

Table 1. Numbers of hooting grouse detected at Sierra Nevada sites in relation to the length of the survey route, area surveyed, and duration of the survey. Area estimations assume hooting grouse are audible up to 150m distance. Times include return times along a single path. Time was not considered if an automobile was used (most surveys were conducted on foot).

	<u>No. of</u> <u>hooters</u>	<u>dist.</u> <u>(m)</u>	<u>area</u> <u>(ha)</u>	<u>time</u> <u>(hr)</u>
LASSEN REGION				
HWY 17 T29N R3E Sec 22,23,24 28 APR 92	0	2,810	85	by auto
Huckleberry Mountain T32N R3E Sec 9 1 MAY 92	0	2,190	66	1.0
West Prospect Peak T31N R5E Sec 2 T32N R5E SEC 35 1 MAY 92	3	1,250	38	3.5
Ashpan Butte T32N R4E Sec 20 1 MAY 92	0	1,250	38	0.5
Eskimo Hill T31N R3E Sec 1 T31N R5E, Sec 2 1 MAY 92	0	940	28	0.75
Raker Peak* T31N R4E Sec 13,24 1 MAY 92	2	1,560	47	2.5
No of So Gate** T30N R4E Sec 21,22,2,28 28 APR 92	2	3,125	94	by auto
So of So Gate T30N R4E Sec 28,33 28 APR 92	0	1,560	47	2.75
Warner Ridge* T29N R6E Sec 3 T30N R6E Sec 33 29 APR 92	2	940	28	0.5
Mount Harkness T30N R6E Sec 27,28,33,34 30 APR 92	1	3,750	113	5.0
Kelly Mountain T29N R6E Sec 5,6 29 APR 92	0	2,500	75	2.0

Table 1 (con't).

	<u>No. of hooters</u>	<u>dist. (m)</u>	<u>area (ha)</u>	<u>time (hr)</u>
LASSEN REGION (con't)				
Willow Creek Ridge T29N R6E Sec 7 29 APR 92	2	1,250	38	2.5
Christie Hill T29N R4E Sec 9,10,15,16 28 APR 92	0	3,440	103	1.5
YOSEMITE REGION				
Tamarack Creek T2S R20E Sec 13,14,22,23 18 APR 92	0	6,250	188	3.0
Badger Pass* T3S R21E Sec 21,22,26,27,28 12 MAY 92	3	12,500	375	7.0
Yosemite Creek T1S R22E Sec 19,20,29,30 26 MAY 92	2	8,440	253	3.0
So of Quartz Mtn* T5S R23E Sec 15 8 MAY 92	5	2,190	66	2.0
Quartz Mountain T5S R23E Sec 10 8 MAY 92	0	2,500	75	1.75
Fresno Dome T5S R22E Sec 34,35 8 MAY 92	0	2,190	66	2.5
Shuteye Lookout T6S R23E Sec 26,27,34,35 7 MAY 92	0	7,810	234	6.5
Gagg's Camp T6S R23E Sec 28,29 7 MAY 92	0	1,560	47	2.5
Texas Flat-Iron Mtn T5S R23E Sec 19,20 T6S R23E Sec 6,7 10 MAY 92	0	7,500	225	6.0
Jackass Rock T6S R24E Sec 1 20 APR 92	0	1,875	56	0.75

Table 1 (con't).

	<u>No. of hooters</u>	<u>dist. (m)</u>	<u>area (ha)</u>	<u>time (hr)</u>
SEQUOIA REGION				
Fir Cove Campground T14S R29E Sec 33 23 APR 92	0	940	28	0.75
Big Meadows Ski Trail T14S R29E Sec 16,17,19,20,21,28 24 Apr 92	9	14,060	420	3.75
Big Baldy Trail* T14S R28E Sec 24 & 25 T14S R29E Sec 19, 30 24 APR 92	4	3,750	112	3.0
Stony Creek Ridge* T14S R29E Sec 33,34 25 APR 92	3	4,690	140	3.0
Buck Rock Creek T2S R29E Sec 5 31 MAY 92	1	from auto		by auto
Buena Vista Trail T14S R28E Sec 11,13,14 23 APR 92	2	1,250	38	1.5
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TOTALS	41	104km	3,120ha	69.5hr

\* sites used for hoot count transects

\*\* not considered for transect because a major road was nearby.

Table 2. Summary data for hoot count transects.

SITE:	<u>RAKER</u>	<u>WARNER</u>	<u>YOSEMITE</u>	<u>QUARTZ</u>	<u>BALDY</u>	<u>STONY</u>
RUN NO. 1						
Date:	5/22	5/21	5/13	5/9	5/15	5/16
Start Time:	18.35	06.55	07.47	08.25	16.40	16.20
Time (hrs):	1.6	2.5	2.0	3.2	2.1	2.1
Terr. males:	3	5	3	5	5	1
RUN NO. 2						
Date:	5/23	5/21	5/13	5/9	5/15	5/16
Start Time:	15.50	10.15	10.15	13.48	19.00	18.35
Time (hrs):	2.1	2.6	1.25	2.1	2.2	1.7
Terr. males:	5	1	3	5	6	3
RUN NO. 3						
Date:	5/23	5/21	5/13	5/9	5/16	5/17
Start Time:	08.11	17.15	16.15	18.35	07.45	07.47
Time (hrs):	1.8	1.7	1.2	1.8	2.1	2.0
Terr. males:	4	0	3	4	6	3
RUN NO. 4						
Date:	5/23	5/21	5/13	5/10	5/16	5/17
Start Time:	14.45	19.08	18.00	17.30	10.50	10.00
Time (hrs):	1.7	1.2	0.8	1.8	1.5	1.5
Terr. males:	3	1	3	3	4	2
RUN NO. 5						
Date:	6/4	6/3	5/27	5/29	5/31	5/30
Start Time:	18.35	18.45	06.25	06.20	18.10	18.18
Time (hrs):	1.7	1.3	3.2	2.3	1.6	1.7
Terr. males:	3	3	2	6	3	2
RUN NO. 6						
Date:	6/5	6/4	5/27	5/29	6/1	5/31
Start Time:	06.55	05.45	18.13	18.10	06.23	06.06
Time (hrs):	1.3	1.3	1.7	1.9	1.5	1.5
Terr. males:	4	1	4	5	3	1
SUMMARY						
Mean number of males observed/km	3.67	1.8	3	4.67	4.5	2
Range of males/km	3-5	0-5	2-4	3-6	3-6	1-3
Estimated number of males/km	5	4	3	5	5	4
Estimated number of males/100ha*	17	13	10	17	17	13

