

# **Wolf Management Report and Plan, Game Management Unit 19:**

Report Period 1 July 2010–30 June 2015, and

Plan Period 1 July 2015–30 June 2020

**Jonathan S. Barton**





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Funding for survey and inventory project 14.0 was provided through the Federal Aid in Wildlife Restoration grant program.

Hunters are important founders of the modern wildlife conservation movement. They, along with trappers and sport shooters, provided funding for this publication through payment of federal taxes on firearms, ammunition, and archery equipment, and through state hunting license and tag fees.

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This species management report and plan was reviewed and approved for publication by Doreen Parker McNeill, Management Coordinator for the Division of Wildlife Conservation.

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This document, published in PDF format only, should be cited as:

Barton, J. S. 2020. Wolf management report and plan, Game Management Unit 19: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-10, Juneau.

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## **Purpose of this Report**

This report provides a record of survey and inventory management activities for wolf in Unit 19 for the 5 regulatory years 2010–2014 and plans for survey and inventory management activities in the following 5 regulatory years 2015–2019. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY10 = 1 July 2010–30 June 2011). This report is produced primarily to provide agency staff with data and analysis to help guide and record its own efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game’s Division of Wildlife Conservation launched this 5-year report to more efficiently report on trends and describe potential changes in data collection activities over the next 5 years. It replaces the wolf management report of survey and inventory activities that was previously produced every 3 years.

## **I. RY10–RY14 Management Report**

### **Management Area**

Unit 19 includes the portion of the Kuskokwim River drainage above Lower Kalskag, and is further divided into 4 Units (19A, 19B, 19C, and 19D) totaling approximately 36,486 mi<sup>2</sup>.

### **Summary of Status, Trend, Management Activities, and History of Wolf in Unit 19**

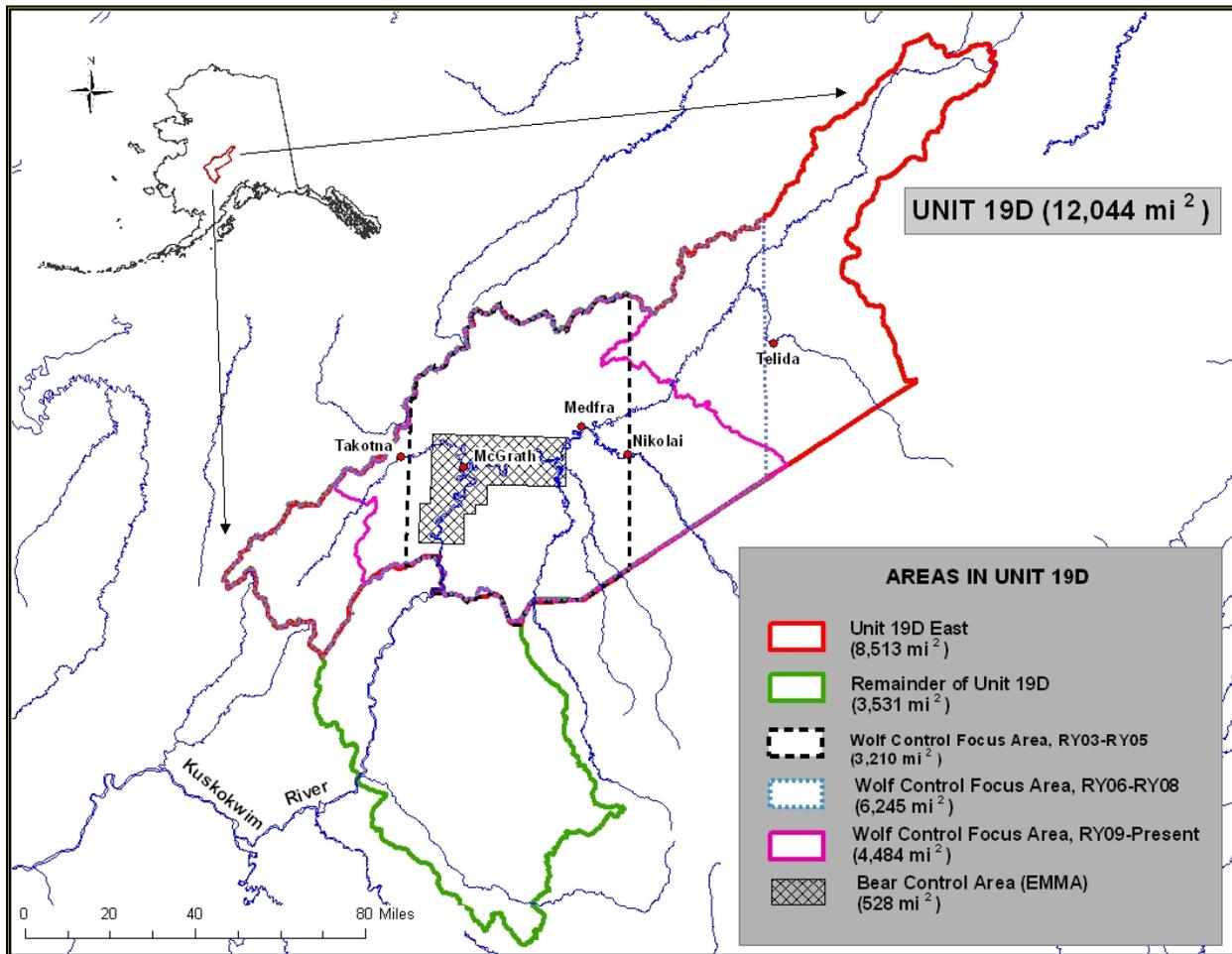
Wolves play multiple roles in the economy and ecology of the upper Kuskokwim River drainage. Trappers seek wolf pelts for both personal use and commercial sale. Hunters consider wolves both trophy big game animals and competitors for moose. Wolves are an important predator of moose and caribou and can regulate populations to a low-density dynamic equilibrium (Gasaway et al. 1992; Boertje et al. 1996; Hayes et al. 2003).

