

January 16, 1950

From: HENRY A. HJERSMAN  
To: BEN GLADING  
Subject: PRELIMINARY REPORT OF 1948 GAME TAKE POSTCARD SURVEY

Realizing an urgent need for reliable game take data, you instructed me to begin proceedings for the procuring of annual game take statistics. In order to pursue such a program over a protracted period with a minimum expenditure, it was decided to employ a double postcard type of mail questionnaire, similar to those utilized in the late 1930's and just prior to the war by Hunter and Fry.

Data secured on these prior surveys were adjusted to conform with the differences existing between the deer tag reported deer kill (which was assumed to be nearly correct) and the kill reported by the postcard questionnaire. In the present survey no such assumption has been made. Instead a contract was entered with the Opinion Research Center of the University of Denver to conduct a survey of the 1948 take of game species in California. The intent was to determine a standard correction, if any, to be applied to results obtained on the mail questionnaires. This survey was conducted by personal interviews from a two per cent random sample of hunting license buyers, from which a mathematically random sub-sample was drawn to provide 1,250 actual interviews.

An entirely separate two percent random sample of hunting license buyers was drawn and the persons contained were mailed folded post card questionnaires. Instructions in regard to filling out and sending in were included, as will be noted in Figure 1.

A total of 9,412 postcards was mailed shortly after the closing of waterfowl season on January 5, 1949. Of these, 2,868 cards were filled in and returned, or 30.5%. Table I indicates the postcard mailing and return for each county. Only 15 additional postcards were returned by the postoffice or were unusable for other reasons.

The total hunting license sale in California for the 1948 season was 504,450. This figure divided by the 2,868 answers provided the correction factor applied to the figures of the reported kill by species and by county of kill. These are completely shown in the tables from table II to the end of this report.

A comparison of the results obtained from these two methods (on two separate samples of same basic size from the same universe) shows that data obtained by the postcard survey is sufficiently reliable for administrative purposes. It was determined that no correction factor could be derived, as evidenced by the following: the uncorrected percentages of difference in kill by species in the two methods varied from plus 10.5 to minus 29.8 while the corrected percentages varied from plus 23.44 to minus 42.86. It is felt, however, that the variance of results obtained by the two methods means little in that the greatest transgressors were the relatively unimportant game species. Bear and tree squirrels were represented by few hunters, which means a greater possibility of error, and the hunting on jackrabbits was still in progress while the surveys were being taken. A few days might make a large difference in results when such a small sample is being considered.

The great advantages are low cost and rapidity of determination of kill by species. The latter enhances the administrative value of the figures and also lessens errors brought on by hunters forgetting their actual kill, as the survey begins immediately after the close of the last important open season. Final figures can be calculated when the hunting license sale is known.

