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CHAPTER 2: DALL SHEEP MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013[1]

LOCATION

GAME MANAGEMENT UNIT: Portions of 9B, 16B, 17B, 19B and 19C (4,600 mi^2)

GEOGRAPHIC DESCRIPTION: Alaska Range west and south of Denali National Park and Preserve

BACKGROUND

The Alaska Range West (ARW) is a popular Dall sheep hunting area for both resident and nonresident hunters. This area is not road-accessible but is relatively close to Alaska's largest population centers. In addition, the area is also open to hunting using a general season harvest ticket. This combination attracts large numbers of hunters, particularly to Unit 19C where crowding is a common complaint.

Aircraft transportation dominates access to the area. Guides are required for nonresident sheep hunters throughout Alaska and a large number of guide operations offer sheep hunts in ARW. Sealing of sheep has been required since fall 2005.

Aerial surveys were conducted in ARW during the 1960s, 1970s, and 1980s. More recently, aerial sheep trend and composition surveys have been conducted in Unit 19C, where about 86% of the sheep harvest within ARW occurs.

MANAGEMENT DIRECTION

MANAGEMENT GOAL

- Provide an opportunity for sustainable harvest of Dall sheep rams similar to average historic levels.

MANAGEMENT OBJECTIVE

- Using a full-curl harvest strategy, maintain harvest of rams averaging ≥8 years old.

  Activities

  1. Monitor harvest by hunters and assess age of the harvest through harvest tickets and horn sealing.
  2. Assess population trend, age, and composition through annual aerial surveys.

[1] At the discretion of the reporting biologist, this unit report may contain data collected outside the report period.

METHODS

Aerial trend and composition surveys were conducted in suitable sheep habitat in mid- to late June during 2008–2010 and 2013, using 2 PA-18 aircraft. Surveys were flown during periods of calm air and were terminated as turbulence developed. We flew along contours at altitudes of 300–700 feet above ground level at airspeeds of 60–80 mph. The Sheep Creek East, Jones River, Tonzona River, Post River, and the Windy Fork areas were surveyed in June 2008–2010 and 2013, which provides a basis for comparison between years.

Sheep were counted and classified as legal rams (full curl or larger), sublegal rams, ewes-like, and lambs. The ewe-like category included adult ewes, all yearlings, and young rams (≤½-curl horns) not distinguishable from ewes. Data from these areas were pooled each year.

Harvest by hunters, hunter effort, hunt location, transportation used, and age and horn characteristics of harvested rams were monitored using harvest reports submitted by hunters and sealing data. These data were summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY12 = 1 July 2012 through 30 June 2013).

RESULTS AND DISCUSSION

POPULATION SIZE AND COMPOSITION

Population Size and Trend

Cloud cover, smoke, and/or winds prevented surveys of some areas in all years but 2010 (Table 1). Therefore, comparisons among areas were made using only data from Sheep Creek East, Jones River, Tonzona River, Post River, and the Windy Fork, as these areas were surveyed across all years (Table 2). We did not estimate total sheep population size in ARW, but data from aerial surveys of limited areas provide information about potential changes in sheep density. Density of sheep observed during these surveys was lower in 2013 compared to 2010 (1.7 and 2.8 sheep/mi^2; Table 2). These lower densities were in large part due to fewer lambs, which apparently had very poor survival in 2013.

Composition

The percentage of legal rams identified during 2013 (5.8%; Table 2) was slightly higher than 2010 (4.8%). However, there is no level of precision associated with these surveys. The higher percentage of full-curl rams observed was likely due to the fact that we saw fewer sheep overall in 2013, yet a similar number of full-curl rams.

The number of lambs observed in 2013 was the lowest recorded since 2008 in these areas (Table 2). The ewe-like category was also the lowest of any survey with 273 in 2013 compared to 491 in 2010 (Table 2). We experienced a significant icing event in January 2013 as well as a very late break-up in May. This combination of weather events may have had a negative impact on ewe-like sheep and lambs.

MORTALITY

Harvest

Alaska Board of Game Actions. The Alaska Board of Game (BOG) made no regulatory changes for sheep in ARW during RY10–RY13, and no emergency orders were issued. Beginning in

RY14, BOG authorized a limited winter registration hunt by resident hunters in Unit 19C. A legal sheep was defined as rams smaller than ¾-curl, those not broomed, and ewes not accompanied by lambs. Aircraft will not be allowed, and hunters will be required to call in to receive a hunt period.

Season and Bag Limit. Resident and nonresident sheep hunters in ARW were allowed to hunt during 10 August–20 September with a bag limit of 1 ram with full-curl or larger horns, or at least 8 years of age, or with both horns broomed. The full-curl regulation has been in effect since RY89. Before RY89 the minimum horn size requirement was ⅞-curl and prior to RY79 it was ¾-curl or larger.

Harvest by Hunters. Reported average harvest of sheep in ARW was 85 rams during RY08–RY12 (Table 3). This was slightly higher than the average reported harvest of 76 rams during RY05–RY09 (Seavoy 2011), but substantially lower than the average annual harvest of 139 during RY90–RY97 (Szepanski 2005).

