2019 Spring Desert Bighorn Helicopter Surveys

Synopsis: Between May 21-24, 2019 surveys were flown in 3 populations: Peloncillos, Big Hatchets, and Little Hatchets. Although 5 of 8 herds were not flown, population projections result in the first decline in the estimated number of desert bighorn sheep since 2001 (1295 vs. 1262). Rams are felt to be generally underrepresented in these aerial surveys. An analysis of the last 10 years suggests that a higher percentage of CI and CII rams may be missed because the mean number observed is substantially less than the number of CIII and CIV's. However, there may be 7+ years of cohorts in the CIII/CIV versus just 3-4 years in the CI and CII classes. Harvest of approximately 20-25% of CIII and CIV rams combined with higher natural mortality rates in the oldest cohorts should result in observed numbers closer to parity which is not what is generally observed.

The pilot was G. Ezell and observers were E. Rominger and C. Ruhl.

Peloncillo Mountains

We flew a 2-day survey in the Peloncillo Mountains. The survey platform was a Bell Long Ranger. We searched all of the area north of I-10 and documented 14 including a GPS collared ram from Arizona. Only 3 were found in the Steins area compared with many years of 10+.

We saw a total of 105 bighorn in 20 groups (mean=5.2) in 6 hours and 13 minutes of observation time. Cottonwood Canyon and Post Office Canyon on the south-end were flown but no bighorn were seen south of Owl Canyon. The largest group was 19 and the lamb:ewe ratio was 38:100. Three lions were culled since the previous survey, including a lion that had just killed a GPS collared ewe near Granite Peak. Multiple other lions have been recorded on BLM WCU cameras. Although 24 females were added to this population in the fall of 2018 the observed number of ewes declined from 51 to 49 since the spring 2018 survey.

Table 3. Bighorn sheep observed or accounted for in the Peloncillo Mountains, 2009-2019.

Year	Total	Ewes	Y. Ewe	Lambs	L:E	CI	CII	CIII	CIV	Total rams
2009	44	20	2	10	50:100	2	2	7	1	12
2010	49	17	3	10	59:100	3	3	5	8	19
2011	54	20	4	12	60:100		1	11	7	19
2012	56	26	2	18	69:100	1	1	3	5	10
2013	62	34	5	7	21:100	5	1	8	2	16
2014	46	24	2	10	42:100	5	1	2	2	10
2015	79 (86)	36	6	12	29:100	12	4	2 (+7)*	7	25
2016	103	51	1	38	73:100	3	6	1	3	13
2017	99	42	5	21	45:100	4	5	11	9	29
2018	98	51	2	19	36:100	1	6	12	7	26
2019	105	49	1	19	38:100	4	4	9	19	36

*9 CIII rams seen by guide T. Hatch

Big Hatchet Mountains

The Big Hatchets were flown for 4.3 hours of observation time over 2 days. A total of just 68 bighorn was observed in 19 groups for an average group size of 3.6. This included a group of 3 observed in the Sierra Rico mountains, north of the Big Hatchets. This was the fourth time bighorn have been found in the Sierra Rico's. The largest group was 20. This is the third year of decline in the number of observed bighorn since the 116 seen in 2016. The lamb:ewe ratio was 48:100.

Table 3. Big Hatchet desert bighorn sheep surveys 2010-2019.

Year	Total	Ewes	Y. Ewes	Lambs	CI	CII	CIII	CIV	Total Rams	Lamb:ewe ratio
Jun10	57	22		11	2	4	7	12	25	50:100
May11	47	12	4	9	6	1	9	6	22	56:100
Oct12	71	27		13	4	8	6	13	31	48:100
Oct13	51	21	2	1	9	5	6	7	27	4:100
Oct14	47	18	1	6	3	9	4	6	22	32:100
Nov14	113	46	1	6					58	
Oct15	99*	47	3	15	2	7	6	19	34	30:100
Apr16	116	47	10	21	7	9	10	12	38	37:100
May17	112	45	6	17	4	16	9	15	44	33:100
May18	84	34	2	18	6	5	8	11	30	50:100
May19	68	31	2	16	2	3	6	8	19	48:100

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

Little Hatchet Mountains

We observed 72 bighorn (56 adults) in 15 groups during the helicopter survey. This survey was completed in 2.0hr for an observation rate of 36 bighorn/hour. The observed lamb:ewe ratio was 53:100, with 16 lambs.

Table 3. Bighorn sheep observed or accounted for in the Little Hatchet Mountains 2008-2017.

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
2017s	52	24	6	13	4	2	1	2	9

2019s	72	29	1	16	3	6	3	14	26

a) Autumn
s) Spring

Table 4. Spring population estimates for desert bighorn sheep populations in New Mexico, 2019. Minimum number of lambs in parentheses.

Herd	L:E (lambs/100 ewes)	Population Estimate
Fra Cristobals	Not flown*	257-307
Caballos	Not flown*	233-266
Peloncillo	38:100 (19)	140-160
Little Hatchets	53:100 (16)	75-90
Big Hatchets	48:100 (16)	85-115
Sierra Ladron	Not flown*	151-176
San Andres	Not flown**	185-215
Sacramentos	Not flown*	28-40
Totals		1154-1369 Midpoint=1262

*did not survey—added 40 lambs:100 ewes to 2018 observed ewes
** 2018 removal of 34 sheep + apparent high lion predation based on 2 radiocollared morts ~15% and 20 lambs:100 ewes