

LIBRARY
USFWS - Ventura

LIBRARY - USFWS - VENTURA, CA



100154

Results of the 1990 Census
of the Mt. Langley Bighorn Sheep

October 1, 1990

U.S. FISH AND WILDLIFE SERVICE LIBRARY
2493 PORTOLA ROAD, SUITE B
VENTURA, CA 93003

Conducted by

Peggy E. Moore
Research Division, Yosemite National Park,
P. O. Box 700, El Portal, CA 95318

and

Leslie S. Chow
P. O. Box 389, Lee Vining, CA 93541

Administrative Report, Inyo National Forest
Completed under Contract Number 40-91W2-0-0262

INTRODUCTION

Mountain sheep (Ovis canadensis californiana) once ranged from the southern to the central Sierra Nevada wherever suitable summer and winter range existed (Jones 1950, Wehausen 1979). A decline in sheep numbers began with the influx of miners into the Sierra Nevada in the 1850s and continued with the introduction of domestic livestock in the 1860s (Wehausen 1980). Overhunting, forage competition, and diseases contracted from domestic livestock have been implicated as causes (Dixon 1936, Grinnell and Storer 1924, Jones 1950, Wehausen 1988). By the late 1970s mountain sheep in the Sierra Nevada had been reduced to approximately 250 sheep in 2 remnant herds (Wehausen 1980).

Based on recommendations by Wehausen (1979), the California Department of Fish and Game began a reintroduction program. The goal of the program was to restore sheep to historic range and create geographically disjunct populations to avoid catastrophic loss. Wheeler Ridge was the site of the first reintroduction in 1979 followed by a release of 11 sheep at Mt. Langley in 1980 (Andaloro and Ramey 1981). Fifteen sheep were added to the Mt. Langley area in 1982. Movements, reproduction, and mortality in the reintroduced herds were monitored for the first year after release (Andaloro and Ramey 1981).

In 1984, Blankenship and Wehausen conducted the first census at Mt. Langley and sighted 30 sheep (Calif. Dept. Fish and Game files, Bishop, Calif.). By 1986, all radio collars in the Mt. Langley herd had ceased functioning, and no sheep were sighted during that census effort (Ramey and Brown 1986). The 1987 census was more successful and accounted for a minimum of 37 sheep.

Although the most complete censuses are obtained when sheep congregate on winter range, a series of light winters, failure by the Langley herd to descend to lower elevations, and lack of knowledge regarding the location of winter range has produced a paucity of information on herd size and composition. This necessitated an attempt to census the sheep while they occupied summer range.

RESULTS

Between July 5 and September 15, 1990 we made four separate trips into the Mt. Langley herd summer range. By September 14, we had made 85 sheep sightings, including four sheep seen by members of our party on July 7, 1990. Of these, we are certain 42 were distinct individuals. This conclusion is based on the timing, locations, and group composition of sightings. All elevations cited refer to 7.5-minute U.S.G.S. quadrangle maps.

On our first trip, from July 5 to 8, sightings were limited to 3 ewes and a lamb seen by members of our party as the sheep traveled from the southwest side of Mt. Langley to the head of Diaz Creek (Figure 1). One of the ewes was collared. In addition, we saw signs of use on Woolyback (Peak 3918) and in the head of Diaz Creek.

There were numerous scats and bed sites on the south side of Woolyback, but all appeared to be more than 2 months old. In the bowl at the head of Diaz Creek, we found horn cores and sheaths beneath an overhanging boulder. The sheaths were weathered, and lichen was growing on the skull between the cores, indicating the remains had been there for some years. The horns were from a 4 or 5-year-old ram and had a basal diameter of 9.5 cm. In this same location, high on the north side of the ridge separating the head of Diaz Creek and Cottonwood Lakes, there were fresh tracks of a ewe and a lamb. They were made, presumably, by the sheep seen at 2:30 that afternoon as they headed into Diaz Creek.

Our second trip, August 17 to 19, turned up sheep sign but no sightings. Climbing to the Sierra Nevada crest from Meysan Lake, we sought sheep on Lone Pine Peak, in the north fork of Tuttle Creek, and on the ridges and slopes from Mt. LeConte to Mt. Irvine. There were tracks of an individual sheep low on the north slope of Mt. LeConte but no other sign in the area. However, we did note excellent habitat between Mt. LeConte and Mt. Mallory. It consisted of a steep, rocky ridge adjacent to an east-facing slope with moist sites supporting good forage.

