Species Management Report and Plan ADF&G/DWC/SMR&P–2026–16

Dall Sheep Management Report and Plan, Game Management Unit 11:

Report Period 1 July 2016–30 June 2021, and

Plan Period 1 July 2021–30 June 2026

Heidi L. Hatcher

2026

Alaska Department of Fish and Game Division of Wildlife Conservation

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Species management reports and plans provide information about species that are hunted or trapped and management actions, goals, recommendations for those species, and plans for data collection. Detailed information is prepared for each species every 5 years by the area management biologist for game management units in their areas, who also develops a plan for data collection and species management for the next 5 years. This type of report is not produced for species that are not managed for hunting or trapping or for areas where there is no current or anticipated activity. Unit reports are reviewed and approved for publication by regional management coordinators and are available to the public via the Alaska Department of Fish and Game's public website.

This species management report and plan was reviewed and approved for publication by Todd Rinaldi, Management Coordinator for Region IV for the Division of Wildlife Conservation.

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Cover Photo: A family group of Dall sheep. ©2018 ADF&G. Photo by Heidi Hatcher.

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Purpose of this Report

This report provides a record of survey and inventory management activities for Dall sheep (*Ovis dalli*) in Game Management Unit 11 for the 5 regulatory years 2016–2020 and plans for survey and inventory management activities in the next 5 regulatory years, 2021–2025. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY16 = 1 July 2016–30 June 2017). This report is produced primarily to provide agency staff with data and analysis to help guide and record agency efforts but is also provided to the public to inform them of wildlife management activities. The Alaska Department of Fish and Game's (ADF&G, the department) Division of Wildlife Conservation (DWC, the division) publishes these reports on a 5-year cycle to document trends and describe potential changes in data collection activities for Dall sheep.

I. RY16–RY20 Management Report

Management Area

Unit 11 (12,784 mi^2) consists of that area draining into the headwaters of the Copper River south of Suslota Creek and the area drained by all tributaries into the east bank of the Copper River, between the confluence of Suslota Creek with the Slana River and Miles Glacier (Fig. 1). Most of Unit 11 is included in the Wrangell-Saint Elias National Park and Preserve.

The unit includes portions of 3 of Alaska's 32 ecoregions: the Wrangell Mountains, the Chugach-St. Elias Mountains, and the Copper River Basin. Maps for Unit 11 boundaries and special management areas can be found on the ADF&G website.[1]

Summary of Status, Trend, Management Activities, and History of Dall Sheep in Unit 11

Sheep numbers in the Wrangell Mountains prior to the 1950s are unavailable. While sheep surveys were done during the late 1950s and 1960s, they are generally not comparable to more recent surveys because early survey intensity and specific area boundaries are unknown. Specific count areas (CAs) and techniques for aerial surveys were established in 1973, when sex and age composition surveys were flown over large portions of the Wrangell and Chugach mountains. These surveys continue in selected areas. The northern portion of the Wrangell Mountains is known for relatively high densities of sheep, while the southern portion of the range typically has lower densities. Dall sheep harvests were not monitored prior to 1962; however, since then, harvest reports have provided managers with harvest numbers and trends.

In December 1978, the boundaries for the new Wrangell-St. Elias National Monument were established and encompassed most of Unit 11. In 1980, the passage of ANILCA changed the area's monument status to park and preserve and established different hunting opportunities on park versus preserve lands.

[1] Additional information on Unit 11 can be found at https://www.adfg.alaska.gov/index.cfm?adfg=huntingmaps.gmuinfo&gmu=11.

