RESULTS OF THE WHEELER RIDGE AND MOUNT LANGLEY BIGHORN SHEEP CENSUS

FALL 1986

Prepared by:

Rob Roy Ramey II
Laura MacAlister Brown

PO Box 1143
Bishop CA 93514

ACKNOWLEDGMENTS

This project would not have been possible without the support of several individuals and organizations. Inyo and Mono Counties supported our field research with grants from their Fish and Game Fines Funds. The Society for the Conservation of Bighorn Sheep also provided valuable financial support. The California Department of Fish and Game and the The U. S. Forest Service supplied radios, four-wheel drive vehicles and fuel. Employees of the U. S. Tungsten and Stratcor Corporations assisted by reporting sightings near the Pine Creek Mill. Dr. John Wehausen provided much advice, and compiled the data describing the fates of released bighorn sheep. Robin Ingraham, Jr., told us of his bighorn sheep sightings and supplied us with timely photographic verification. Valuable text preparation service was provided by Bob Ellis.

1 BACKGROUND:

California bighorn sheep (*Ovis canadensis californiana*) populations began to decline in the late 1800's presumably because of the introduction of domestic stock diseases and competition for forage with domestic sheep (Wehausen 1979). In the southern Sierra Nevada, bighorn populations dwindled to roughly 250 animals, in two herds, by the late 1970's (Wehausen 1980).

Following the intensive field work of Wehausen (1979, 1980), the California Department of Fish & Game, U. S. Forest Service, National Park Service and Bureau of Land Management embarked on a program to reestablish bighorn sheep populations in other ranges in the Sierra Nevada. This program was implemented in 1978 and on 6 March 1979, nine bighorn sheep were captured from the Mt. Baxter herd. These animals were released on Wheeler Ridge, 40 miles to the north.

On 27 March 1980, the Wheeler Ridge herd was augmented with 10 additional animals captured from the Mt. Baxter herd. On 28 March, 21 bighorn sheep were captured from the Mt. Baxter herd, and 11 of these were released near Mt. Langley in the Southern Sierra.

In April of 1982, four radio collared rams were released on Wheeler Ridge to aid in locating groups of uncollared bighorn sheep and those animals whose radio collars had ceased to function. An additional four bighorn sheep (3 ewes, 1 ram) were released in March of 1986 for the same purpose. The radio collars from the 1986 release are the only radio collars currently functioning on Wheeler Ridge.

In contrast to the initial Wheeler Ridge reintroduction, the initial release of 11 bighorn sheep into the Mt. Langley area was plagued by early mortality (2), premature radio collar failure (2), and dispersal(Table 6). Two of these animals had dispersed north into the Mt. Williamson and Mt. Baxter herds within the first two years of release (Fish & Game Files). In March of 1982 the remaining group was augmented with an additional 15 bighorn sheep from the Mt. Baxter herd.

The most recent reintroduction of bighorn sheep into historic ranges in the Sierra Nevada took place in March 1986 when 27 bighorn sheep were released into Lee Vining Canyon, near Yosemite National Park. This herd will be intensely monitored by the National Park Service for at least the next 3 years.

The planning of future reintroductions in the Sierra Nevada depends upon the success of past reintroductions. If the Wheeler Ridge, Mt. Langley and Lee Vining herds prove to be productive, self-sustaining populations, then further

augmentations will not be necessary, outside of releasing animals with fresh radio collars periodically. If these populations are not viable, then augmentations may be necessary (Hargis 1986). Existing herds represent a large investment in animals, time and money. The maintenance of these herds, through augmentation, should take precedence over new reintroductions, when necessary. For these reasons, periodic censuses of existing populations are of paramount importance.

2 OBJECTIVES:

The objectives of this study were to conduct a census of the Wheeler Ridge and Mt. Langley populations. As stated earlier, the Lee Vining herd is being intensely monitored by the National Park Service and so its consideration is beyond the scope of this report.