Wolf harvest regulations in Unit 19 have changed frequently in response to public controversies. Wolf harvest declined after cessation of bounties in 1967 and after the Federal Airborne Hunting Act of 1972 eliminated the common practice of shooting wolves from airplanes. However, the Alaska Department of Fish and Game (ADF&G) issued aerial shooting permits to members of the public until 1983 as part of specific management programs. Hunting of wolves using land-and-shoot methods continued as a legal means of hunting until regulatory year 1992 when all same-day-airborne hunting was prohibited. Beginning in RY94, same-day-airborne taking of wolves was permitted for holders of a trapping license if trappers landed and moved more than 300 ft. from the aircraft before shooting a wolf. A public ballot initiative in November 1996 repealed that regulation beginning in late February 1997, again prohibiting all same-day-airborne shooting of wolves.

During 1980–1995, area biologists and residents recognized that moose densities were low in the upper Kuskokwim drainage. The primary limiting factor was believed to be predation aggravated during 1989–1995 by 4 severe winters with deep, persistent snow. In Unit 19D, an intensive research project (2003–2010) identified that wolves, black bears, and grizzly bears were

significant predators of moose (Keech et al. 2011). This understanding has focused management on efforts to reduce predation in Unit 19.

In the early 1990s, local residents requested that the state initiate a management program to aid the moose population. In 1994, with the aid of the Tanana Chiefs Conference, these residents met with officials from ADF&G to discuss predation control options. In 1995 the Alaska Board of Game adopted a Wolf Control Implementation Plan for eastern Unit 19D (known as Unit 19D East), which encompasses 8,513 mi<sup>2</sup> of Unit 19D upriver of, but not including, the Black and Selatna River drainages (Fig. 1). The board reauthorized and updated this plan in January 2000, March 2001, March 2003, January and May 2006, March 2009 and March 2014. The March 2014 update continues this plan through June 30, 2020.



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**Figure 1. Map showing management activity areas in Unit 19D, McGrath area, Alaska.**

In 2001 the Experimental Micro Management Area (EMMA), was established. This 528 mi<sup>2</sup> area, renamed the Bear Control Focus Area (BCFA) in 2009, encompasses the highest density of moose in Unit 19D East and was established as a treatment area to test and implement predator population manipulations and other management actions (Fig. 1).

ADF&G established aerial Wolf Control Focus Areas (WCFAs) surrounding McGrath of 1,728 mi<sup>2</sup> (RY03, 2 weeks only), 3,210 mi<sup>2</sup> (remainder of RY03–RY05), 6,245 mi<sup>2</sup> (RY06–RY08), and 4,484 mi<sup>2</sup> (RY09–RY19) and allowed permitted pilots to conduct aerial wolf control to reduce wolf predation only within this portion of Unit 19D East (Fig. 1). None of the WCFAs included all of Unit 19D East.

In Units 19A and 19B moose numbers had declined by the late 1990s and a working group was established to consider moose management there. The Central Kuskokwim Moose Management Working Group developed the Central Kuskokwim Moose Management Plan (Central Kuskokwim Moose Management Planning Committee 2004). The plan was endorsed by the board in June 2004, and includes a wolf control implementation plan (5 AAC 92.123, subsequently moved to 5 AAC 92.123), which authorized wolf control in Unit 19A during RY04–RY09 and then from RY09–RY14 only in Stony and Holitna portions of Unit 19A. Wolf control in Unit 19B was originally authorized by the Board of Game from RY04–RY09, however in January 2006 the board adopted a revised implementation plan that limited wolf control to 19A.

Predation control programs in Unit 19 are instrumental in moose management and are critical if ADF&G is to comply with intensive management statutes and regulations. Local support for these programs remains high, particularly in Units 19A and 19D. Statewide, however, wolf control programs remain controversial.

## **Management Direction**

Wolf populations are managed to provide for human uses and to ensure that wolves remain an integral part of Interior Alaska's ecosystems. Compatible human uses include hunting and trapping, photography, viewing, listening, and scientific and educational purposes. Other aesthetic values of wolves are also recognized.

## **EXISTING WILDLIFE MANAGEMENT PLANS**

Operational plans for intensive management (IM) of moose in Units 19A and 19D during RY14–RY20. These intensive management plans include wolf control and are designed to increase moose numbers for human harvest (5 AAC 92.123).

