2016 Spring Desert Bighorn Helicopter Surveys

Synopsis: Surveys of all 3 subpopulations of the Bootheel metapopulation were flown. A record number of bighorn were observed in each survey with a metapopulation total of 308 observed. In the spring 2003 survey of these same 3 subpopulations, just 35 bighorn were observed. The metapopulation estimate is 350-410 (midpoint est.=380).

Little Hatchet Mountains

We observed 89 bighorn in 11 groups during the helicopter survey. This is the greatest number of bighorn ever seen in a survey of the Little Hatchet Mountains. There was a substantial increase in the number of ewes, from 32 to 42, concomitant with the observation of 13 radiocollars although there are just 7 functional collars on bighorn released in the Little Hatchets. This is a function of some number of bighorn moving from the Big Hatchet subpopulation to the Little Hatchet subpopulation. Further evidence is that 2 radiocollared rams, released in the Big Hatchets in 2014, were found dead in the Little Hatchets during winter 2016.

This survey was completed in 2.2hr for an observation rate of 40.4 bighorn/hr. I believe that this is the highest observation rate ever reported for New Mexico. The observed lamb:ewe ratio was 52:100, with 23 lambs. This is the greatest number of lambs ever observed in a Little Hatchet survey.

In spring 2015 just a single CIV ram was observed compared with 8 observed in this survey. Presumably some were recruited from CIII rams observed in 2015 but some may have moved from the Big Hatchets.

Table 2. Bighorn sheep observed or accounted for in the Little Hatchet Mountains 2008-2016.

Year	Total	Ewes	Y. Ewe	Lambs	CI	CII	CIII	CIV	Total Rams
2008s	58	19	2	12	6	4	4	9+ (2)	25
2009s	43	16	3	9	1	3	5	6	15
2010a	45	17		6	4	4	9	5	22
2012a	41	18 +4		4	1	5	8	5	19
2013a	66	27		13	7	7	5	7	26
2014a	57	27	1	5	9	10	3	1	23
2015s	68	27	5	10	10	3	12	1	26
2016s	89	42	2	23	4	5	6	7	22

a) Autumn
s) Spring

Big Hatchet Mountains

For the first time the Big Hatchets were flown over 2 days to increase the probability of completion because of predictions of high winds. On the first day, 4/29/16, just the lower portion of the habitat in the south-eastern portion of the range was flown in 1.75 hours. An additional 3.75 hours were flown the following day for a total of 5.5 hours.

A total of 116 bighorn was observed in 23 groups for an average group size of 5.0. The largest group size was 34. This was the greatest number of bighorn ever observed in the Big Hatchets. The 21 lambs were the greatest number of lambs ever observed as well, with a ratio of 37:100.

Because of the movement of bighorn from the Big Hatchets to the Little Hatchets this subpopulation may have only increased minimally. Total expected radiocollars in the Hatchets is 52, of which only 37 were documented. If the 15 radiocollars missed were alive this would be a minimum addition. Only 24 radiocollars were seen in the Big Hatchets. If 6 of the 13 collars in the Little Hatchets were Big Hatchet bighorn then there would have been the potential for 39 radiocollared sheep in the Big Hatchets.

Table 3. Big Hatchet desert bighorn sheep surveys 2010-2016.

Year	Total	Ewes	Y. Ewes	Lambs	CI	CII	CIII	CIV	Total Rams
Jun10	57	22		11	2	4	7	12	25
May11	47	12	4	9	6	1	9	6	22
Oct12	71	27		13	4	8	6	13	31
Oct13	51	21	2	1	9	5	6	7	27
Oct14	47	18	1	6	3	9	4	6	22
Nov14	113	46	1	6					58
Oct15	99*	47	3	15	2	7	6	19	34
Apr16	116	47	10	21	7	9	10	12	38

*99 observed+20 missed collars—some may have been Little Hatchets

Table 4. Spring population estimates for desert bighorn sheep populations in New Mexico, 2016. Minimum number of lambs in parentheses.

Herd	L:E (lambs/100 ewes)	Population Estimate
Fra Cristobals		250-285*
Caballos		125-140*
Peloncillo	73:100 (38)	125-140
Little Hatchets	52:100 (23)	90-110
Big Hatchets	37:100 (21)	135-155
Sierra Ladron		80-95*
San Andres		200-240*
Totals		1005-1165 Midpoint=1085

*did not survey—added 10% to fall estimates