3 RESULTS & DISCUSSION:

3.1 Wheeler Ridge

In 24 days of field work (48 person days) we were able to account for a minimum of 34 bighorn sheep on Wheeler Ridge (Tables 1,2,3,4,5; Figures 1,2). This number includes a minimum of 31 different bighorn sheep counted by us, plus two additional collared rams, and one additional uncollared ram observed by a backcountry climber near Treasure Lakes. We only included animals in the minimum figure which were clearly different individuals thus eliminating the possibility of double counting. For this reason and the possibility that other bighorn sheep went unobserved in the rugged terrain, our minimum figure is a very conservative value. Also, due to the unseasonably warm weather and lack of heavy snowfall in November and December, the bighorn sheep on Wheeler Ridge were not restricted to lower elevations, making observations difficult. Consequently, the actual number of bighorn sheep on Wheeler Ridge is probably higher than our minimum value. This conclusion is supported by the fact that we continued to find new individuals late in our census (Figure 3).

Based upon the large number of lambs (7) and yearlings (6) observed in proportion to ewes we conclude that the Wheeler Ridge herd has been very productive for at least the past 2 years. Additionally, the large number of unmarked animals (26) in relation to marked individuals (8) suggests that this population is self sustaining.

3.1.1 Sightings Of Wheeler Ridge Bighorn Sheep By Other Individuals. -

As mentioned earlier, a backcountry climber (Robin Ingraham, Jr.) sighted two collared rams (black & yellow collars) in a group of 13 rams near Treasure Lakes on 14 July 1986. He saw 3 yearlings and 10 mature rams. We confirmed this sighting by reviewing a photograph provided by Ingraham. He also found bighorn sheep tracks at 13,000 feet on Mt. Morgan (13,748 feet) on 15 October 1986.

In Addition to the observations of Ingraham, horse packers from the Pine Creek Pack Station, sighted a group of 20 bighorn sheep above Morgan Lakes in June 1986. Unfortunately they were unable to provide us with a composition of the group.

3.1.2 Observations Of Interest. -

Contrary to our expectations, all of the bighorn sheep groups observed by us were on the southern end of Wheeler Ridge. In past winters bighorn sheep have been regularly seen in the vicinity of Wells Meadow, however most of those sightings were made after substantial snowfalls (Fish & Game Files, Andaloro and Ramey, 1981). Unseasonably warm weather and lack of snow may have allowed bighorn sheep to remain high and unseen above the Wells Meadow area.

On the southern end of Wheeler Ridge, small groups of bighorn sheep were regularly observed close to or on the final stretch of the Pine Creek Mill road. On two occasions, we chased bighorn sheep off the road, not wanting them to be struck by passing vehicles.

Of the bighorn sheep regularly seen in the vicinity of the Pine Creek Mill road, two are worth further mention. One, an ewe with ear tag # 5185, was seen limping, putting little weight on her left front leg. This ewe was observed in the same condition by Tom Blankenship in March 1985 (Fish & Game Files). Despite the ewe's injury she appeared to be quite healthy and was able to move freely through rough terrain.

The other noteworthy bighorn sheep is a yearling male with abnormal ears. Instead of full sized ears, this yearling has small stubs that give the appearance of having been cut off halfway, rather like Vincent Van Gogh. A similar animal, though earless, was observed several times in the Mt. Baxter herd by John Wehausen (personal communication).

In our travels along the summit of Wheeler Ridge we located the intact carcass of a dead ram from the 1982 release. The carcass was mummified from the dry air and appeared to have been dead about a month. We suspect that the ram died of

natural causes, as a close inspection of the carcass did not reveal any signs of predation. On the basis of age, this ram was probably # 6370 (collar channel # 1), however a final determination will be made from the transmitter serial number by the Department of Fish & Game.

During close observations of radio collared ewes #13 and #14, we noticed a discrepancy between the actual collar colors/markings and those listed in the memo "Sawmill Canyon California Bighorn Sheep Relocation, March 5, 1986." The correct collar descriptions are listed below:

Collar Channel	*Ear Tag #*	*Collar Description*
13	8674 (374)	White collar with red "2", red stripe on transmitter box, "t" on collar tab.
14	8675 (375)	White collar with red "4".

3.2 Mount Langley

In 8 days of field work (16 person days) we were unable to locate any bighorn sheep in the Mt. Langley area (see Figure 4 for census routes). A lack of any functioning radio collars in the Mt. Langley herd made locating animals extremely difficult. The only fresh sign that we found were 2 sets of tracks 1/4 mile SE of point 12840, a formation commonly referred to as the "Wooleyback". This area had considerable sign (droppings and beds) from past use.