## **GOALS**

- G1. Ensure the long-term conservation of wolves throughout their historic range in Alaska in relation to their prey and habitat.
- G2. Provide for the broadest possible range of human uses and values of wolves and their prey populations that meet wildlife conservation principles and which reflect the public's interest.
- G3. Increase public awareness and understanding of the uses, conservation, and management of wolves, their prey, and habitat in Alaska.

## **CODIFIED OBJECTIVES**

### Amounts Reasonably Necessary for Subsistence Uses

- C1. Unit 19 has a positive customary and traditional use finding for wolves, as determined the Board of Game, with an amount necessary for subsistence uses of 90% of the harvestable portion.

### Intensive Management

- C2. Unit 19A, maintain a population of at least 25–30 wolves annually after wolf control.  
C3. Unit 19D East, maintain a population of at least 40 wolves annually after wolf control.

## **MANAGEMENT OBJECTIVES**

### Unit 19A

- M1. Reduce the number of wolves to the lowest level possible within the WCFA while achieving at least a 60% reduction of the precontrol wolf population and ensuring that no fewer than 25–30 wolves remain in all of Unit 19A (Fig. 2).

### Unit 19D East

- M2. Reduce the number of wolves to the lowest level possible within the WCFA while achieving at least a 60% reduction of the precontrol wolf population and ensuring that no fewer than 40 wolves remain in all of Unit 19D East (Fig. 1).

### Units 19B, 19C, and the remainder of Unit 19D

- M3. Provide for a sustained annual harvest of up to 150 wolves.

### Unit 19

- M4. Provide information and educational clinics to increase wolf trapping participation and proficiency among public users.

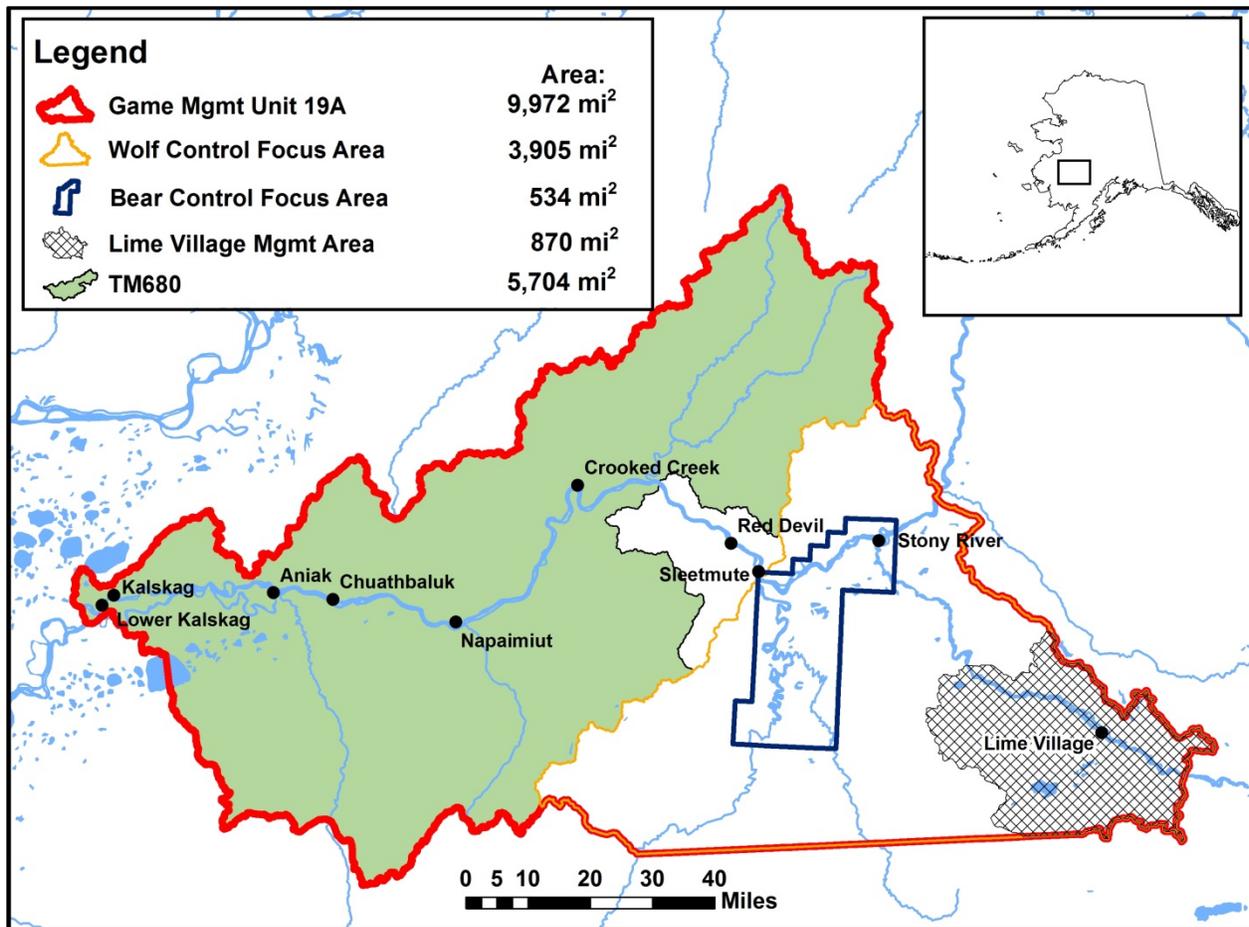
## **MANAGEMENT ACTIVITIES**

### 1. Population Status and Trend

ACTIVITY 1.1. Conduct aerial wolf population surveys within the WCFAs in Units 19A and 19D East every 3 years (objectives C2, C3, M1, M2).