The total number of sheep hunters using ARW averaged 182 during RY08–RY12 (Table 4). This was similar to the average number of hunters (179) during RY05–RY09 (Seavoy 2011), but lower than the average of 251 hunters per year during RY90–RY97 (Szepanski 2005).

During RY08–RY12, the average horn length of rams harvested was 35.5 inches and the average age of rams harvested was 8.7 years (Table 3). In general, average horn length and age of harvested rams is influenced by the full-curl regulation because most rams become full-curl at 6–8 years of age and usually have a horn length ≥34 inches (Heimer and Smith 1975).

The number of rams harvested during RY08–RY12 with horns ≥40 inches varied from a low of 1 in RY08 to a high of 8 during RY12 (Table 3).

Permit Hunts. A federal subsistence hunt has occurred in Unit 9B since RY95. One ram was taken under this federal permit in RY08 and 3 in RY09 (Harvest data from Dall sheep harvest database using Alaska Department of Fish and Game's [ADF&G] Wildlife Information Network).

Hunter Residency and Success. During RY10–RY12 there were similar numbers of nonresident and resident hunters, however, nonresidents were much more successful than residents (71% versus 28%; Table 4). Success rates for nonresidents were likely higher than those for resident hunters because nonresidents typically were accompanied by guides.

Harvest Chronology. As in previous reporting periods, most of the sheep harvest in ARW occurred during the first week of the 6-week season (Table 5). During RY08–RY12, an average of 36% of the harvest occurred during 10–16 August and over half the sheep were harvested by the end of the second week.

Transport Methods. Most successful sheep hunters used aircraft during RY08–RY12 (Table 6). Few villages or roads are within or adjacent to ARW sheep habitat, and few rivers are suitable for boat travel.

Other Mortality

Winter weather, nutritional status, wolves, coyotes, golden eagles, and bears are all potential sources of mortality, but the effects of these are unknown in this area.

MANAGEMENT PROBLEMS–NEEDS

The number of guide–outfitters operating in ARW was unlimited during RY10–RY12 and previous reporting periods. Hunter reports of crowding seem to escalate each year and we are beginning to receive complaints from not only resident hunters, but also guides. Common complaints include crowding and guides aggressively dominating the early part of the season and disrupting people's hunts. It appears the quality of the sheep hunting experience is being affected in a negative way by these conditions. BOG has received a steady number of proposals in recent years requesting some sort of preference for resident hunters. To address these proposals, BOG requested a survey of sheep hunters be initiated to look for common themes as well as possible solutions. Also the Big Game Commercial Services Board, which oversees guide, outfitter, and transporter activities, is currently considering regulations to create exclusive guide use areas that would limit the amount of guided hunting in these areas. We will monitor these 2 processes over the next year to see if any solutions emerge to alleviate this allocation issue.

CONCLUSIONS AND RECOMMENDATIONS

We saw a large decline in the number of lambs in 2013 which was most likely related to weather events including a particularly late spring. We will continue to attempt composition surveys annually; however weather does not permit us to fly every year. Also, methods to estimate statistical precision, e.g., by utilizing double-count methods (Whitten 1997) are not used because they are cost prohibitive. Therefore the unknown precision of these data limits our ability to interpret them.

Harvest report data show an average of 182 hunters during RY08–RY12. Hunters interviewed by Alaska Wildlife Troopers and ADF&G staff during sealing have complained of hunter crowding. While the current level of hunting pressure is well below the average of 251 hunters per year during RY90–RY97 (Szepanski 2005), hunters were not required to bring sheep horns to be sealed during that time. Therefore, complaints may not have been registered because they did not encounter agency personnel. Harvest during RY08–RY12 continued to be lower than in the 1990s, but was slightly higher than reported harvest during RY05–RY09 (Seavoy 2011).

We met our management goal of providing a sustained opportunity to harvest Dall sheep rams with an average harvest during RY08–RY12 of 85 full-curl rams. With an average age of 8.7 years, we also met the management objective of maintaining a harvest of rams that averaged ≥8 years old (Table 3).

We met our management goal and objective with the current seasons and bag limits, which have been in effect since RY89. We recommend no regulatory changes at this time, but will see what if any regulatory changes come from the BOG survey and the exclusive guide use area process.

For the next report period, the following additional management objective will be in place to address local concern about opportunity to harvest sheep:

- Maintain a winter harvest of fewer than 10 sheep smaller than ¾-curl, not broomed, and not accompanied by a lamb.

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Table 1. Unit 19C aerial Dall sheep composition counts in all areas, regulatory years[a] 2007–2012.