Henry A. Hjersman



1948 POSTCARD GAME TAKE SURVEY - TABLE 1 - MAILING AND RETURN BY COUNTY OF 1948 POSTCARD QUESTIONNAIRES

COUNTY	CARDS MAILED	RETURNED TO S. F. OFFICE			RETURN OF MAILED CARDS %	TOTAL CARDS RETURNED % OF	COUNTY	CARDS MAILED	RETURNED TO S. F. OFFICE			RETURN OF MAILED CARDS %	TOTAL CARDS RETURNED % OF
		USABLE CARDS	%	MAILED CARDS					USABLE CARDS	%	MAILED CARDS		
ALAMEDA	549	163	-	29.7	5.68	PLACER	124	29	-	23.4	1.01		
ALPINE	1	-	-	-	-	PLUMAS	62	13	-	21.0	0.45		
AMADOR	33	12	-	35.4	0.42	RIVERSIDE	125	39	-	31.2	1.36		
BUTTE	244	77	-	31.6	2.68	SACRAMENTO	451	129	-	28.6	4.50		
CALaveras	31	4	-	12.9	0.14	SAN BENITO	27	8	-	29.6	0.28		
COLUSA	39	6	-	15.4	0.21	SAN BERNARDINO	182	65	-	35.7	2.27		
CONTRA COSTA	315	96	-	30.5	3.35	SAN DIEGO	306	112	-	36.6	3.91		
DEL NORTE	23	6	-	26.1	0.21	SAN FRANCISCO	421	110	-	26.1	3.84		
EL DORADO	55	18	-	32.7	0.63	SAN JOAQUIN	291	92	-	31.6	3.21		
FRESNO	378	109	-	28.8	3.80	SAN LUIS OBISPO	112	35	-	31.3	1.22		
GLENN	62	16	-	25.6	0.56	SAN MATEO	179	50	-	28.0	2.09		
HUMBOLDT	197	48	-	24.4	1.67	SANTA BARBARA	91	26	-	28.6	0.91		
IMPERIAL	88	33	-	37.5	1.15	SANTA CLARA	259	85	-	32.8	2.96		
INYO	49	9	-	18.4	0.31	SANTA CRUZ	95	31	-	32.6	1.08		
KERN	310	89	-	28.7	3.10	SHASTA	113	29	-	25.7	1.01		
KINGS	56	21	-	37.5	0.73	SIERRA	16	3	-	18.8	0.10		
LAKE	55	11	-	20.0	0.38	SISKIYOU	133	41	-	30.8	1.43		
LASSEN	89	18	-	20.2	0.63	SOLANO	153	55	-	35.9	1.92		
LOS ANGELES	1524	524	-	34.4	18.27	SONOMA	206	57	-	27.7	1.95		
MADERA	66	20	-	30.3	1.070	STANISLAUS	210	68	-	32.4	2.37		
MARIN	102	33	-	32.4	1.15	SUTTER	87	20	-	23.0	0.70		
MARIPOSA	15	2	-	13.3	0.07	TEHAMA	39	15	-	38.5	0.52		
MENDOCINO	112	37	-	33.0	1.29	TRINITY	26	13	-	50.0	0.45		
MERCED	151	34	-	22.5	1.19	TULARE	239	78	-	32.6	2.72		
MODOC	45	12	-	26.7	0.42	TUOLUMNE	41	13	-	31.7	0.45		
MONO	8	5	-	62.5	0.17	VENTURA	93	32	-	34.4	1.12		
MONTREY	157	48	-	30.6	1.67	YOLO	107	36	-	33.6	1.26		
NAPA	91	29	-	31.9	1.41	YUBA	85	24	-	28.2	0.84		
NEVADA	71	15	-	21.1	0.52	SUB-TOTALS	9,333	2,852	-	30.6	99.44		
ORANGE	134	39	-	29.1	1.36	NEVADA	54	6	-	11.1	0.24		
						OREGON	22	9	-	40.9	0.31		
						OTHER STATES	3	1	-	33.3	0.03		
						TOTALS	9,412	2,868	-	30.5	99.99		

TABLE II

1948 DEER KILL BY COUNTY

1948 POSTCARD GAME TAKE SURVEY

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	11	1,900
ALPINE	15	2,600
AMADOR	1	200
BUTTE	14	2,500
CALAVERAS	2	400
COLUSA	4	700
CONTRA COSTA	3	500
DEL NORTE	1	200
EL DORADO	18	3,200
FRESNO	27	4,700
GLENN	4	700
HUMBOLDT	23	4,000
INYO	6	1,100
KERN	9	1,600
LAKE	19	3,300
LASSEN	14	2,500
LOS ANGELES	3	500
MADERA	5	900
MARIN	11	1,900
MARIPOSA	1	200
MENDOCINO	37	6,500
MERCED	2	400
MODOC	31	5,500
MONO	9	1,600
MONTEREY	22	3,900
NAPA	12	2,100
NEVADA	10	1,800
PLACER	11	1,900
PLUMAS	27	4,700
RIVERSIDE	2	400
SACRAMENTO	1	200
SAN BENITO	5	900
SAN BERNARDINO	1	200
SAN DIEGO	11	1,900
SAN LUIS OBISPO	2	400
SAN MATEO	4	700
SANTA BARBARA	4	700
SANTA CLARA	8	1,400
SANTA CRUZ	2	400
SHASTA	14	2,500
SIERRA	14	2,500
SISKIYOU	33	5,800
SONOMA	13	2,300
TEHAMA	11	1,900
TRINITY	10	1,800
TULARE	21	3,700
TUOLUMNE	17	3,000
VENTURA	7	1,200
YOLO	10	1,800
YUBA	4	700
UNSPECIFIED	27	4,700
TOTALS	573	100,800