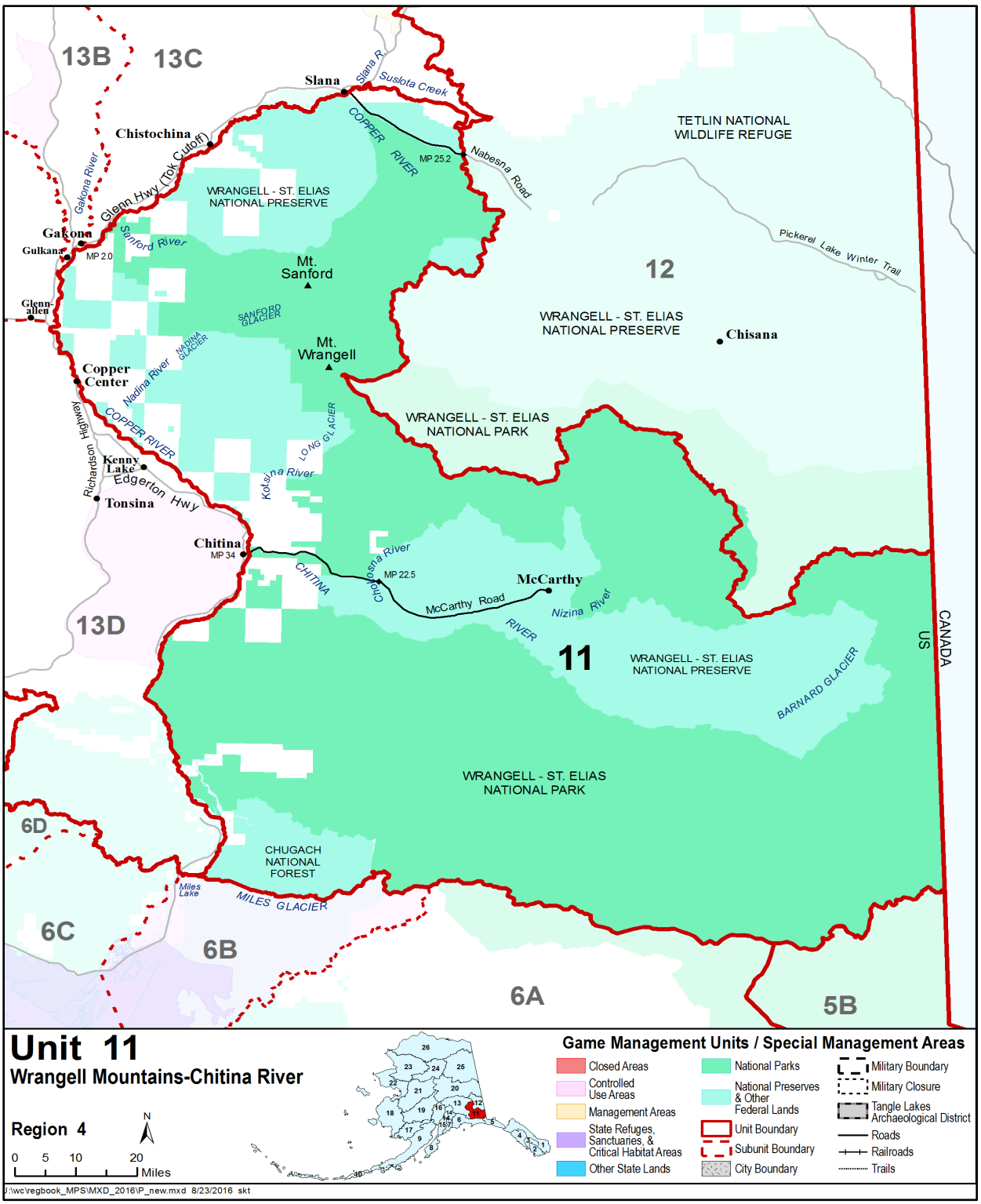

Figure 1. Unit 11 boundaries during regulatory years 2016–2020, Southcentral Alaska.

Under the current park and preserve scenario on National Park Service (NPS) lands in Unit 11, the harvest of Dall sheep on park lands is limited to federal subsistence hunting by rural residents of designated communities within Units 11, 13, and a portion of 12, though federal regulations

prohibit the use of aircraft for hunting on park lands. These federally qualified hunters may also hunt under federal subsistence regulations on preserve lands. State hunting regulations provide opportunity for residents and nonresidents to hunt sheep on preserve lands, as well as state and private lands in Unit 11.

In RY79, the Unit 11 bag limit changed from 1 ram with ¾-curl or larger horns to 1 ram with ⅞-curl or larger. In RY89 the bag limit was again changed to 1 sheep for state subsistence hunters (at that time defined as rural Alaska residents that have a customary and traditional use of a particular species of game in a particular area) and 1 ram with full curl or larger horns for other nonlocal resident and nonresident hunters. Later that year, rural subsistence priority for state hunters was struck down in a decision on the McDowell appeal, eliminating the previous definition for state subsistence hunters. Subsequently, the state bag limit for all resident hunters became 1 sheep from RY90 through RY00. Due to declining sheep numbers, the regulation was changed in RY01 to 1 ram, then in RY03 to 1 ram with ¾-curl or larger, and finally in RY11 to 1 full-curl ram. The nonresident bag limit has remained full-curl or larger since RY89, with guides required.

Beginning in RY90, the Federal Subsistence Board (FSB) implemented a federal subsistence sheep season with a bag limit of 1 sheep. In RY16, the bag limit for the federal subsistence hunt was changed to 1 ram. In RY98, the FSB implemented an additional federal elder hunt season for hunters over the age of 60 with a bag limit of 1 sheep (FS1104). With the exception of this elder hunt, state and federal sheep hunting in Unit 11 is reported under the state harvest ticket system. Sealing requirements were implemented for all sheep harvested under the state harvest ticket system starting in RY04.

Given the size of Unit 11, unitwide sheep population data are limited. In 1990, NPS estimated 26,286 sheep (95% CI = 21,813–30,759) within the entire Wrangell-St. Elias National Park and Preserve; in 1991 they estimated 27,796 sheep (95% CI = 21,348–34,244); and in 1993, 17,455 (95% CI = 13,572–21,338; McDonald et al. 1991, Strickland et al. 1993). In 2010 and 2011, the NPS Central Alaska Network used distance sampling techniques (Schmidt et al. 2012) to survey the entire Wrangell Mountain range, resulting in a population estimate of 12,428 sheep for Wrangell-St. Elias National Park and Preserve (NPS 2013).