#### *Data Needs*

Population estimates ensure the minimum number of wolves remain each year after wolf control is conducted.



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**Figure 2. Map showing Unit 19A Alaska aerial wolf control areas permitted throughout Unit 19A during regulatory years 2004–2008. Beginning in regulatory year 2009, aerial wolf control was limited to the Wolf Control Focus Area (WCFA).**

### *Methods*

#### Unit 19A

We conducted minimum count wolf surveys in Unit 19A during 12–13 February 2011 within the Unit 19A WCFA. Survey conditions were not adequate during the 2011 survey, so we interviewed active wolf control permittees and combined our findings with theirs. We used these surveys to generate estimates of the Unit 19A wolf population, taking into account hunter-trapper harvest and wolves killed by wolf control permittees.

#### Unit 19D

We conducted Intensive Aerial Wolf Surveys (IAWS) to estimate wolf density (Stephenson 1978; Gasaway et al. 1983; Hayes and Harestad 2000; Gardner and Pamperin 2014; Keech et al. 2011) during 21–24 February 2001, 17–19 March 2005, 14–17 March 2006, 19–20 March 2009, and 1–3 March 2017 within the 3,210 mi<sup>2</sup> wolf survey area (Table 1). This area is the same area as which wolf control was conducted in regulatory years 2003–2005.

**Table 1. Unit 19 Alaska reported wolf harvest and aerial wolf control take success by residency and sex, regulatory years 2010–2014.**

Regulatory Year	Reported harvest					Residency			Number of Trappers/ Hunters	$\bar{x}$ Wolves/Trapper
	Male	Female	Unknown	% Male	Total	Nonresident	Resident	Unknown		
2010	23	24	4	45	51	5	46	0	24	2.1
2011	23	28	0	45	51	2	49	0	15	3.4
2012	16	23	1	40	40	3	37	0	17	2.4
2013	32	20	1	60	53	12	41	0	25	2.1
2014	15	24	1	38	40	6	34	0	17	2.4
Total	109	119	7	46	235	28	207	0	98	$\bar{x} = 2.5$
% of Total	46	51	3		100	12	88			

## *Results and Discussion*

### Unit 19A

Based on our February 2011 minimum wolf count survey and wolf control permittee interviews, we estimated at least 23 wolves in 6 packs of  $\geq 2$  wolves in the WCFA portion of Unit 19A.

### Unit 19D

In February 2001 we counted 42 individual wolves, for a wolf density of 1.5 wolves/100 mi<sup>2</sup>. In March 2005 and March 2006, we counted 11 individuals for a density estimate of 0.3 wolves/100 mi<sup>2</sup>. In March 2009 and March 2017, we counted 16 and 63 individual wolves, for density estimates of 0.5 and 2.0 wolves/100 mi<sup>2</sup> respectively (Table 2). These surveys were all completed in the RY03–05 Wolf Control Focus Area (Fig. 1).

**Table 2. Wolf survey results for surveys completed during regulatory years 2001–2017, Wolf Survey Area (3,210 mi<sup>2</sup>), Unit 19D Alaska.**

Regulatory Year	Individual Count	Density of Wolves/ 100 mi <sup>2</sup>
2001	42	1.5
2005	11	0.3
2006	11	0.3
2009	16	0.5
2017	63	2.0
Total	143	

*NOTE:* These surveys are ideally conducted every 3 years, but lack of adequate funding, poor weather, and research priorities precluded completion of the surveys during 2001–2016.

### *Recommendations for Activity 1.1*

The WCFAs in Unit 19A and 19D are designed to ensure that even if every wolf from within the focus areas were removed there would still be enough wolves in the remainder of the unit to meet minimum population objectives.

ACTIVITY 1.2 Continue to refine annual wolf population estimates, based on wolf survey results, incidental sightings, hunter interviews, trapper questionnaires, and evaluation of sealing documents (objectives C2, C3, M1, M2).

### *Data Needs*

Post-control estimates help to evaluate the success of the control programs which have objectives to reduce wolf numbers by at least 60–80% of pre-control numbers.

### *Methods*

Conduct interviews with wolf control pilots to gain detailed information on spring pack sizes and locations within the WCFAs.

### *Results and Discussion*

Post-control spring estimates for Unit 19A in RY10–RY14 were 23, 14, 22, 24, and 20 wolves, respectively. Post control estimates in Unit 19D RY10–RY14 were 12, 24, 20, 9, and 19 wolves, respectively. These estimates were the result of direct surveys conducted by ADF&G and interviews with pilots participating in predator control efforts in these units.