It is likely that the Mt. Langley herd still exists, as a total of 30 bighorn sheep were seen by Tom Blankenship and John Wehausen in September 1984 (Fish & Game Files). Also a group of about 20 bighorn sheep were seen amongst rocks above the end of Granite View Drive during winter of 1986 (Robin Hamlin, personal communication). In conclusion, the introduction of several radio collared bighorn sheep into the area should allow a much better census in the future.

4 RECOMMENDATIONS:

Based on our observations of the Wheeler Ridge herd and field work in the Mt. Langley area, the following recommendations are suggested for the future management of these herds. These recommendations are intended for the California Department of Fish & Game, U. S. Forest Service, National Park Service and other agencies responsible for the management of Sierra Nevada bighorn sheep.

1. Several radio collared bighorn sheep should be released into the Mt. Langley herd to aid in conducting a census next fall.

2. Conduct a census of the Mt. Langley herd before proceeding with the Great Western Divide reintroduction in 1988.

3. Radio and marking collars used in future releases should be white, and marked with large letters or numbers. These markings should be etched into the collar material, filled with indelible ink, and sealed with silicone. This system was developed by John Wehausen and Mike Hansen and is superior to collars marked with colored tape. Colored tape has a tendency to peel off or fade over time.

4. All future sightings of Wheeler Ridge and Mt. Langley bighorn sheep should be plotted on topo maps, by the observer; and placed in the files of the Department of Fish and Game. This will eliminate ambiguous descriptions and aid in compiling seasonal range maps.

Literature Cited

Andaloro, L. A. and R. R. Ramey. 1981. "The Relocation of Bighorn Sheep in the Sierra Nevada Mountains of California". Environmental Field Program publication #7. University of California, Santa Cruz. 60 pp.

Hargis, T. 1986. (Minutes of June 19, 1986 Sierra Bighorn Interagency Advisory Group Meeting). U. S. Forest Service, Lee Vining, CA.

Wehausen, J. D. 1979. "Sierra Nevada bighorn sheep: an analysis of management alternatives". Admin. report, Inyo National forest. 92 pp.

--------. 1980. "Sierra Nevada bighorn sheep: history and population ecology". Ph.D. thesis, University of Michigan, Ann Arbor. 240 pp.

Table 1

Minimum Composition of Bighorn Sheep Observed
Wheeler Ridge

All animals		Marked Animals	
adult ewes	10	ewes	5
yearling ewes	2		
lambs	7		
adult rams	11	rams	3
yearling rams	4		
total	34		8

Table 2

Marked bighorn sheep observed on Wheeler Ridge

Sex	Current Age	Year of Release	Collar Number	Collar Function	Ear Tag Number	Comments
F	4	1986	10	Yes	8673	w /lamb
F	2	1986	13	Yes	8674	wo/lamb
F	5	1986	14	Yes	8675	w /lamb
F	?	1980	--	---	5185	limping, w/lamb
F	?	1980	7	No	5178*	black collar, formerly blue
M	6	1979	1	No	4562*	black collar
M	?	1980	8	No	5065*	yellow collar, formerly yellow/ brown
M	9	1982	1	No	no tag	found dead probably 6370
M	~8	?	?	No	no tag	unknown animal, white collar, probably 1982 release, possibly 6367

* Ear Tag number not seen.

Table 3

Bighorn Sheep with natural markings
Wheeler Ridge

Sex	Age	Comments
F	?	Black mark on forehead. 
F	1	Very light coat color.
-	lamb	Very dark coat color.
M	1	Ears are 1/2 the length of normal.
M	1	Scars on forehead. 
M	1	Very dark horns.
M	3-5	Right horn tip chipped. 
M	6+	Chip out of left horn tip, cleft in right horn tip, discoloration on back of left horn near base. 
M	7-8	Scar on right leg below buttocks. 
M	7-8	No scars, very dark coat color.
M	5+	With black horizontal scar on left buttock

Table 4

Composition of Bighorn Sheep Groups
as shown in Figure 1.