TABLE III

## 1948 PHEASANT KILL BY COUNTY

## 1948 POSTCARD GAME TAKE SURVEY

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	18	3,200
AMADOR	9	1,600
BUTTE	399	70,200
CALAVERAS	14	2,500
COLUSA	430	75,600
CONTRA COSTA	31	5,500
EL DORADO	6	1,100
FRESNO	91	16,000
GLENN	270	47,500
HUMBOLDT	4	700
IMPERIAL	57	10,000
INYO	12	2,100
KERN	17	3,000
KINGS	7	1,200
LAKE	2	400
LASSEN	28	4,900
LOS ANGELES	7	1,200
MADERA	9	1,600
MARIN	8	1,400
MENDOCINO	4	700
MERCED	85	15,000
MODOC	20	3,500
MONO	4	700
MONTEREY	4	700
NAPA	30	5,300
NEVADA	1	200
ORANGE	10	1,800
PLACER	22	3,900
RIVERSIDE	9	1,600
SACRAMENTO	257	45,200
SAN BERNARDINO	15	2,600
SAN DIEGO	4	700
SAN JOAQUIN	118	20,800
SAN LUIS OBISPO	12	2,100
SANTA BARBARA	2	400
SANTA CLARA	12	2,100
SANTA CRUZ	3	500
SHASTA	27	4,700
SISKIYOU	40	7,000
SOLANO	86	15,100
SONOMA	34	6,000
STANISLAUS	211	37,100
SUTTER	245	43,100
TEHAMA	53	9,300
TRINITY	2	400
TULARE	34	6,000
YOLO	314	55,200
YUBA	107	18,800
UNSPECIFIED	148	26,000
TOTALS	3,332	586,100

TABLE IV

1948 DOVE KILL BY COUNTY

1948 POSTCARD GAME TAKE SURVEY

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	160	28,100
AMADOR	137	24,100
BUTTE	304	53,500
CALAVERAS	60	10,600
COLUSA	134	23,600
CONTRA COSTA	219	38,500
EL DORADO	36	6,300
FRESNO	1,029	181,000
GLENN	226	39,800
IMPERIAL	2,086	366,900
INYO	56	9,800
KERN	787	138,400
KINGS	251	44,100
LAKE	98	17,200
LASSEN	77	13,500
LOS ANGELES	362	63,700
MADERA	154	27,100
MARIN	128	22,500
MARIPOSA	10	1,800
MENDOCINO	48	8,400
MERCED	341	60,000
MODOC	20	3,500
MONO	38	6,700
MONTEREY	261	45,900
NAPA	185	32,500
NEVADA	10	1,800
ORANGE	200	35,200
PLACER	85	15,000
PLUMAS	13	2,300
RIVERSIDE	781	137,400
SACRAMENTO	274	48,200
SAN BENITO	13	2,300
SAN BERNARDINO	300	52,800
SAN DIEGO	401	70,500
SAN JOAQUIN	448	78,800
SAN LUIS OBISPO	590	103,800
SAN MATEO	75	13,200
SANTA BARBARA	140	24,600
SANTA CLARA	230	40,500
SANTA CRUZ	99	17,400
SHASTA	134	23,600
SISKIYOU	87	15,300
SOLANO	62	10,900
SONOMA	226	39,800
STANISLAUS	685	120,500
SUTTER	94	16,500
TEHAMA	201	35,400
TULARE	1,139	200,300
TUOLUMNE	132	23,200
VENTURA	185	32,500
YOLO	284	50,000
YUBA	43	7,600
UNSPECIFIED	487	85,700
TOTALS	14,625	2,572,400