### *Recommendations for Activity 1.2*

Continue.

## 2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor harvests and trapper effort through sealing records, trapper interviews, and trapper questionnaires. (Objectives C2, C3, M3).

### *Data Needs*

Fur sealing data from WinfoNet is reviewed annually to assess harvest. This information is used for intensive management and annual reports to the Board of Game.

### *Methods*

Wolves harvested by trappers, hunters, and control permittees were sealed to monitor harvest. Harvest data were archived in WinfoNet and are reported by regulatory year. Information recorded for each wolf included date of kill, name of person harvesting wolf, location, method of take, transportation, sex of the wolf, color of the pelt, and number of wolves thought to be in the pack.

### *Season and Bag Limit*

Current wolf hunting regulations for Unit 19 can be found on the ADF&G website at:

<http://www.adfg.alaska.gov/index.cfm?adfg=wildliferegulations.hunting>

Hunting regulation book numbers 51, 52, 53, 54 and 55 list wolf hunting regulations during RY10–RY14. Alaska Trapping Regulation book numbers 51, 52, 53, 54 and 55 list wolf trapping regulations during RY10–RY14.

### *Results and Discussion*

#### Harvest by Hunters-Trappers and Wolf Control Permittee Take

During RY10–RY14, 233 wolves ( $\bar{x} = 47$ ) were reported harvested by hunters, trappers, and wolf control permittees in Unit 19 (Tables 3–4). Of these, control permittees took 97 wolves; 26 in Unit 19A and 71 in Unit 19D East (Table 3–4). Annual wolf harvests varied among years. These oscillations were not likely related as much to fluctuations in wolf numbers, but rather to other factors that affected trappers (e.g., weather, snow conditions, trapping pressure, and Intensive Management participation).

**Table 3. Wolf harvest and take method, regulatory years 2010–2014, Units 19A and 19D, Alaska.**

Regulatory Year	Unit 19A						Unit 19D					
	Shot	Trapped	Snared	SDA <sup>a</sup>	Unknown	Total	Shot	Trapped	Snared	SDA <sup>a</sup>	Other	Total
2010	2	1	1	10	0	14	3	4	3	13	0	23
2011	4	0	0	8	0	12	0	0	12	22	0	34
2012	1	2	4	0	1	8	4	0	4	17	1	26
2013	3	1	7	6	0	17	1	5	4	9	0	19
2014	5	1	4	2	0	12	0	1	12	10	0	23
Total	15	5	16	26	1	63	8	10	35	71	1	125

<sup>a</sup> Same-day airborne (SDA) aerial wolf control method associated with predation control programs in Units 19A and 19D East.

**Table 4. Wolf harvest method, regulatory years 2010–2014, Units 19B and 19C, Alaska.**

Regulatory Year	Unit 19B				Unit 19C				
	Shot	Trapped	Snared	Total	Shot	Trapped	Snared	Other/Unknown	Total
2010	4	4	0	8	6	0	0	0	6
2011	0	0	0	0	1	1	2	1	5
2012	0	0	0	0	2	4	0	0	6
2013	1	0	0	1	9	5	0	0	14
2014	0	0	0	0	4	1	0	0	5
Total	5	4	0	9	22	11	2	1	36

### Hunter Residency and Success

Areawide, the number of successful hunters and trappers ranged from 15 to 25 per year during RY10–RY14, (Table 1). The number of wolves taken per successful hunter-trapper averaged 2.5 wolves per hunter-trapper and varied little among years. Residents continued to harvest most of the wolves in Unit 19, about 88% (Table 1). There were 98 hunters and trappers that contributed to the total harvest of 235 wolves during the reporting period.

### Harvest Chronology

During RY10–RY14, 55% of the reported wolf harvest in Unit 19 and aerial wolf take occurred during February and March (Table 5). Winter wolf harvests and take by aerial control are dependent on adequate snow cover which typically improves by mid-December. Furthermore, adequate sunlight, which is best during late January through March, is necessary to efficiently track wolves. Even though wolf season and control activities can occur through April, few trappers and control permittees participate because of deteriorating snow conditions and wolf pelt quality. August and September wolf harvests are typically incidental to other big game hunts.

**Table 5. Unit 19 wolf hunting and trapping and aerial wolf control take percent harvest chronology by month, regulatory years 2010–2014.**

Regulatory Year	Percent harvest and aerial wolf control take chronology by month ( <i>n</i> )												Unknown/ Other	Total Harvest
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr					
2010	0 (0)	10 (5)	2 (1)	2 (1)	4 (2)	25 (13)	41 (21)	14 (7)	0 (0)	0 (0)			(51)	
2011	4 (2)	2 (1)	2 (1)	2 (1)	2 (1)	4 (2)	27 (14)	24 (12)	33 (17)	0 (0)			(51)	
2012	8 (3)	5 (2)	0 (0)	10 (4)	3 (1)	10 (4)	25 (10)	33 (13)	5 (2)	3 (1)			(40)	
2013	11 (6)	15 (8)	4 (2)	2 (1)	11 (6)	4 (2)	28 (15)	23 (12)	2 (1)	0 (0)			(53)	
2014	8 (3)	10 (4)	0 (0)	0 (0)	5 (2)	13 (5)	20 (8)	43 (17)	3 (1)	0 (0)			(40)	
Total <i>n</i>	(14)	(20)	(4)	(7)	(12)	(26)	(68)	(61)	(21)	(1)			(235)	
% of Total	6	8	2	3	5	11	29	26	9	0			100	

