1,650	1,417

* County data from counties and years where more than ten trappers per county reported.

Table 7. Method of Commercial Take of Bobcats, 1985-86.

County	% Taken by Trap	% Taken by Dogs	% Taken by Calling	% Taken by Misc. Hunt.	% Salvaged Road Kill	% Method Unknown	Sample Size
Alameda	83		17				6
Alpine	100						18
Amador	100						2
Butte	80		20				10
Calaveras	90			10			10
Colusa	100						87
Del Norte	93	7					27
El Dorado	86	3	8		3		36
Fresno	86	13				2	263
Glenn	100						71
Humboldt	61	39					361
Imperial	100					10	10
Inyo	99	1					332
Kern	84	15	1				861
Kings	100						12
Lake	97	2					64
Lassen	80	12	2	6			108
Los Angeles	99		1				334
Madera	100						32
Marin		100					22
Mariposa	78	22					94
Mendocino	53	45	2				89
Merced				100			1
Modoc	90	8	2				181
Mono	98				2		56
Monterey	83	17					562
Napa	98				2		45
Nevada	100						2
Orange	100						43
Placer	60	40					5
Plumas	100						23
Riverside	98			2			242
San Benito	64	33		1	1		87
San Bernardino	97			3			825
San Diego	90	8		2			463
San Joaquin	100						1
San Luis Obispo	91	8		1			317
Santa Barbara	98	1					493
Santa Clara	72	22	4	1			76
Shasta	59	40	1				190
Sierra	100						6
Siskiyou	82	12	6				303
Sonoma	77	22		2			60
Stanislaus	98	2					46
Tehama	74	19				7	43
Trinity	44	56					32
Tulare	47	49				3	577
Tuolumne	97	3					111
Ventura	100						422
Yolo	100						18
Yuba	95	5					20
Total	85.1	13.2	0.6	0.7	0.1	0.3	8099

The harvest of bobcats by hunters was approximately 2,861 (Table 1). Of these, 2,211 were taken and reported by licensed hunters (Table 8), 1,689 were taken by hunters with hunting licenses only, 516 by hunters with both hunting and trapping licenses, and 656 by hunters with only a trapping license. The estimate of 2,211 bobcats taken by licensed hunters was derived from the Department's annual "Game Take Hunter Survey". A sample of 2.0% of California's 502,396 licensed hunters produced a response of 10,227 questionnaires. This sampling provides an 80% confidence level for the estimated take of bobcats of between 1,766 and 2,655. Bobcat hunters spent an estimated 22,785 days hunting bobcats for an average take of 0.097 bobcats per day (Table 9). Although the estimated hunter take was equal to that of last year, there were fewer days needed in 1985 to obtain the same level of harvest and hunter success was back up to the lower end of the normal range of hunter success.

Additional information on the extent and distribution of the sport hunting take of bobcats is gathered through the sport hunting tag program. Obtaining these tags and returning them to the Department upon taking bobcat are legal requirements of bobcat hunters and the system should provide considerable information. However, it hasn't (Table 10). Given a sport hunting public of 2,500 to 3,000 (estimated from the annual hunter survey and subtracting all trappers who reported taking bobcats), only slightly more than a third of the sport hunters have bought the required tags in any one of the last six years. Additionally, sport hunters never have sent in tags for more than 10% of the bobcats that they reported taking in any annual hunter survey.

The Fish and Game Commission did not change or pass any new regulations for the 1986-87 season which could affect the quantity or the distribution of the bobcat harvest.

DISCUSSION

There appears to be nothing exceptional or abnormal in either the age and sex structure of bobcats taken during the 1984-85 and 1985-86 seasons (see Supplement #2) or of the harvest of bobcats during the 1985-86 season. In-depth discussions of data from previous years and their shortcomings have appeared in previous Job Progress Reports and no new insights have been acquired over the last year.

It should be noted that the average life expectancy appears to have leveled off and continues to be a good indicator of the health of California's bobcat populations. However, most wildlife populations are cyclic and some population fluctuations should be expected regardless of the stability and lower harvest.

The harvest of 9,824, for the 1985-86 season, remains below the statewide management limit of 14,400. This and the stability in trends in age and sex structure indicate healthy bobcat populations in California and that regional monitoring of harvest levels throughout the state should be adequate to detect changes affecting these bobcat populations. Therefore, harvest monitoring should continue and if the statewide harvest reaches 14,000 bobcats, age and sex structure monitoring should be reinstituted.