TABLE V

1948 BAND-TAILED PIGEON KILL BY COUNTY

1948 POSTCARD GAME TAKE SURVEY

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	11	1,900
BUTTE	35	6,200
CONTRA COSTA	10	1,800
DEL NORTE	10	1,800
EL DORADO	2	400
FRESNO	148	26,000
HUMBOLDT	52	9,100
KERN	28	4,900
KINGS	4	700
LASSEN	14	2,500
LOS ANGELES	13	2,300
MADERA	137	24,100
MARIN	23	4,000
MARIPOSA	6	1,100
MENDOCINO	12	2,100
MONTEREY	94	16,500
NAPA	30	5,300
ORANGE	4	700
PLUMAS	5	900
RIVERSIDE	28	4,900
SACRAMENTO	9	1,600
SAN BERNARDINO	11	1,900
SAN DIEGO	152	26,700
SAN JOAQUIN	31	5,500
SAN LUIS OBISPO	670	117,800
SAN MATEO	24	4,200
SANTA BARBARA	65	11,600
SANTA CLARA	11	1,900
SANTA CRUZ	2	400
SHASTA	30	5,300
SIERRA	2	400
SISKIYOU	22	3,900
SONOMA	7	1,200
STANISLAUS	4	700
TEHAMA	5	900
TULARE	5	900
TUOLUMNE	6	1,100
VENTURA	27	4,700
YUBA	1	200
UNSPECIFIED	32	6,900
TOTALS	1,790	314,800

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	2	400
AMADOR	1	200
BUTTE	187	32,900
CALAVERAS	14	2,500
COLUSA	438	77,000
CONTRA COSTA	19	3,300
DEL NORTE	4	700
FRESNO	52	9,100
GLENN	195	34,800
HUMBOLDT	9	1,600
IMPERIAL	46	8,100
INYO	19	3,300
KERN	4	700
LASSEN	24	4,200
LOS ANGELES	2	400
MADERA	7	1,200
MERCED	98	17,200
MODOC	79	13,900
MONG	27	4,700
MONTEREY	1	200
PLACER	2	400
PLUMAS	3	500
RIVERSIDE	10	1,800
SACRAMENTO	42	7,400
SAN BERNARDINO	8	1,400
SAN DIEGO	13	2,300
SAN JOAQUIN	47	8,300
SAN LUIS OBISPO	5	900
SANTA CLARA	1	200
SANTA CRUZ	2	400
SHASTA	13	2,300
SISKIYOU	143	25,200
SOLANO	115	20,200
SONOMA	8	1,400
STANISLAUS	30	5,300
SUYTER	120	21,100
TEHAMA	29	5,100
TULARE	2	400
TUOLUMNE	1	200
VENTURA	1	200
YOLO	89	15,700
YUBA	34	6,000
UNSPECIFIED	73	13,700
TOTALS	2,021	356,000



	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	722	127,000
AMADOR	20	3,500
BUTTE	862	151,600
CALAVERAS	15	2,600
COLUSA	1,171	206,000
CONTRA COSTA	461	81,100
DEL NORTE	105	18,500
EL DORADO	58	10,200
FRESNO	586	103,100
GLENN	387	68,100
HUMBOLDT	253	44,500
IMPERIAL	843	148,300
INYO	63	11,100
KERN	381	67,000
KINGS	47	8,300
LAKE	15	2,600
LASSEN	152	26,700
LOS ANGELES	81	14,200
MADERA	70	12,300
MARIN	150	26,400
MENDOCINO	67	11,800
MERCED	1,827	321,300
MODOC	192	33,800
MONO	132	23,200
MONTEREY	296	52,100
NAPA	102	17,900
NEVADA	10	1,800
ORANGE	124	21,800
PLACER	51	9,000
PLUMAS	28	4,900
RIVERSIDE	188	33,100
SACRAMENTO	498	87,600
SAN BERNARDINO	220	38,700
SAN DIEGO	719	126,500
SAN JOAQUIN	919	162,600
SAN LUIS OBISPO	175	30,800
SAN MATEO	432	76,000
SANTA BARBARA	87	15,300
SANTA CLARA	406	71,400
SANTA CRUZ	67	11,800
SHASTA	115	20,200
SISKIYOU	432	76,000
SOLANO	1158	203,700
SONOMA	409	71,900
STANISLAUS	307	54,000
SUTTER	385	67,700
TEHAMA	135	23,700
TULARE	149	26,200
TUOLUMNE	5	900
VENTURA	276	48,500
YOLO	324	57,000
YUBA	169	29,700
UNSPECIFIED	648	114,000
TOTALS	17,494	3,077,000