Map Key	Date	Bighorn Sheep Observed
1	10/13/86	3 ewes (# 10, 13, 14) 2 lambs 1 yearling ram 1 ram
1	10/15/86	1 ewe (# 10) 1 lamb 1 yearling ram
2	10/22/86	1 ram
3	10/22/86	1 ram (9 years old, dead), with collar
4	10/23/86	1 ram
5	10/23/86	4 ewes 1 yearling ewe 3 lambs 1 ram (large, 7-8 years old) 1 yearling ram (dark horns)
6	10/23/86	1 ram
1	10/25/86	2 ewes (# 10, 13) 1 lamb 1 ram
7	10/26/86	2 ewes (# 10, 13) 1 lamb 1 ram
8	10/29/86	1 ewe 1 lamb 2 yearling rams 1 ram (7-8 years old)
8	11/11/86	1 ewe (# 5185) 1 lamb 1 yearling ram 1 ram
9	11/29/86	2 ewes (# 5185, unmarked) 1 ram
8	12/01/86	2 ewes (# 5185, unmarked) 1 ram

10	12/02/86	1 ewe (# 14) 1 yearling ewe 1 lamb 1 yearling ram 1 ram
8	12/02/86	2 ewes (# 5185, unmarked) 1 ram
11	12/04/86	1 ram (old white radio collar)
8	12/04/86	2 ewes (# 5185, unmarked) 1 ram
8	12/07/86	2 ewes (# 5185, unmarked) 1 ram
12	12/09/86	1 yearling ewe (light coat color) 1 ram (old white radio collar)
13	12/09/86	2 ewes (# 5185, unmarked) 2 rams
14	12/16/86	4 ewes (# 10,13, black collar, unmarked) 1 yearling ewe 1 lamb 2 rams (old white radio collar, unmarked)

Table 5

Fate of Bighorn Sheep Released on Wheeler Ridge

Year Released	Ear Tag Number	Sex/ Age	Collar Channel	Fate
1979				
	4566	F 2	2	--
	4567	F 4	3	--
	4573	F 3	4	killed in avalanche 1/80
	4571	F 4	-	--
	4562	M <1	1	alive 7/12/86
	4563	M <1	-	killed in avalanche 1/80
	4572	M 1	-	--
	4574	M 8	5	--
	4576	M 7	6	--
1980				
	5063	F -	-	--
	5065	M 1	8	killed after release 8/80 ?
	5178	F -	7	alive 12/16/86
	5181	M <1	-	--
	5182	F -	6	--
	5183	F -	-	--
	5184	F <1	-	--
	5185	F -	-	seen limping 3/85, 12/86
	5187	F -	-	--
	5064	F -	-	--
1982				
	6378	M 5	3	died 5/82
	6356	M 6	7	-- Seen Mtn. 4/87
	6370	M 5	1	found dead 10/23/86
	6367	M 4	9	probably seen 12/09/86
1986				
	8673	F 3	10	alive 12/86
	8674	F 1	13	alive 12/86
	8675	F 4	14	alive 12/86
	8669	M 1	12	alive 12/86

Table 6

Fate of Bighorn Sheep Released on Mt. Langley

Year Released	Ear Tag Number	Sex/ Age	Collar Channel	Fate
1980				
	5177	F -	--	--
	5180	F <1	--	--
	5188	F -	1	killed spring 1980
	5189	F -	--	dead 5/17/83 Lone Pine Pk.
	5191	M 2	9	--
	5407	F -	7	alive 8/84
	5411	M -	10	--
	5412	M 2	--	--
	5415	M 2?	--	seen in Sawmill Canyon winters 1981-1985
	5418	F -	6	collar dropped on Mt. Williamson 1982
	5419	F -	5	killed spring 1980
1982				
	6364	F 5	8	alive 8/84
	6359	F 2	7	alive 8/84
	6354	F 2	11	alive 8/84
	6355	F 2	12	alive 8/84
	6357	F 3	13	alive 8/84
	6365	F <1	--	--
	6361	M 6	10	dead fall 1983
	6377	M 2	15	dead 7/15/83
	6358	M 4	9	--
	6368	M 2	16	alive 8/84
	6360	M 7	--	--
	6379	M 8	--	--
	6366	M 6	--	seen in Mt. Williamson herd 1/83, 12/84
	6369	M 6	--	--
	6380	M 5	--	--