Dall sheep are recognized as an integral part of the ecosystem throughout alpine and subalpine areas in Unit 11. They are managed to provide for a wide variety of human uses and values including hunting, photography, viewing, and scientific research (ADF&G 2002). Due to the extent of NPS land and the limited access available for resource users, the department has adopted a passive approach to sheep management in Unit 11. This approach is reflective of NPS policy, which largely strives to allow for natural ecosystem processes and thereby allows the sheep population to fluctuate as influenced by available habitat, weather, and predation rates.

Management Direction

Existing Wildlife Management Plans

Management direction was originally defined in *Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Southcentral Alaska* (ADF&G 1976). There are no other wildlife management plans for Unit 11 Dall sheep.

Goals

- Provide the greatest sustained yield opportunity to participate in hunting sheep.
- Protect and maintain the sheep population and its habitat in concert with other components of the ecosystem.
- Provide an opportunity for nonconsumptive uses such as viewing and photographing sheep.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game made a positive finding for customary and traditional uses for Dall sheep in Unit 11. The unitwide amounts reasonably necessary for subsistence uses is 60–75 sheep.

Intensive Management

Sheep are not designated as an intensive management species in the State of Alaska. The Alaska Board of Game has determined that the Mentasta caribou herd and the moose population for Unit 11 do not provide high levels of human consumptive use (negative finding), and therefore there is no intensive management program in Unit 11.

Management Objectives

The management objective for Unit 11 Dall sheep is to maintain a prehunt sheep population composition ratio of at least 40 rams per 100 ewe-likes in CAs surveyed.

Management Activities

1. Population Status and Trend

Activity 1.1. Monitor sheep abundance and population composition.

Data Needs

Sheep abundance and composition information is necessary to determine population status relative to management objectives. These data inform an index of annual productivity and sustainable harvest potential and provide insight into population trends which occur due to

factors such as predation, icing events, severe winters, or changes in habitat, including nutritional availability.

Methods

Aerial surveys using fixed-wing aircraft are conducted in established trend CAs to determine sheep population trends and sex and age composition (Fig. 2). Surveys are generally conducted in July or early August. An experienced pilot-observer team flies geographic contours systematically within a CA at 70–80 mph searching for sheep and recording data. Each sheep or group of sheep which is observed during the survey is circled to determine sex and age classification and number of animals present. Adult male sheep are recorded as rams, and young male sheep and ewes are recorded as ewe-like sheep. Lambs are differentiated from adults. A waypoint is recorded for each observation, and a digital photograph may be taken to confirm sheep numbers and classification for that waypoint upon return to the office. In some years, surveys are not possible due to poor survey conditions (e.g., high winds or low visibility) or limited resources. The intended survey schedule is listed in Table 1. Survey timing and CAs are coordinated with NPS to maximize resources.

Table 1. Intended survey schedule for Unit 11 count area (CA) sheep surveys, regulatory years 2016–2020, Southcentral Alaska.

Survey biennially	Survey every 3–5 years	Survey every 10 years
CA 3 or 3W	CA 21	CA 2
CA 11	CA 22	CA 10
CA 12	CA 23	CA 15
CA 14	CA 13	CA 16
–	–	CA 20

Note: En dashes indicate not applicable.

Results and Discussion

Northern Unit 11

Population information for the northern portion of the Wrangell Mountains in Unit 11 is collected from CAs 2, 3, 10, and 11; the entirety of CA 3 was surveyed in 2017 in collaboration with the Tok ADF&G office as this area includes a portion of Unit 12; and CA 11 was surveyed in 2017 and 2020.

Composition data showed that the ratio of rams to ewe-likes meets management objectives and the percentage of observed rams which were full-curl (14%) was similar to what has been observed in that area historically (12% in both 1981 and 2012). The total number of sheep observed in 2017 was the highest ever recorded for CA 3, and the lamb-to-ewe ratio was not concerning (Table 2).