From August 23 to 25 we searched Woolyback, the south, west, and upper north sides of Mt. Langley, Miter Basin, and the south fork of Tuttle Creek without seeing sheep. We found signs of use on the southwest and northwest slopes of Mt. Langley. Tracks on the west slope below the summit plateau were less than a day old on August 24.

Our final, 7-day-long effort began September 8 and proved to be more successful than the first three trips. At last light on the first day, we sighted 7 rams on the south side of Peak 3878 on Woolyback ridge (Figure 1). They remained in sight less than 5 minutes, and in the dim light could only be estimated to range in age from 3 to 7. The following day we found beds and scats where the rams had been seen and abundant tracks attributable to them but no other sign of recent use.

On September 9, we found a group of 18 sheep on the ridge separating Diaz and Tuttle Creeks (Figure 1). The band consisted of 7 ewes (2 collared), 5 lambs, a 2-year-old ram, 2 3-year-old rams, and 3 unidentified sheep (Table 1).

We made multiple sightings on September 10. We watched a single, radio-collared ewe move from the south slope of Mt. Langley into

Table 1. The number of sheep sighted by band and dates seen during the 1990 Mt. Langley mountain sheep census. *bold face = diff. sheep.*

Date	Number of Sheep Sighted (Distinct individuals in bold)	Ewes (Collared)	Lambs	Subadults	Rams	unident	map key
7/7/90	4	3 (1)	1				A
9/8/90	7				7		B
9/9/90	18	7 (2)	5	1 2-YR ♂	2 3-YR-olds	3	C
9/10/90	1 13 4	1 (1) 2	2				D E F
9/11/90	11	6	3	1 2-YR ♂	1 3-YR-old		G
9/12/90	5 7 (3)	3 3 (1)	2 3 (1)	1 2-YR-♂			H J
9/13/90	9	4	2	1 2-YR ♂ 1 1-YR ♂	1 3-YR-old		K
9/14/90	6	4	2				L
Total	42	15	10	4	10	3	

the head of Diaz Creek. From the summit of Langley, we sighted 13 members of the large band seen on the Diaz-Tuttle ridge the previous day. In addition, we found a new group of sheep on the ridge between the north and south forks of Tuttle Creek (Figure 1). The new band consisted of 2 ewes and 2 lambs.

September 11 efforts produced a single band on the southwest slope of Mt. Langley. There were 11 sheep present, 6 ewes (2 collared), 3 lambs, 1 2-year-old ram, and a 3-year-old ram. The group composition and pelage color of the 2 collared ewes (1 light, 1 dark) convinced us they were members of the band seen the 2 previous days.

A check of the Diaz-Tuttle ridge on September 12 found a single ewe and lamb in one area and 2 ewes and a lamb approximately 300 meters to the southeast. These also may have been part of the large band using the ridge previously. Later in the day we saw 3 ewes, 3 lambs, and a 2-year-old ram on the ridge between the forks of Tuttle Creek. Two of the ewes and their lambs may have been those sighted on September 10, but we considered the other 3 sheep to be new sightings.

The last sighting of new sheep was on September 13. We found 9 sheep bedded at the northeast end of the Major General ridge. There were 4 ewes, 2 lambs, and 3 rams (1, 2, and 3 years old) in the band. None of the ewes was collared, but 2 were distinctively colored. One was nearly white, and the other was very dark brown. Again group composition and individual characteristics indicated that these were distinctly different sheep from those previously counted. Most of this group was seen again on September 14 low on the west-southwest slope of Mt. Langley; the rams had either left the group (unlikely considering their ages) or escaped detection.

DISCUSSION

The ram:ewe ratio of 87:100 (excluding yearling rams) is higher than that seen by Wehausen (1980) in the Baxter and Williamson herds. However, our small sample size could lead to bias. If the unidentified sheep were ewes, the ram:ewe ratio would be 72:100, closer to Wehausen's figure for other Sierra Nevada herds.

Our repeated sightings of the same ewe bands in different locations without encountering additional sheep suggests that we saw the majority of animals using Mt. Langley for summer range. Logistical considerations prevented a more intensive survey of the north fork of Tuttle Creek. It is possible that additional sheep may be found there, and 42 sheep should be regarded as a minimum size for the Mt. Langley herd (Table 2). This is supported by our failure to see more rams in the older age

classes. The tendency for older rams to wander over greater distances makes them less likely to be seen.

Table 2. Minimum herd composition by sex and age at Mt. Langley, Inyo County, California.