## Transport Methods

In Units 19A and 19D, outside of same day airborne harvest with predator control, snaring continued as the leading method of take (Table 3–4). Within Units 19B and 19C ground shooting was the most common method followed by trapping. This is most likely due to opportunistic harvest from guided and non-guided hunters (Table 4). Aircraft (61%) was the most common transportation used followed by snowmachine (21%) to take wolves in Unit 19 by hunters and trappers (Table 6).

**Table 6. Unit 19 hunting and trapping harvest by transport method, regulatory years 2010–2014.**

Regulatory Year	Percent Harvest by Transport Method ( <i>n</i> )				Total
	Aircraft	Snowmobile	Ski–Snowshoe	Other <sup>a</sup>	
2010	57 (29)	24 (12)	14 (7)	6 (3)	51
2011	80 (41)	14 (7)	2 (1)	4 (2)	51
2012	45 (18)	28 (11)	5 (2)	23 (9)	40
2013	51 (27)	21 (11)	9 (5)	19 (10)	53
2014	73 (29)	23 (9)	0 -	5 (2)	40
Total <i>n</i>	(144)	(50)	(15)	(26)	235
% of Total	61	21	6	11	

<sup>a</sup> Includes boats, 3- and 4-wheelers, off-road vehicles, highway vehicles, and other unreported methods.

## *Other Mortality*

Portions of Units 19A and 19D were within WCFA. During RY10–RY14, 26 wolves in Unit 19A and 71 wolves in Unit 19D East, respectively, were reported taken by aerial wolf control (Table 3). Wolf harvest in 19A has decreased due to lack of participation, rising fuel costs, and poor snow conditions.

## *Alaska Board of Game Actions and Emergency Orders*

### Units 19A

In March 2014 the Board of Game modified and reauthorized the Unit 19A predation control implementation plan for 6 years beginning 1 July 2014. This plan applies aerial wolf control only within the 3,905 mi<sup>2</sup> WCFA defined as the drainages upriver of Sleetmute. Objectives of this plan are to reduce the precontrol wolf population by 60–80% in Unit 19A, reduce the number of wolves within the WCFA to the lowest level possible, and ensure that 25–30 wolves remain throughout Unit 19A. This plan also established a 534 mi<sup>2</sup> Bear Control Focus Area (BCFA) from which both black and brown bears will be reduced to the lowest level possible if certain thresholds in the moose population are met (Fig. 2). This plan ends 30 June 2020.

### Unit 19D

In March 2014 the Board of Game modified and reauthorized the Unit 19D predation control implementation plan for 6 years beginning 1 July 2014. This plan applies aerial wolf control only within the 4,484 mi<sup>2</sup> WCFA. Objectives of this plan are to reduce the precontrol wolf population by 60–80% in Unit 19D East, reduce the number of wolves within the WCFA to the lowest level possible, and ensure that 40 wolves remain throughout Unit 19D East. This plan also established

a 528 mi<sup>2</sup> Bear Control Focus Area (BCFA) from which both black and brown bears will be reduced to the lowest level possible if certain thresholds in the moose population are not met (Fig. 1). This plan ends 30 June 2020.

#### *Recommendations for Activity 2.1*

Continue.

### 3. Habitat Assessment-Enhancement

ACTIVITY 3.1. None.

### 4. Wolf Management with Public Participation and Outreach

ACTIVITY 4.1. Increase public proficiency in wolf trapping through trapper education clinics (Objective M4).

#### *Needs*

Engage the public in trapping wolves by recruiting new wolf trappers. Conducting trapper education clinics, which have been well received, are one way to do this. These clinics may also have other potential management benefits.

#### *Methods*

Organize trapper education clinics. Clinics provide information on building wolf snares, effective sets, snare locations that prevent incidental catch of moose, wolf and moose biology, and regulations.

#### *Results and Discussion*

No trapping clinics were conducted during the reporting period due to time constraints, resources, and other management priorities.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

Hair loss on wolves is a problem throughout Unit 19, with genetic follicular dysplasia and lice identified as causes. No cost-effective tools are known to treat these problems, so they are likely to persist. Wolf pelts with poor fur quality have little value, but during RY10–RY14 hunters and trappers were still inclined to take these wolves to remove lice-infested individuals from the population, to remove predators from the population in the belief that a public service is being rendered and to take advantage of whatever value such wolves might have. Depending on the degree of hair loss, some wolf hides may still have some fur value, and most wolf skulls also have some monetary value.

In Unit 19A it is difficult to attract wolf predation control pilots to the area. Fuel and lodging are expensive and there are long ferry times from population centers. Additionally, marginal snow conditions in some years make predation control efforts less successful.