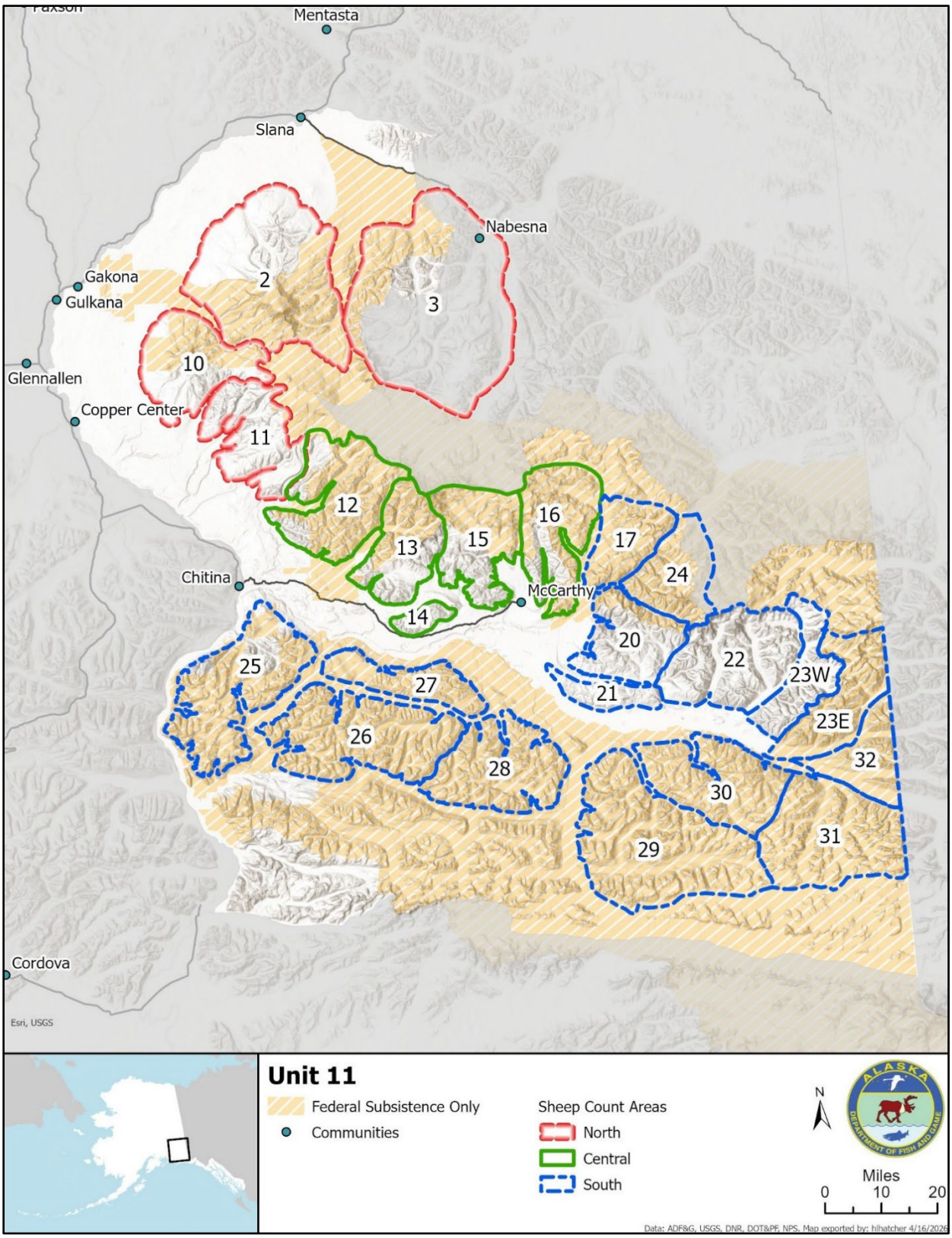

Figure 2. Unit 11 sheep trend count areas, regulatory years 2016–2020, Southcentral Alaska.

Table 2. Unit 11 Dall sheep composition counts, regulatory years 2016–2020, Southcentral Alaska.

Region	Count area	Regulatory year	Total rams	% Full-curl[a]	Ewes and ewe-like	Lambs-to-ewe-like[b]	Rams-to-ewe-like[b]	No. sheep observed
North	CA 3	2017	571	14%	1,386	35	41	2,457
	CA 11	2017	37	19%	140	53	26	251
	CA 11[c]	2020[d]	49	10%	214	18	23	302
Central	CA 12	2020[d]	162	22%	324	26	50	570
	CA 14	2019	26	15%	75	36	35	128
South	CA 20	2019	55	36%	80	36	69	164
	CA 22	2017	76	14%	191	48	40	359

[a] Percent full curl is calculated as a proportion of total rams.
[b] Ratios are 1:100.
[c] Count area 11 was surveyed in both 2017 and 2020.
[d] Surveys in 2020 were conducted by the National Park Service.

Composition data in CA 11 suggests that the ratio of rams to ewes is below objectives (Table 2). This area is open to full-curl harvest under state regulations, as well as any-ram harvest under subsistence regulations. The amount of protected area surrounding CA 11 and the high ram-to-ewe ratio in neighboring CA 12 suggest that there is not currently a conservation concern for CA 11, as rams do move between CAs. Additionally, historical ram-to-ewe ratios have been at or below the 2017 and 2020 levels without significant concern, as lamb-to-ewe ratios remained adequate and overall numbers of adults remained fairly stable throughout that time. The high lamb-to-ewe ratio observed in 2017 supports the assumption that the relatively lower ram-to-ewe ratio observed during the reporting period is not negatively affecting the reproductive potential of the overall population in the area, as ewes are being bred. The total number of sheep observed in CA 11 in 2020 was the highest recorded since 1995.