Adult ewes	15
Adult rams	10
Lambs	10
Subadult rams	4
Unidentified	3
Total	42

OBSERVATIONS

We found sheep 3 out of the 6 times we examined the south slope of Mt. Langley. Abundant sign also indicates that the area is frequently used by ewe groups despite the high number of people climbing the peak.

The summit register on Mt. Langley held several reports of sheep spotted since the 1987 census:

9/4/89	"12 bighorns on knob south of Langley headed down Diaz Creek"	
9/8/89	"lots of bighorn sheep"	
10/15/89	"20 ewes, 1 ram"	by "one fool"
11/5/89	"sheep"	by "same fool"
4/12/90	"2 ewes"	by "Jill"

Despite a request in the register for comments on sheep sightings, however, only 1 appeared between July 7 and September 10.

MANAGEMENT RECOMMENDATIONS

1. Helicopter survey(s) should be done to determine the location of winter range. This could be supplemented by information from hikers and climbers who sight sheep bands between November and April (as reported in the Mt. Langley summit register).

2. To assist with future censuses, resident ewes should be captured and fitted with radio collars. Determining the location of winter range would assist in the decision whether to capture sheep in summer or winter. Resident ewes are more likely to remain with established bands in established use areas, and ewes are less likely to disperse out of the area (Brown and Ramey 1987).

3. To improve the success of census trips, contractors should concentrate their efforts in August and September when ewe groups are less secretive and use open, high-elevation slopes on all sides of Mt. Langley.

LITERATURE CITED

- Andaloro, L. and R. R. Ramey II. 1981. The relocation of bighorn sheep in the Sierra Nevada of California. Environ. Field Prog. Publ. No. 7, Univ. of Calif., Santa Cruz. 60 pp.
- Brown, L. M. and R. R. Ramey II. 1987 The results of the Mount Langley bighorn sheep census. Report to the U. S. Forest Service. 11 pp.
- Dixon, J. S. 1936. The status of the Sierra bighorn sheep. Trans. N. Am. Wildl. Conf. 1: 631-643.
- Grinnell, J. and T. I. Storer. 1924. Animal Life of the Yosemite. Univ. of Calif. Press, Berkeley. 752 pp.
- Jones, F. L. 1950. A survey of the Sierra Nevada bighorn. Sierra Club Bull. 35: 29-76.
- Ramey, R. R. II and L. M. Brown. 1986. Results of the Wheeler Ridge and Mount Langley bighorn sheep census: fall 1986. Unpublished report to the Inyo-Mono Fish and Game Commission. 19 pp.
- Wehausen, J. D. 1979. Sierra Nevada bighorn sheep: an analysis of management alternatives. Cooperative Admin. Rpt., Inyo National Forest and Sequoia and Kings Canyon National Parks. 92 pp.
- _____. 1980. Sierra Nevada bighorn sheep: history and population ecology. Ph.D. Thesis, Univ. of Michigan. 243 pp.
- _____. 1988. The historical distribution of mountain sheep in the Owens Valley Region. p. 97-105. In Mountains to Desert: selected Inyo readings. Friends of the Eastern Calif. Museum, Independence, CA. 259 pp.

Appendix A. Plant list for mountain sheep summer range on Mt. Langley and vicinity.

Ferns and Fern Allies

ASPIDIACEAE

*Woodsia scopulina**

SELAGINELLACEAE

Selaginella watsoni

Dicots

APIACEAE

Oreonana clementis

ASTERACEAE

Antennaria alpina

A. corymbosa

Chaenactis alpigena

Crepis nana

Erigeron compositus

E. pygmaeus

Haplopappus macronema

*Hulsea algida**

Senecio fremontii

S. werneriaefolius

Tanacetum canum

BRASSICACEAE

Draba breweri

Erysimum perenne

Phoenicaulis eurycarpa

CARYOPHYLLACEAE

Arenaria kingii ssp *compacta*

Silene sargentii

FABACEAE

Lupinus breweri

HYDROPHYLLACEAE

Phacelia frigida

ONAGRACEAE

Epilobium obcordatum

POLEMONIACEAE

Leptodactylon pungens

Phlox sp.