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
BUTTE	25	4,400
CALAVERAS	4	700
COLUSA	2	400
EL DORADO	18	3,200
FRESNO	25	4,400
HUMBOLDT	4	700
INYO	1	200
KERN	44	7,700
LAKE	2	400
LOS ANGELES	5	900
MADERA	11	1,900
MARIN	42	7,400
MARIPOSA	7	1,200
MODOC	12	2,100
NAPA	1	200
NEVADA	4	700
PLACER	7	1,200
PLUMAS	7	1,200
RIVERSIDE	1	200
SACRAMENTO	6	1,100
SAN BERNARDINO	3	500
SAN DIEGO	11	1,900
SANTA CLARA	3	500
SHASTA	39	6,900
SIERRA	7	1,200
SONOMA	1	200
TEHAMA	3	500
TRINITY	6	1,100
TULARE	41	7,200
TUOLUMNE	20	3,500
YOLO	15	2,600
YUBA	7	1,200
UNSPECIFIED	38	6,700
TOTALS	422	74,200

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
BUTTE	1	176
EL DORADO	1	176
LASSEN	1	176
MADERA	1	176
MARIPOSA	1	176
SHASTA	2	352
TEHAMA	1	176
TRINITY	1	176
TULARE	1	176
TUOLUMNE	1	176
UNSPECIFIED	1	176
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TOTALS	12	2,112

TABLE X 1948 JACKRABBIT KILL BY COUNTY

1948 POSTCARD GAME TAKE SURVEY

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	16	2,800
AMADOR	1	200
BUTTE	180	31,700
CALAVERAS	12	2,100
COLUSA	83	14,600
CONTRA COSTA	33	5,800
FRESNO	186	32,700
GLENN	64	11,300
HUMBOLDT	8	1,400
IMPERIAL	80	14,100
INYO	23	4,000
KERN	365	64,200
KINGS	58	10,200
LAKE	32	5,600
LASSEN	106	18,600
LOS ANGELES	329	57,900
MADERA	29	5,100
MARIN	63	11,100
MARIPOSA	2	400
MENDOCINO	9	1,600
MERCED	125	22,000
MONO	22	3,900
MONTEREY	21	3,700
NAPA	22	3,900
NEVADA	14	2,500
ORANGE	32	5,500
PLACER	24	4,200
PLUMAS	5	900
RIVERSIDE	191	33,600
SACRAMENTO	192	33,800
SAN BENITO	6	1,100
SAN BERNARDINO	128	22,500
SAN DIEGO	126	22,200
SAN JOAQUIN	165	29,000
SAN LUIS OBISPO	76	13,400
SAN MATEO	15	2,600
SANTA BARBARA	5	900
SANTA CLARA	46	8,100
SANTA CRUZ	7	1,200
SHASTA	25	4,400
SIERRA	35	6,200
SISKIYOU	11	1,900
SOLANO	142	25,000
SONOMA	200	35,200
STANISLAUS	579	101,800
SUTTER	71	12,500
TEHAMA	62	10,900
TULARE	94	16,500
VENTURA	30	5,300
YOLO	345	60,700
YUBA	33	5,800
UNSPECIFIED	449	79,000
TOTALS	4,977	875,400