Central Unit 11

The central portion of the Wrangell Mountains in Unit 11 is represented in CAs 12, 13, 14, 15, and 16. During RY16–RY20, CA 12 was surveyed in 2020 by NPS and CA 14 was surveyed in 2019 by the department (Table 2). The number of sheep observed in CA 12 was the highest observed since 1996 and the number in CA 14 was the highest since 1993. The lamb-to-ewe ratio in CA 12 was lower than optimal, but not unusually low for this area compared to past survey data. During this reporting period, both the ram-to-ewe ratio and percentage of rams that were full-curl are higher in CA 12 than what was observed in CA 14, which is to be expected in an area with less hunting pressure.

Southern Unit 11

For the southeast portion of the Wrangell Mountains which adjoins the northwest portion of the St. Elias Mountains, population data is collected from CAs 21, 22, and 23 in the upper Chitina River drainage. Most recently, CA 20 was surveyed in 2019, and CA 22 was surveyed in 2017 (Table 2).

The total number of sheep in CA 20 was similar to that seen in historical surveys (1981 and 1984), although the number has declined from the 229 sheep observed in 1994, which was the most recent time this area was surveyed. The lamb-to-ewe and ram-to-ewe-like ratios were similar between the 1994 and 2019 surveys, suggesting that there may indeed be a decline in population numbers between these years. The percentage of rams which were full-curl, however, grew from 15% in 1994 to 36% in 2019.

The total number of sheep observed in CA 22 during 2017 was the highest ever recorded for this CA, although the percentage of rams which were full-curl was roughly half of what has typically been seen in that area. The ram-to-ewe ratio observed during RY16–RY20 meets the management objective, and the lamb-to-ewe ratio observed in 2017 was high, indicating that there are no conservation concerns at this time.

Recommendations for Activity 1.1

Continue.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor and evaluate sheep harvest through hunter harvest reports.

Data Needs

Monitoring and analyzing harvest data annually is important to understand hunter effort and success in Unit 11, which is critical for sustained yield management.

Methods

Individuals who obtain a sheep harvest ticket from the department are required to report on their ticket after successful harvest, or after the end of the season. Successful hunters must bring horns into a department office to be sealed, at which point detailed horn measurements are collected. Sheep horns are sealed with the placement of a metal stud with an individual identification number in one of the horns. Unit 11 hunters participating in the federal elder hunt or the joint minor-elder hunt (FS1103 or FS1104) are required to report to NPS but are not required to have their horns sealed.

Season and Bag Limit

Unit 11 state season and bag limits are as follows:

State hunts	Bag limit[a]	Resident open seasons	Nonresident open seasons
Harvest ticket: Youth hunt only	1 ram with full-curl horn or larger	1–5 Aug	1–5 Aug
Harvest ticket	1 ram with full-curl horn or larger	20 Aug–20 Sep	20 Aug–20 Sep

[a] As of RY16, nonresidents are allowed only 1 sheep harvest every 4 years.

Unit 11 federal season and bag limits are as follows:

Area	Federal hunts	Qualifying hunters	Bag limit	Open seasons
North of Stanford River	Harvest ticket	Residents of Unit 12, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Glennallen, Gulkana, Healy Lake, Kenny Lake, Mentasta Lake, Slana, McCarthy/South, Wrangell/South Park, Tazlina, Tonsina, McCarthy Road (MP 0–62), Nabesna Road (MP 0–46).	1 ram	10 Aug–20 Sep
	FS1103 (minor-elder joint permit) or FS1104 (60 years or older)		1 sheep	1 Aug–20 Oct
Remainder	Harvest ticket	Residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Slana, McCarthy/South, Wrangell/South Park, Tazlina, Tonsina, McCarthy Road (MP 0-62), Nabesna Road (MP 0–46), Tok Cutoff Road (MP 79–110).	1 ram	10 Aug–20 Sep
	FS1103 (minor-elder joint permit) or FS1104 (60 years or older)		1 sheep	1 Aug–20 Oct

Results and Discussion

Harvest by Hunters

Dall sheep harvest in Unit 11 during the report period (RY16–RY20) ranged from 53 to 74 sheep with an average of 62 sheep harvested annually (Table 3). The harvest during this period was higher than that reported during RY11–RY15 (which averaged 46 sheep annually), but it is more similar to the 5 years prior to that (RY06–RY10), which averaged 58 sheep annually.

On average, 67% of rams harvested during RY16–RY20 were full-curl or larger, compared to only 56% of harvested rams being full-curl or larger during RY11–RY15. Ewe harvest was not reported, except for 1 ewe which was mistaken for a young ram in 2019. The average age of rams harvested during this reporting period was 7.7 years old.

Table 3. Unit 11 Dall sheep harvest, regulatory years 2016–2020, Southcentral Alaska.