\* Assuming 300m transect width (1,000m x 300m = 30ha).

Table 3. Some reported blue grouse densities (it is frequently impossible to determine whether published data were taken from within hooting groups or over larger areas).

OUTSIDE CALIFORNIA

<u>Density</u>	<u>Location</u>	<u>Forest Type</u>	<u>Author(s)</u>
90 males /100ha	Vancouver Island British Columbia	<i>Tsuga/Pseudotsuga</i>	Bendell 1955
19.2 males /100ha	"	"	Donaldson and Bergerud 1974
18-29 males /100ha	"	"	Lewis 1984
32-136 males /100ha	"	"	Bendell and Elliott 1967
1.7-29 females /100ha	"	"	Redfield 1973
5.7-22 males	"	"	"
19.6-46 yearlings /100ha	"	"	"
67.5 males /100ha	Alberta	<i>Pseudotsuga/Pinus</i>	Boag 1966
41 males /100ha	Utah	"	Mussehl 1960

ELSEWHERE IN CALIFORNIA

<u>Density</u>	<u>Location</u>	<u>Forest Type</u>	<u>Author(s)</u>
2 males /100ha	Humboldt County	<i>Pseudotsuga</i> /pasture	Zwickel et al. 1985
7 males /100ha	"	<i>Pseudotsuga</i> forest alone	"

THIS STUDY

<u>Density</u>	<u>Location</u>	<u>Forest Type</u>
15 males /100ha	Lassen Region	<i>Abies/Pinus</i>
19 males /100ha	Yosemite Region	<i>Abies/Pinus</i>
15 males /100ha	Sequoia/Kings Region	<i>Abies/Pinus</i>

Table 4. Results of mountain quail observations along 1km blue grouse hoot count transects (\* % open canopy was calculated as the proportion of 11 listening stations on each transect which were closer than 100m to a large opening in the forest canopy. \*\* All mountain quail either seen or heard were recorded. Some may have been counted twice).

LASSEN REGION

<u>Raker Peak</u>		
% open canopy*		
		36
<u>Date</u>	<u>Hrs</u>	<u>Quail**</u>
5/22	1.6	0
5/23	2.1	0
5/23	1.8	0
5/23	1.7	0
6/04	1.7	0
6/05	1.3	0
<u>Average:</u>	4.25	0
<u>Range:</u>	1.3-2.1	0

<u>Warner Ridge</u>		
% open canopy*		
		18
<u>Date</u>	<u>Hrs</u>	<u>Quail**</u>
5/21	2.5	9
5/21	2.6	7
5/21	1.7	2
5/21	1.2	6
6/03	1.3	3
6/04	1.3	7
<u>Average:</u>	1.8	5.7
<u>Range:</u>	1.2-2.6	2-9

YOSEMITE REGION

<u>Yosemite</u>		
% open canopy*		
		9
<u>Date</u>	<u>Hrs</u>	<u>Quail**</u>
5/13	2.0	4
5/13	1.25	3
5/13	1.2	4
5/13	0.8	2
5/27	3.2	4
5/27	1.7	2
<u>Average:</u>	1.7	3.2
<u>Range:</u>	1.2-3.2	2-4

<u>Quartz Mountain</u>		
% open canopy*		
		36
<u>Date</u>	<u>Hrs</u>	<u>Quail**</u>
5/09	3.2	1
5/09	2.1	2
5/09	1.8	6
5/10	1.8	9
5/29	2.3	6
5/29	1.9	6
<u>Average:</u>	2.2	5
<u>Range:</u>	1.8-3.2	1-9

SEQUOIA REGION

<u>Big Baldy</u>		
% open canopy*		
		82
<u>Date</u>	<u>Hrs</u>	<u>Quail**</u>
5/15	2.1	10
5/15	2.2	15
5/16	2.1	21
5/16	1.5	9
5/31	1.6	8
6/01	1.5	16
<u>Average:</u>	1.8	13.2
<u>Range:</u>	1.5-2.2	8-21

<u>Stony Creek Ridge</u>		
% open canopy*		
		73
<u>Date</u>	<u>Hrs</u>	<u>Quail**</u>
5/16	2.1	7
5/16	1.7	2
5/17	2.0	8
5/17	1.5	5
5/30	1.7	15
5/31	1.5	5
<u>Average:</u>	1.8	7
<u>Range:</u>	1.5-2.1	2-15