TABLE XI 1948 COTTONTAIL AND BRUSH RABBIT KILL BY COUNTY

1948 POSTCARD GAME TAKE SURVEY

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	14	2,500
AMADOR	1	200
BUTTE	5	900
CALAVERAS	12	2,100
COLUSA	5	900
CONTRA COSTA	13	2,300
EL DORADO	1	200
FRESNO	86	15,100
GLENN	14	2,500
HUMBOLDT	17	3,000
IMPERIAL	210	35,900
INYO	10	1,800
KERN	230	40,500
KINGS	4	700
LAKE	2	400
LASSEN	58	10,200
LOS ANGELES	268	47,100
MADERA	12	2,100
MARIN	33	5,800
MARIPOSA	5	900
MENDOCINO	9	1,500
MERCED	35	6,200
MODOC	24	4,200
MONO	14	2,500
MONTEREY	99	17,400
NEVADA	2	400
ORANGE	73	12,800
PLACER	47	8,300
RIVERSIDE	488	85,800
SACRAMENTO	22	3,900
SAN BENITO	10	1,800
SAN BERNARDINO	219	38,500
SAN DIEGO	476	83,700
SAN FRANCISCO	1	200
SAN JOAQUIN	57	10,000
SAN LUIS OBISPO	48	8,400
SAN MATEO	117	20,600
SANTA BARBARA	18	3,200
SANTA CLARA	72	12,700
SANTA CRUZ	111	19,500
SHASTA	8	1,400
SIERRA	10	1,800
SISKIYOU	57	10,000
SONOMA	16	2,800
STANISLAUS	24	4,200
SUTTER	10	1,800
TEHAMA	9	1,600
TULARE	31	5,500
TUOLUMNE	9	1,600
VENTURA	75	13,200
YOLO	76	13,400
YUBA	1	200
UNSPECIFIED	128	22,500
TOTALS	3,396	597,300

	<u>REPORTED TAKE</u>	<u>STATEWIDE TAKE</u>
ALAMEDA	96	16,900
ALPINE	2	400
AMADOR	67	11,800
BUTTE	116	20,400
CALAVERAS	112	19,700
COLUSA	118	20,800
CONTRA COSTA	115	20,200
DEL NORTE	22	3,900
EL DORADO	113	19,900
FRESNO	536	94,300
GLENN	48	8,400
HUMBOLDT	83	14,600
IMPERIAL	430	75,600
INYO	42	7,400
KERN	530	93,200
KINGS	36	6,300
LAKE	139	24,400
LASSEN	110	19,300
LOS ANGELES	341	60,000
MADERA	254	44,700
MARIN	163	28,700
MARIPOSA	145	25,500
MENDOCINO	185	32,500
MERCED	108	19,000
MODOC	173	30,400
MONO	24	4,200
MONTEREY	271	47,700
NAPA	193	33,900
NEVADA	67	11,800
ORANGE	43	7,600
PLACER	116	20,400
PLUMAS	41	7,200
RIVERSIDE	538	94,600
SACRAMENTO	50	8,800
SAN BENITO	62	10,900
SAN BERNARDINO	222	39,000
SAN DIEGO	473	83,200
SAN JOAQUIN	244	42,900
SAN LUIS OBISPO	333	58,600
SAN MATEO	155	29,000
SANTA BARBARA	280	49,200
SANTA CLARA	140	24,600
SANTA CRUZ	273	48,000
SHASTA	203	35,700
SIERRA	4	700
SISKIYOU	175	30,800
SOLANO	11	1,900
SONOMA	199	35,000
STANISLAUS	198	34,800
SUTTER	16	2,800
TEHAMA	153	26,900
TRINITY	8	1,400
TULARE	372	65,400
TUOLUMNE	99	17,400
VENTURA	266	46,800
YOLO	113	19,900
YUBA	52	9,100
UNSPECIFIED	259	45,600
TOTALS	9,747	1,714,494