Regulatory year	Rams	% Rams ≥ full-curl	Average horn length of ≥ full-curl rams[a]	% Rams ≥ 40 inches[b]	Ewes	Total harvest
2016	55	69%	37.6	20%	0	55
2017	53	62%	37.6	11%	0	53
2018	69	75%	37.0	10%	0	69
2019	73	63%	38.4	18%	1	74
2020	61	64%	38.1	21%	0	61

[a] Rams with both horns broken are not included.
[b] Percent of total number of rams harvested.

Permit Hunts

There are 2 federal permit hunts in Unit 11, both issued by NPS. Both hunts also have the same bag limit and season dates of 1 sheep from 1 August to 20 October. FS1103 is a joint permit which may be issued to a minor-elder pair; FS1104 may be issued to an elder 60 years of age or older. Only federally qualified subsistence hunters are eligible, and sealing is not required for sheep harvested under these permits.

On average, 2 rams and no ewes are harvested on these permits (range: 1–4 rams and 0 ewes) and 15 permits are hunted. While harvest from these federal permits is included in the total harvest reported above, hunt data are excluded from the reports for chronology and transport methods listed below.

Hunter Residency and Success

Sheep hunter residency and success in Unit 11 is presented in Table 4. The number of sheep hunters in Unit 11 peaked at nearly 400 annually in the early 1990s and steadily declined to a low of 125 hunters in RY13. Since then, the number of hunters has increased to 194 as reported in RY20.

Nonresidents remain the most successful and least numerous group of hunters in the unit, both of which are likely attributable to the requirement for nonresidents to hunt Dall sheep with a registered guide.

Table 4. Unit 11 Dall sheep hunter residency and success, regulatory years 2016–2020, Southcentral Alaska.

	Local[a] residents		Nonlocal[b] residents		Nonresidents		Total hunters	
RY[c]	Hunted	Successful (%)	Hunted	Successful (%)	Hunted	Successful (%)	Hunted	Successful (%)
2016	48	21 (44)	75	23 (31)	12	10 (83)	137	55 (40)
2017	51	13 (25)	83	22 (27)	21	17 (81)	156	53 (34)
2018	66	22 (33)	73	29 (40)	20	18 (90)	159	69 (43)
2019	55	23 (42)	90	34 (38)	19	16 (82)	166	74 (45)
2020	65	23 (35)	110	26 (24)	18	11 (61)	194	61 (31)

[a] Local resident refers to residents of Units 11 or 13.
[b] Nonlocal resident refers to residents of Alaska who do not live in Units 11 or 13.
[c] RY refers to regulatory year.

Hunter effort is summarized in Table 5. During RY16–RY20, unsuccessful hunters averaged between 5 and 6 days of hunting, slightly more hunt days reported than successful hunters, which averaged between 4 and 5 days of hunting.

Harvest Chronology

Harvest chronology data for sheep taken in Unit 11 are presented in Table 6. Most of the harvest (43%) occurs during the first week of the season, with the remainder of harvest varying throughout the remaining weeks from year to year. During RY16–RY20, only 2 rams were harvested during the youth season (1 in 2016 and 1 in 2020).

Table 5. Unit 11 reported Dall sheep hunting effort, regulatory years 2016–2020, Southcentral Alaska.

	Successful hunters			Unsuccessful hunters			Total		
Regulatory year	Hunters	Total days	Average days	Hunters	Total days	Average days	Hunters	Days	Average days
2016	51	250	4.9	72	422	5.9	123	672	5.5
2017	48	174	3.6	92	500	5.4	140	674	4.8
2018	67	339	5.1	72	338	4.7	139	677	4.9
2019	73	289	4.0	80	500	6.3	153	789	5.2
2020	60	296	4.9	120	770	6.4	180	1,066	5.9

Note: Represents only reports which include hunter effort data.

Table 6. Unit 11 reported Dall sheep harvest chronology percent by harvest period, regulatory years 2016–2020, Southcentral Alaska.

	Percent of reported annual harvest by period						
Regulatory year	10 Aug–16 Aug[a]	17 Aug–23 Aug	24 Aug–Aug 30	31 Aug–6 Sep	7 Sep–13 Sep	14 Sep–20 Sep	Total harvest
2016	37	12	8	14	16	14	51
2017	54	8	13	6	8	10	48
2018	34	13	12	7	25	7	67
2019	45	12	21	8	7	7	73
2020	48	12	12	3	15	10	60

Note: Represents only reports which include date of kill.
[a] Includes harvest during youth hunt dates of 1–5 August.

Transport Methods

During RY16–RY20, aircraft was the primary mode of transportation for successful hunters in Unit 11, with all-terrain vehicles, highway vehicles, and boats being the next most popular (Table 7).

Table 7. Unit 11 Dall sheep reported harvest by transport method, regulatory years 2016–2020, Southcentral Alaska.