## Data Recording and Archiving

- Wolf harvest (fur sealing) data are archived in ADF&G's Wildlife Information Network (WinfoNet) database.
- Electronic data and files such as survey memos and reports are stored in the WinfoNet Data Archive. Project Title: McGrath Area Office. Primary Region: Region III.
- Hard copies of data and files such as survey memos and reports are located in the McGrath ADF&G office.

## Agreements

None.

## Permitting

None.

## **Conclusions and Management Recommendations**

Throughout Unit 19, we ensured the long-term conservation of wolves, provided for a broad range of human uses and values, and increased public awareness and understanding of wolf conservation and management. Even within those areas where wolf control took place, at least 25–30 wolves in Unit 19A, and 40 wolves in Unit 19D East remained each year after wolf control programs concluded. Largely because of these wolf control programs, wolves had a sufficiently high profile such that education regarding wolves and their prey gained the attention of the Board of Game, Fish and Game Advisory Committees, and the public through media contacts and other means.

During RY10–RY14 we met the Unit 19A management objective to reduce wolf numbers to the lowest level possible and at least 60% within the WCFA. The portion of Unit 19A outside the WCFA is instrumental in ensuring our objective that 30–36 wolves remain in all of Unit 19A, which was achieved.

Within Unit 19D East, we achieved our objective to reduce wolf numbers to the lowest level possible and at least 60% within the WCFA. The portion of Unit 19D East outside the WCFA is instrumental in ensuring our objective that 40 wolves remain, which was achieved.

We harvested fewer than 30% of wolves from Units 19B, 19C, and the remainder of Unit 19D. The objective was met to provide for harvest of up to 150 wolves from these areas. Based on the reported annual harvests, the estimated annual harvest rate in these areas was <10%, meeting that objective.

Getting wolf control permittee participation in the WCFAs is difficult. Low participation is attributed primarily to high cost of aviation fuel, distance of the wolf control areas to large population centers, time available to fly (which did not always coincide with good weather and

snow conditions needed to take wolves using aerial methods), and landowner restrictions among other reasons. Future wolf control programs should favor permittees with a track record of participation and success but should be mindful of the need to recruit new participants who will be necessary for these programs to remain viable in the future.

Because incidental take of wolves accounts for much of the total wolf harvest in Units 19B and 19C, wolf harvest will likely remain low.

Recruiting new wolf trappers would be desirable. One way to do this and to accommodate the desire in local villages to take more wolves is to offer trapping clinics on taking wolves. Whenever these have been offered, they have been well received and other potential management benefits may follow. Therefore, we recommend conducting these clinics as resources allow. Wolf control programs are designed to help achieve moose population and harvest objectives. In Units 19A and 19D East, no moose population and harvest objectives have been met, so we recommend maintaining these predation control programs and our current wolf management goals for Unit 19.

## **II. Project Review and RY15–RY19 Plan**

### **Review of Management Direction**

#### **MANAGEMENT DIRECTION**

There are no suggested changes in the management direction. However, objectives are adjusted below to more clearly reflect their intent and meaning.

#### **GOALS**

- G1. Ensure the long-term conservation of wolves throughout their historic range in Alaska in relation to their prey and habitat.
- G2. Provide for the broadest possible range of human uses and values of wolves and their prey populations that meet wildlife conservation principles and which reflect the public's interest.
- G3. Increase public awareness and understanding of the uses, conservation, and management of wolves, their prey, and habitat in Alaska.

#### **CODIFIED OBJECTIVES**

##### Amounts Reasonably Necessary for Subsistence Uses

- C1. Unit 19 has a positive customary and traditional use finding for wolves, as determined the Board of Game, with an amount necessary for subsistence uses of 90% of the harvestable portion.

##### Intensive Management

- C2. Unit 19A, maintain a population of at least 25–30 wolves annually after wolf control.

C3. Unit 19D East, maintain a population of at least 40 wolves annually after wolf control.

## **MANAGEMENT OBJECTIVES**

### Units 19A and 19D

- M1. Within the Unit 19A WCFA, reduce the number of wolves to the lowest level possible while achieving at least a 60% reduction from precontrol population.
- M2. Ensure that at least 25–30 wolves remain in Unit 19A.
- M3. Within the Unit 19D WCFA, reduce the number of wolves to the lowest level possible while achieving at least a 60% reduction from precontrol population levels.
- M4. Ensure that at least 40 wolves remain in Unit 19D East.

### Units 19B, 19C, and remainder of 19D

- M5. Provide for an annual harvest of up to 30% of the combined wolf population Provide for an annual harvest of up to 150 wolves .

## **REVIEW OF MANAGEMENT ACTIVITIES**

### 1. Population Status and Trend

ACTIVITY 1.1. Conduct aerial surveys for wolf population censuses, population estimates, or minimum counts within the WCFAs in Units 19A and 19D East every 3 years. Management priorities and funding will determine completion of future surveys (objectives C4, C6, M3, M4, M5).

#### *Data Needs*

Population estimates ensure a minimum number of wolves remain after predation control.