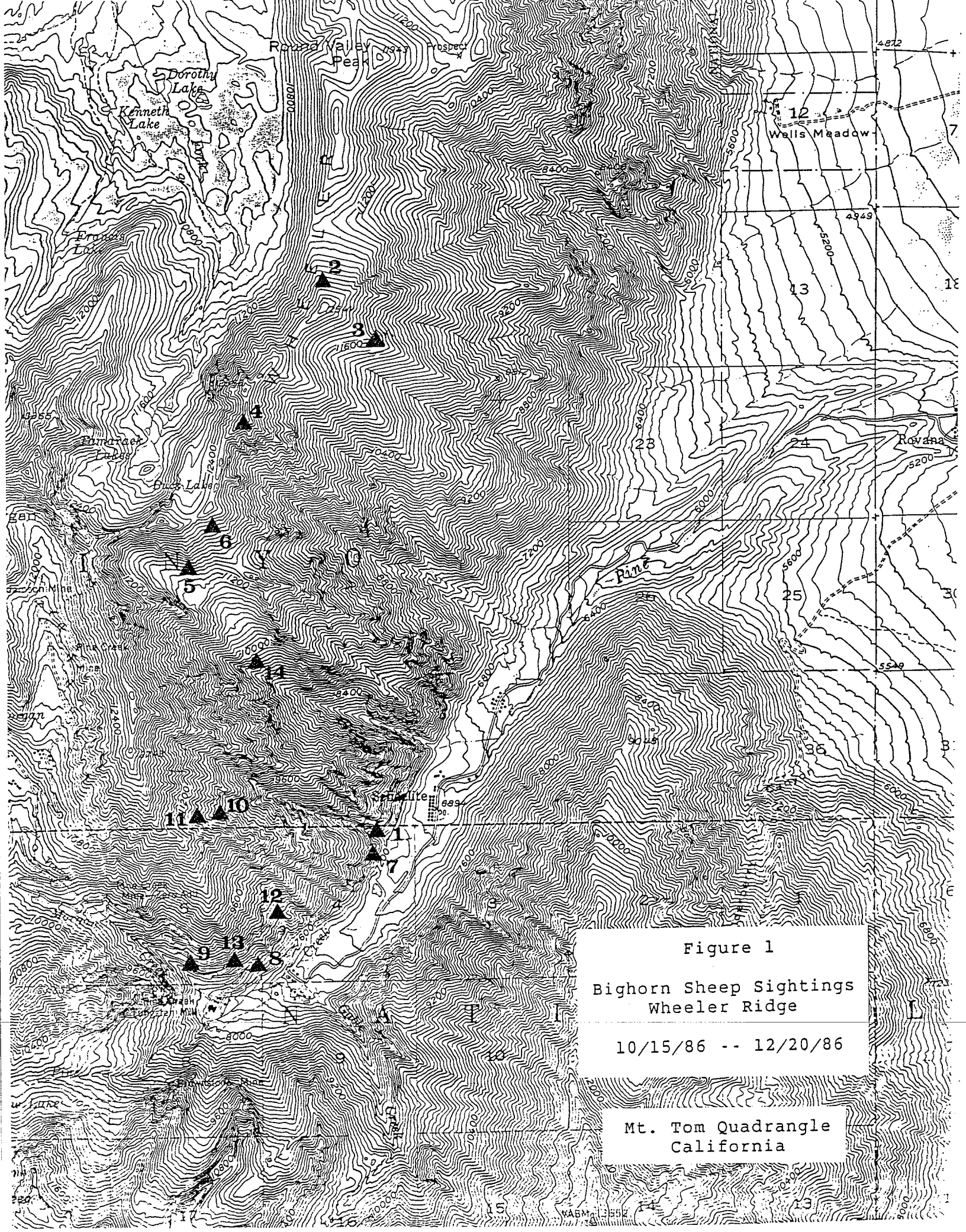

Figure 1

Bighorn Sheep Sightings
Wheeler Ridge

10/15/86 -- 12/20/86

Mt. Tom Quadrangle
California

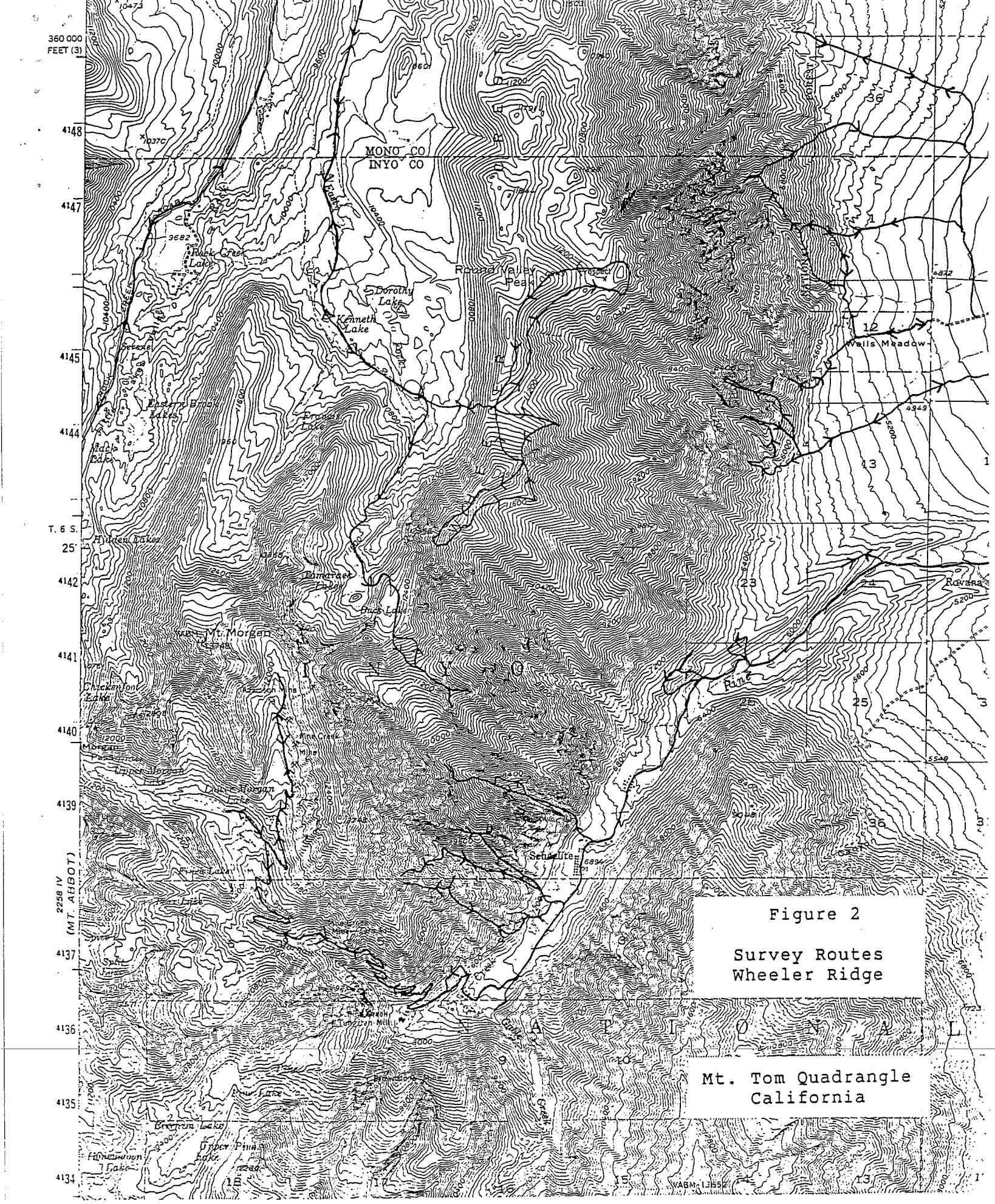

Figure 2

Survey Routes
Wheeler Ridge

Mt. Tom Quadrangle
California

Figure 2

Survey Routes
Wheeler Ridge

Figure 3

Bighorn Sheep Counted vs. Days in Field
Wheeler Ridge