	Harvest by transport method (%)						
Regulatory year	Airplane	Horse	Boat	ATV[a]	ORV[b]	Highway vehicle	Total harvest
2016	20 (38)	2 (4)	7 (13)	19 (37)	0 (0)	4 (8)	52
2017	29 (59)	3 (6)	6 (12)	6 (12)	2 (4)	3 (6)	49
2018	25 (37)	1 (1)	11 (16)	11 (16)	3 (4)	17 (25)	68
2019	24 (33)	5 (7)	6 (8)	16 (22)	3 (4)	19 (26)	73
2020	25 (42)	0 (0)	7 (12)	14 (23)	1 (2)	13 (22)	60

Note: Represents only reports with transportation data.
[a] ATV refers to all-terrain vehicles or 3- or 4-wheelers.
[b] ORV refers to off-road vehicles.

Other Mortality

Predation by wolves (*Canis lupus*), wolverines (*Gulo gulo*), grizzly bears (*Ursus arctos*), coyotes (*Canis latrans*), and golden eagles (*Aquila chrysaetos*) on Dall sheep has been documented in the Alaska Range (Scotton 1997, Arthur 2003) and has been observed in the Wrangell Mountains as well. Species-specific predation rates have not been estimated in Unit 11.

Other sources of natural mortality common to sheep populations include accidents (e.g., falls), avalanches, and starvation due to deep snow, icing events, poor habitat, or density-dependent factors.

The department and NPS contribute information to the ongoing dataset of monthly snow survey data compiled by the Natural Resources Conservation Service each winter. Prior to 1993, snow depths were available only from 2 sites: Sanford River and Dadina Lake in the western Wrangell Mountains. In 1993, 3 other locations in the southern Wrangell Mountains were added: Lost Creek, Chokosna snow course, and May Creek. All snow survey sites are located in low-lying areas, which may not accurately represent snow depths in sheep habitat.

A winter snow depth index is considered severe when the average reading for a site is at or above 30.0″. During the winter of 2017–2018, the snow depth index was 31.7″ at the Sanford site and 34.7″ at the Dadina site, but it was below 30″ in Chokosna, Lost Creek, and May Creek. During the winter of 2020–2021, the snow depth index for May creek was 31.7″, but remained below 30.0″ for Sanford, Dadina, Chokosna, and Lost Creek.

Alaska Board of Game Actions and Emergency Orders

Effective beginning in RY16, the Board of Game changed the nonresident bag limit from 1 full-curl ram every year to 1 every 4 years. Also effective in RY16, the Board of Game added the youth sheep hunt with season dates of 1–5 August.

The FSB changed the bag limit for federally qualified subsistence users from 1 sheep to 1 ram beginning in RY16, excluding the federally permitted elder hunt. The joint minor-elder permit option was also made available by FSB during this period.

Recommendations for Activity 2.1

Continue.

3. Habitat Assessment-Enhancement

No activities for Dall sheep habitat assessment or enhancement occurred in Unit 11 during RY16–RY20.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

No nonregulatory issues have been identified for Dall sheep in Unit 11 during RY16–RY20.

Data Recording and Archiving

Data are entered and stored electronically with survey waypoints, survey tracks, and PDF files on the Glennallen shared drive. State sheep harvest data are stored on WinfoNet (ADF&G's Wildlife Information Network). Federal elder hunt sheep harvest data must be obtained from NPS and are stored electronically on the Glennallen office shared drive. Sheep survey data forms (Appendix A) are stored in the assistant area biologist office.

Agreements

A data sharing agreement is in place to provide sheep (and other species) harvest data to Wrangell-St. Elias National Park and Preserve personnel during RY15–RY20 (Appendix B). Sheep surveys are coordinated with NPS; as a result, total counts for individual CAs are received from or shared with NPS as needed.

Permitting

Not applicable.

Conclusions and Management Recommendations

Surveys were conducted in 6 CAs during RY16–RY20 and the management objective of maintaining a minimum of 40 rams per 100 ewe-likes was achieved in 4 out of those 6 CAs. CA 11 was below objective but is adjacent to CA 12, which was above objective, and no biological concern is indicated at this time given the continuity of sheep habitat across those areas. CA 14 was below objective with 36 rams per 100 ewe-likes, but this is a small CA where family groups are typically seen more than ram groups, and movement to adjacent CAs is common. Department staff again determined that this posed no biological concern.

Sheep surveys and harvest data in Unit 11 suggest that populations during RY16–RY20 may be at or near the highest levels observed in recent history. The department recommends research efforts to better understand the impacts of available habitat and nutrition on Dall sheep population dynamics in Unit 11 to determine if density dependent factors may become a concern as sheep numbers increase.

II. Project Review and RY21–RY25 Plan

Review of Management Direction

No necessary changes from statewide goals (ADF&G 2002) have been identified for RY21–RY25.

MANAGEMENT DIRECTION

No change from RY16–RY20.

GOALS

No change from RY16–RY20.

CODIFIED OBJECTIVES

No changes are expected from RY16–RY20.

Amounts Reasonably Necessary for Subsistence Uses

No changes are expected from RY16–RY20.