Table 8. Statistical Parameters of the Hunter Take of Bobcats during 1985, Poisson Distribution.*

Frequency Distribution:	Bobcats Taken Per Hunter	No. of Hunters	Total Bobcats Taken
	0	32	0
	1	11	11
	2	4	8
	3	1	3
	4	2	8
	5	3	15
		$\Sigma f = 53$	$\Sigma yf = 45$

$$\text{Average take per hunter } \bar{x} = \frac{\text{total bobcats taken}}{\text{total respondents}} = \frac{45}{10227} = 0.0044001$$

$$\text{State-wide bag } x = (\bar{x}) (\text{tot. no. license buyers}) = (0.0044001)(502396) = 2211$$

Assuming that bobcat take follows a Poisson distribution, confidence limits can be assigned by knowing \bar{x} and n (total no. of respondents)

$$\sigma_{(\bar{x})} = \sqrt{\frac{\bar{x}}{n}} = \sqrt{\frac{0.0044001}{10227}} = 0.0006559$$

$$\text{Confidence interval of } \bar{x} = \bar{x} \pm t\sigma$$

Confidence Levels	Mean \pm standard deviation $\bar{x} \pm t\sigma$	Confidence Intervals $\bar{x} \pm t\sigma$	Confidence Intervals for Total Take **
@ 80% =	0.0044001 \pm (1.35) (0.0006559)	0.0044001 \pm 0.0008855	1766 to 2655
@ 90% =	0.0044001 \pm (1.65) (0.0006559)	0.0044001 \pm 0.0010823	1667 to 2754
@ 95% =	0.0044001 \pm (1.96) (0.0006559)	0.0044001 \pm 0.0012856	1565 to 2856
@ 99% =	0.0044001 \pm (2.576) (0.0006559)	0.0044001 \pm 0.0016897	1362 to 3059

* After Shimamoto (1976)

** Calculated by multiplying confidence intervals for x by the total number of license buyers.

Table 9. Licenced Sport Hunter Take of Bobcats, 1978-85.

Year	Est. Licensed Hunter Take	No. Licensed Hunters Hunting Bobcats	Percent Successful	Days Hunted	Bobcats Take/Day
1978	5733	7566	45	57603	0.100
1979	7462	5960	47	65340	0.114
1980	3373	4843	59	32951	0.102
1981	2585	4551	45	30192	0.086
1982	2574	4408	41	32984	0.078
1893	1794	3082	43	23184	0.077
1984	2232	3456	33	35670	0.063
1985	2211	2597	40	22785	0.097

Table 10. Sport Hunting Tag Program Compliance, 1980-86.

	Season					
	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
No. of Sport Hunting Tag Buyers	262	427	384	495	547	720
Estimated No. of of Bobcat Hunters*	3836	3642	3408	2594	3058	2050
Percent of Hunters Buying Tags	6.8	11.7	11.3	19.1	17.9	35.1
Take Reported by Sport Hunting Tag Return	70	113	87	107	156	149
Estimated Sport Hunting Take**	2794	1862	1865	1291	1591	1689
Percent of Take Reported	2.5	6.1	4.7	8.3	9.8	8.8

* Estimated number of bobcat hunters calculated by subtracting total number of licensed trappers taking bobcats from the total number of hunters estimated by annual hunter survey.

**Estimated sport hunting take calculated by subtracting estimated take by persons both licensed to hunt and trap from the reported licensed hunter take.

Harvest levels in northeastern California should be carefully monitored (Table 11). Annual harvest levels in this area greater than 425 bobcats for more than two successive seasons should prompt additional management action to ascertain the situation in that area.

Table 11. Recent Commercial Harvest of Bobcats in Northeastern California.

Season	County				Total Northeastern California
	Eastern Siskiyou	Modoc	Lassen	Plumas	
1978-79	81	306	246	47	680
1979-80	88	216	302	95	701
1980-81	82	126	96	39	343
1981-82	49	143	147	58	397
1982-83	74	238	177	35	524
1983-84	45	182	84	17	328
1984-85	54	231	188	33	506
1985-86	78	181	108	23	390

The significant disparity between the information provided by the annual hunter survey and the sport hunting tag program continues. In their 1984 argument to increase the limit for sport hunting tags to five and to get the Department to sell tags on a request by mail basis, sport hunters indicated that these actions would increase compliance. Results from the analysis of the 1985-86 harvest demonstrate only a slight increase in the proportion of hunters buying bobcat hunting tags (now equal to 35.1%) and no substantial change in those reporting harvested bobcats (Table 10). The cost effectiveness of selling sport hunting tags by mail should be assessed in light of this information and be terminated if costs are deemed excessive for this service.