Date	Area (mi^2)	Survey time (hr)	Rams			Ewe-likes[b] (%)	Lambs (%)	Unk (%)	Total sheep	Density (sheep/mi^2)
			Full-curl (%)	<Full-curl (%)	Total (%)					
20–22 Jun 2008	435	17.1	50 (7.8)	130 (20.3)	180 (28.1)	382 (59.7)	78 (12.2)	0 (0)	640	1.5
26 June 2009	315	14.3	23 (3.6)	162 (25.1)	185 (28.6)	361 (55.9)	100 (15.5)	0 (0)	646	2.1
21–22 Jun 2010	575	24.4	72 (3.9)	380 (20.6)	452 (24.5)	1,040 (56.4)	353 (19.1)	0 (0)	1,845	3.2
17–19 Jun 2013	465	23.0	61 (6.9)	225 (25.5)	286 (32.4)	503 (57.0)	94 (10.6)	0 (0)	883	1.9

[a] Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 2008 = 1 July 2008–30 June 2009).
[b] Ewe-likes includes adult ewes, all yearlings, and young rams not distinguishable from ewes.

Table 2. Unit 19C aerial Dall sheep composition counts in the Sheep Creek East, Jones River, Tonzona, Post, and Windy Fork count areas, regulatory years[a] 2007–2012.

Date	Area (mi^2)	Survey time (hr)	Rams			Ewe-likes[b] (%)	Lambs (%)	Unk (%)	Total sheep	Density (sheep/mi^2)
			Full-curl (%)	<Full-curl (%)	Total (%)					
20–22 Jun 2008	315	12.6	50 (8.0)	128 (20.5)	178 (28.5)	371 (59.5)	75 (12.0)	0 (0)	624	2.0
26 Jun 2009	315	14.3	23 (3.6)	162 (25.1)	185 (28.6)	361 (55.9)	100 (15.5)	0 (0)	646	2.1
21–22 Jun 2010	315	13.5	43 (4.8)	194 (21.7)	237 (26.6)	491 (55.0)	164 (18.4)	0 (0)	892	2.8
17–19 Jun 2013	315	16.3	44 (5.8)	169 (22.4)	213 (28.3)	273 (36.3)	54 (7.2)	0 (0)	540	1.7

[a] Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 2008 = 1 July 2008–30 June 2009).
[b] Ewe-likes includes adult ewes, all yearlings, and young rams not distinguishable from ewes.

Table 3. Alaska Range West Dall sheep harvest, horn length, and age, regulatory years[a] 2008–2012.

Regulatory year	Rams harvested	$\bar{x}$ Horn length (inches) of full-curl rams	Rams harvested ≥40 inches	$\bar{x}$ Age
2008	84	35.4	1	8.7
2009	79	35.9	2	8.8
2010	79	35.1	2	8.4
2011	89	35.5	3	8.7
2012	96	35.8	8	8.9

[a] Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 2008 = 1 July 2008–30 June 2009).

Table 4. Alaska Range West Dall sheep hunter residency and success, regulatory years[a] 2008–2012.

Regulatory	Successful				Unsuccessful				Total
year	Resident	Nonresident	Unk	Total (%)	Resident	Nonresident	Unk	Total (%)	hunters
2008	22	46	16	84 (44)	70	31	6	107 (56)	191
2009	33	39	7	79 (41)	88	20	4	112 (59)	191
2010	25	54	0	79 (44)	68	31	2	101 (56)	180
2011	16	70	3	89 (52)	66	15	2	83 (48)	172
2012	32	63	1	96 (54)	56	25	0	81 (46)	177

[a] Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 2008 = 1 July 2008–30 June 2009).

Table 5. Alaska Range West Dall sheep harvest chronology by month/day, regulatory years[a] 2008–2012.

Regulatory	Harvest chronology by month/day (%)							
year	8/10–8/16	8/17–8/23	8/24–8/30	8/31–9/6	9/7–9/13	9/14–9/20	Unk	*n*
2008	35 (42)	21 (25)	9 (11)	9 (11)	5 (6)	4 (5)	1 (1)	84
2009	27 (34)	13 (16)	15 (19)	6 (8)	8 (10)	10 (13)	0 (0)	79
2010	21 (27)	21 (27)	9 (11)	11 (14)	14 (18)	3 (4)	0 (0)	79
2011	33 (37)	12 (13)	17 (19)	16 (18)	8 (9)	3 (3)	0 (0)	89
2012	41 (43)	21 (22)	8 (8)	8 (8)	14 (15)	4 (4)	0 (0)	96

[a] Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 2008 = 1 July 2008–30 June 2009).

Table 6. Alaska Range West Dall sheep harvest by transport method, regulatory years[a] 2008–2012.

Regulatory year	Harvest by transport method (%)							
	Airplane	Horse	Boat	3- or 4-wheeler	ORV	Highway vehicle	Unk	*n*
2008	75 (89)	3 (4)	1 (1)	2 (2)	2 (2)	0 (0)	1 (1)	84
2009	62 (78)	7 (9)	3 (4)	1 (1)	2 (3)	1 (1)	3 (4)	79
2010	59 (75)	2 (3)	0 (0)	4 (5)	1 (1)	5 (6)	8 (10)	79
2011	78 (88)	2 (2)	0 (0)	3 (3)	5 (6)	1 (1)	0 (0)	89
2012	90 (94)	0 (0)	0 (0)	0 (0)	6 (6)	0 (0)	0 (0)	96

[a] Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 2008 = 1 July 2008–30 June 2009).