#### *Methods*

##### Unit 19A

Conduct Intensive Aerial Wolf Surveys (IAWS) in Unit 19A during February or March as survey conditions allow within the Unit 19A WCFA (Gardner and Pamperin 2014). We use these surveys to generate estimates of the Unit 19A wolf population, taking into account hunter-trapper harvest and wolves killed in the wolf predation control program. If weather does not permit IAWS, we will attempt the surveys the following year.

##### Unit 19D

Conduct Intensive Aerial Wolf Surveys (IAWS) in Unit 19D to obtain a minimum count during February or March every three years as survey conditions allow, within the Unit 19D WCFA.

ACTIVITY 1.2. Continue to refine annual wolf population estimates based on wolf survey results, incidental sightings, hunter interviews, trapper questionnaires, and evaluation of sealing documents.

#### *Data Needs*

Spring wolf population estimates help to evaluate the success of the wolf predation control programs which have objectives to reduce wolf numbers by at least 60% of pre-control population numbers and that objectives to ensure a minimum number of wolves remains each year after predation control activities.

#### *Methods*

We will conduct interviews with wolf control permittees to obtain detailed information on pack sizes and locations within the WCFAs.

### 2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor harvests and trapper effort through sealing records, trapper interviews, and trapper questionnaires.

#### *Data Needs*

No change from report.

#### *Methods*

Wolves harvested by trappers, hunters, and predation control permittees will be sealed to monitor harvest. Harvest data will be archived in WinfoNet and reported by regulatory year. Information recorded for each wolf include date of kill, name of person harvesting wolf, location, method of take, transportation, sex of the wolf, color of the pelt, and number of wolves thought to be in the pack.

### 3. Habitat Assessment-Enhancement

None.

### 4. Wolf Management with Public Participation and Outreach

ACTIVITY. 4.1. Increase public awareness through trapper education clinics.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

An increasing portion of wolves brought in by trappers and hunters are infested with lice, decreasing the value and quality of the hides. In addition, Genetic Follicular Dysplasia is becoming more common among wolves harvested in Unit 19.

## Data Recording and Archiving

- Wolf harvest (fur sealing) data are archived in ADF&G's Wildlife Information Network (WinfoNet) database.
- Electronic data and files such as survey memos and reports are stored in the WinfoNet – Data Archive. Project Title: McGrath Area Office. Primary Region: Region III.
- Hard copies of data and files such as survey memos and reports are also stored in files in the McGrath office.

## Agreements

The Central Kuskokwim Moose Management Plan (CKMMP; ADF&G 2006)

## Permitting

None.

## **References Cited**

- Boertje, R. D., P. Valkenburg, and M. E. McNay. 1996. Increases in moose, caribou, and wolves following wolf control in Alaska. *Journal of Wildlife Management* 60(3):474–489.
- Central Kuskokwim Moose Management Planning Committee. 2004. Central Kuskokwim moose management plan. Alaska Department of Fish and Game, Division of Wildlife Conservation, Fairbanks. [http://www.adfg.alaska.gov/static-f/research/plans/pdfs/final\\_ckmmp.pdf](http://www.adfg.alaska.gov/static-f/research/plans/pdfs/final_ckmmp.pdf) (Accessed 4 April 2016).
- Gardner, C. L., and N. J. Pamperin. 2014. Intensive aerial wolf survey operations manual for Interior Alaska. Alaska Department of Fish and Game, Wildlife Special Publication ADF&G/DWC/WSP-2014-01, Juneau.
- Gasaway, W. C., R. O. Stephenson, J. L. Davis, P. E. K. Shepherd, and O. E. Burris. 1983. Interrelationships of wolves, prey, and man in interior Alaska. *Wildlife Monographs* 84.
- Gasaway, W. C., R. D. Boertje, D. V. Grangaard, D. G. Kelleyhouse, R. O. Stephenson, and D. G. Larsen. 1992. The role of predation in limiting moose at low densities in Alaska and Yukon and implications for conservation. *Wildlife Monographs* 120.
- Hayes, R. D., and A. S. Harestad. 2000. Demography of a recovering wolf population in the Yukon. *Canadian Journal of Zoology* 78:36–348.
- Hayes, R. D., R. Farnell, R. M. P. Ward, J. Carey, M. Dehn, G. W. Kuzyk, A. M. Baer, C. L. Gardner, and M. O'Donoghue. 2003. Experimental Reduction of Wolves in the Yukon: Ungulate Responses and Management Implications. *Wildlife Monographs* 152.

- Keech, M. A., M. S. Lindberg, R. D. Boertje, P. Valkenburg, B. D. Taras, T. A. Boudreau, K. B. Beckmen. 2011. Effects of predator treatments, individual traits, and environment on moose survival in Alaska. *Journal of Wildlife Management* 75:1361–1380.
- Keech, M. A. 2012. Response of moose and their predators to wolf reduction and short-term bear removal in a portion of Unit 19D. Alaska Department of Fish and Game, Final Wildlife Research Report ADF&G/DWC/WRR-2012-7, Juneau.
- Stephenson, R. O. 1978. Characteristics of exploited wolf populations. Alaska Department of Fish and Game, Division of Game, Federal Aid Final Report 1 July 1975-30 June 1976, Federal Aid in Wildlife Restoration Job 14.3R, Juneau.