Polemonium eximium

POLYGONACEAE

Eriogonum incanum
E. ovalifolium
Oxyria digyna

PORTULACACEAE

Calyptridium umbellatum

PRIMULACEAE

Primula suffrutescens

RANUNCULACEAE

Ranunculus eschscholtzii

ROSACEAE

Hackelia sharsmithii
Holodiscus microphyllus
Ivesia lycopodioides
Potentilla drummondii

SAXIFRAGACEAE

Heuchera rubescens
Ribes inebrians

Monocots

CYPERACEAE

Carex congdonii
C. exserta
C. festivella
C. helleri*
C. rossii

JUNCACEAE

Juncus parryi
Luzula comosa

POACEAE

Calamagrostis breweri
C. purpurascens
Festuca ovina
Koeleria cristata
Melica stricta
Poa rupicola
P. suksdorfii
Muhlenbergia richardsonis
Sitanion hystrix*
Stipa occidentalis
Trisetum spicatum*

*Used by sheep on summer range

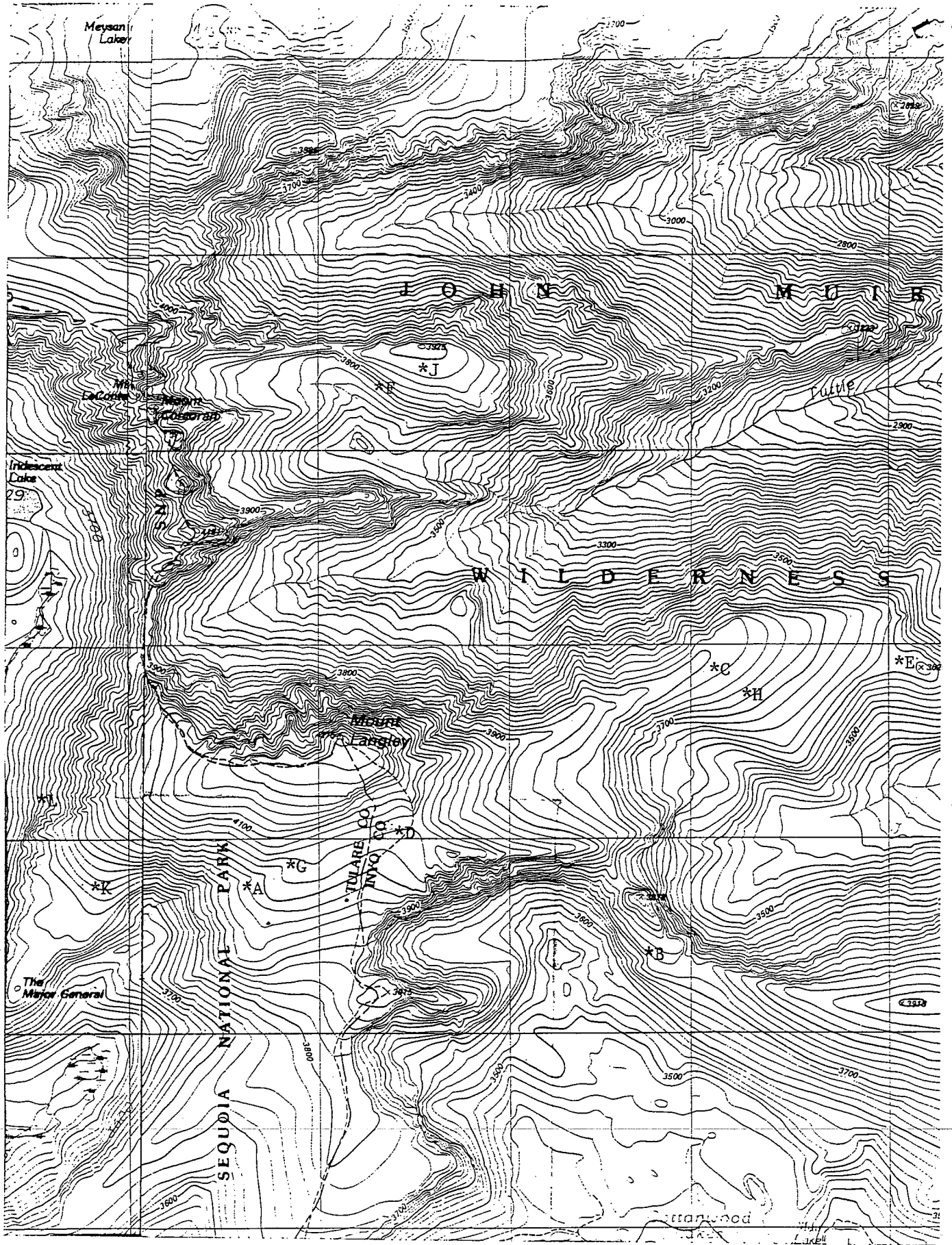


Figure 1. Map of Mt. Langley and vicinity showing locations of sheep sightings made during the 1990 census.