Intensive Management

No changes are expected from RY16–RY20.

MANAGEMENT OBJECTIVES

No change from RY16–RY20.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitor sheep abundance and population composition.

Data Needs

No change from RY16–RY20.

Methods

No change from RY16–RY20.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor and evaluate sheep harvest through hunter harvest reports.

Data Needs

No change from RY16–RY20.

Methods

No change from RY16–RY20.

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Coordinate with research staff on habitat assessment.

Data Needs

Unit 11 encompasses a large area in which there appear to be subpopulations of Dall sheep which exhibit differences in population density, population trajectories, and even phenotypic traits. As sheep numbers appear to be increasing in some areas, it will be necessary to better understand population drivers across the landscape in order to manage public expectations for harvest opportunity, as well as to avoid potential density-dependent limiting factors, should those be identified.

Methods

A large-scale research project to investigate sheep population dynamics as well as habitat quality and quantity across the landscape in Unit 11 will be discussed and weighed as a regional research priority.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

No nonregulatory management issues have been identified for RY21–RY25.

Data Recording and Archiving

No change from RY16–RY20.

Agreements

No change from RY16–RY20. No new data sharing agreements have been established with NPS for Dall sheep.

Permitting

No change from RY16–RY20.

Acknowledgments

Special thanks to Judy Putera with Wrangell-St. Elias National Park and Preserve for collaborating on sheep surveys in Unit 11.

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Appendix A. Unit 11 sheep and goat survey data form, regulatory years 2016–2020, Southcentral Alaska.

MOUNTAIN GOAT AND SHEEP SURVEY FORM

Area: Chugach / Talkeetna / Alaska Range / Other: _____ (circle one) Page_____ of _____

Date:_____ Count Area: _____

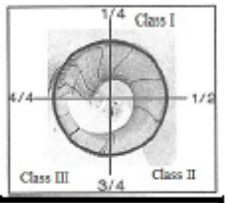
Pilot_____ Observer _____

Time Off:_____ Time Landing: _____ Total Flight Time: _____

Light: low / med / bright Cloud cover: clear / scat / broken / overcast

Snow cover (%) _____

Start Count Time:_____ End Count Time:_____ Total Count Time:_____



	Goats			Sheep							
					< Full Curl Rams						
Waypoint	Adults	Kids	Unid	Full Curl Rams	I	II	III	Unid Rams	Ewes	Lambs	Unid.
This page tot.											
Other pages											
Total											

Appendix B. Units 11 and 12 data sharing agreement for wildlife data (including bison, black bear, brown bear, caribou, moose, mountain goat, sheep, and wolf) with the National Park Service, regulatory years 2016–2020, Southcentral Alaska.

AGREEMENT FOR USE OF WILDLIFE DATA
BETWEEN
ALASKA DEPARTMENT OF FISH & GAME (ADF&G)
AND
WRANGELL-ST. ELIAS NATIONAL PARK AND PRESERVE

This agreement covers the following two files to be transferred to Wrangell-St. Elias National Park and Preserve: 1) harvest data files for bison, black bear, brown bear, caribou, moose, mountain goat, sheep, and wolves in Game Management Units 11 and 12 by UCU, including location of kill by major and minor subdivisions, method of take, date of kill, horn, skull, or antler morphometric data, and sex for the regulatory years 1990–1991 through 2014–2015; and 2) a .shp file delineating UCU boundaries. ADF&G will provide harvest data for species listed for regulatory years 2015–2016 through 2020–2021 upon request by Wrangell St Elias National Park.

This information is released to, and may be used by, Wrangell-St. Elias National Park and Preserve under the following conditions:

1. The information will be used to monitor harvest of bison, black bear, brown bear, caribou, moose, mountain goat, sheep, and wolf populations within the Park boundaries.
2. Harvest information will not be published, publically disseminated, or presented by the NPS or its contractors at the spatial resolution of latitude and longitude of a kill site or by watershed defined as a Uniform Coding Unit (UCU) in ADF&G data.
3. The information will not be released to others except to persons in a contractual relationship with Wrangell-St. Elias National Park and Preserve who will be performing work for or on behalf of Wrangell-St. Elias National Park and Preserve, on a need-to-know basis, in which case Wrangell-St. Elias National Park and Preserve will require the contractors to agree to and abide by the conditions in this document.
4. The NPS agrees that the harvest location data is protected from disclosure under state law and will make every effort to keep it confidential under federal law, and will notify ADF&G if there is a Freedom of Information Act request for the data.

Under the above conditions, ADF&G agrees to release the attached information, and Wrangell-St. Elias National Park and Preserve agrees to receive and use it.

SOF _____ Date _____April 4, 2016_____
Maria Gladziszewski, Deputy Director, Division of Wildlife Conservation, ADF&G

SOF _____ Date 4/7/2016
Eric Veach, Acting Superintendent, Wrangell-St. Elias National Park and Preserve


ALASKA
DEPARTMENT OF FISH AND GAME