

Wolf Management Report and Plan, Game Management Unit 26A:

Report Period 1 July 2010–30 June 2015, and
Plan Period 1 July 2015–30 June 2020

Ryan Klimstra



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This species management report and plan was reviewed and approved for publication by Phillip L. Perry, Management Coordinator for Region V for the Division of Wildlife Conservation.

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Purpose of this Report

This report provides a record of survey and inventory management activities for wolves (*Canis lupus*) in Unit 26A for the 5 regulatory years 2010–2014 and plans for survey and inventory management activities for the next 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 planned changes in data collection activities. 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 26A is an administrative unit within Game Management Unit (GMU) 26, the northernmost game management unit in Alaska. It is 56,000 mi² and located entirely north of the Arctic Circle (Fig. 1). Unit 26A consists of the area from Cape Lisburne to west of the Itkillik River drainage, and west of the east bank of the Colville River between the Itkillik River and the Arctic Ocean and all Arctic river drainages south to Gates of the Arctic National Park and Anaktuvuk Pass (Fig. 1).

Wolves can be found throughout Unit 26A but often concentrate around seasonal prey sources such as moose, which are primarily found in riparian corridors in the southeast portion unit 26A. Additionally, aggregations of both calving and overwintering caribou attract wolves to regions within Unit 26A that are outside of the riparian corridors.

Only a portion of the Unit 26 area is surveyed for wolves. The survey area is 17,800 km² (6,872 mi²) and it includes the drainages of the Killik River to the west, the Anaktuvuk River to the east, the Colville River between the mouths of the Killik and Anaktuvuk rivers to the north, and 68°17' latitude to the south (Fig. 1).

Summary of Status, Trend, Management Activities, and History of Wolves in Unit 26A

Wolf numbers in Unit 26A have fluctuated widely since the turn of the nineteenth century. During the early 1900s, caribou, moose, and wolves were less abundant than they are today. Caribou and moose numbers increased after 1930, and by the 1940s wolves were abundant. Wolf numbers were greatly reduced by federal wolf control during the 1950s and by public aerial hunting during the 1960s. Following the ban on aerial wolf hunting in 1970 and land-and-shoot aircraft hunting of wolves in 1982, wolf populations increased, especially in the mountains and foothills of the Brooks Range. Wolves are thought to be less abundant on the coastal plain due to the seasonal scarcity of caribou, outbreaks of rabies, and their vulnerability to hunters in the open country (Trent 1988).

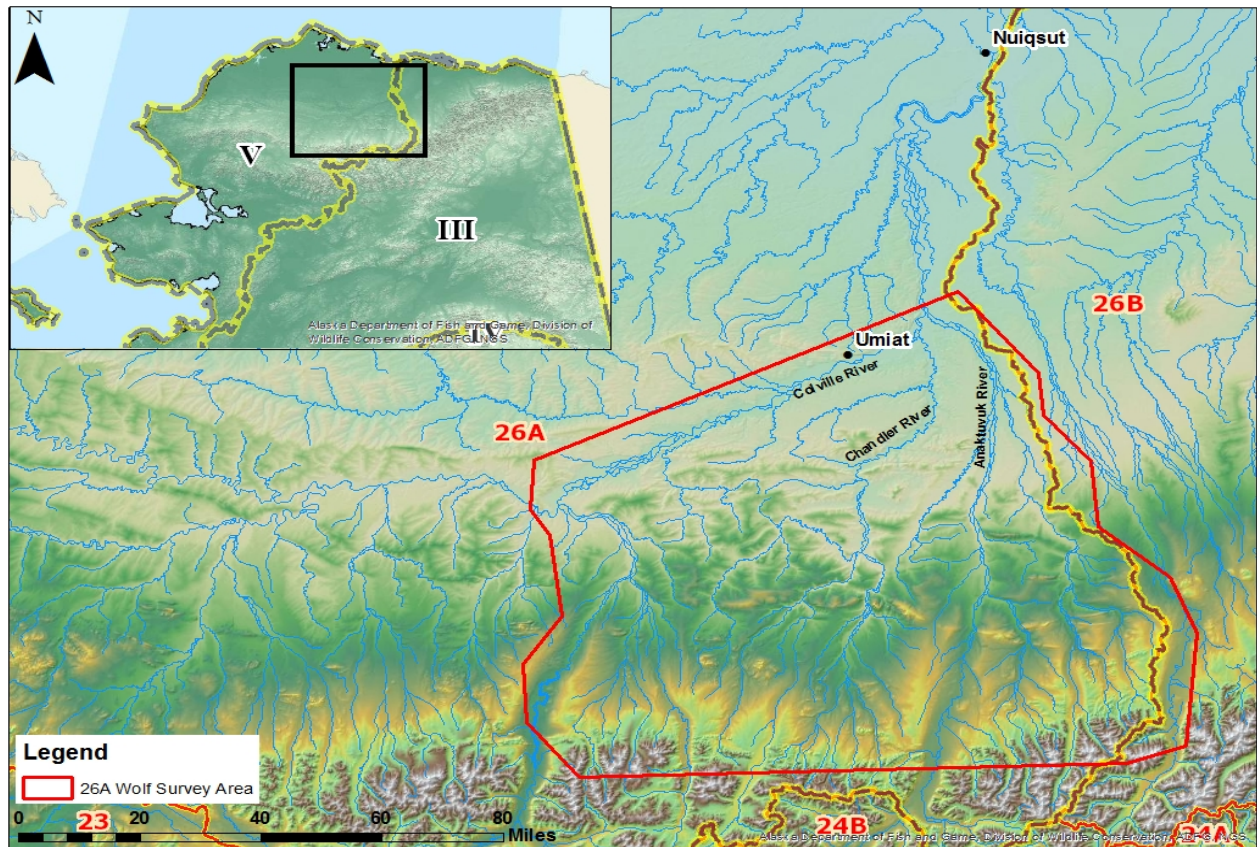


Figure 1. Unit 26A 17,800 km² (6,872 mi²) wolf survey area consists of the Anaktuvuk River and Chandler River drainages including the Colville River west to and including the Etivluk River.

The reported annual harvest of wolves increased during the early 1990s to a peak of 60 animals in RY93 then decreased to 47 in RY94, and then dropped further and remained at low levels, with mean reported annual harvest RY95–RY09 at just 12 wolves (range = 2–23).

The harvest declined due to lower wolf numbers and hunting effort. The pelts of most wolves harvested in Unit 26A are used locally for the manufacture of parka ruffs or handicrafts and often are not sealed, so actual harvest is greater than reported harvest. The harvest of wolves is greatest in the southeastern part of Unit 26A where residents of Anaktuvuk Pass and Nuiqsut hunt and trap wolves throughout the winter and residents of Utqiagvik (Barrow), travel for spring hunts.

Trent (1988) used a Traditional Track Count (TTC) method to survey a 16,848 km² (6,480 mi²) area around Umiat and estimated density at 2.6 wolves/1,000 km² (386 mi²) in 1986 and 2.7–3.2 wolves/1,000 km² (386 mi²) in 1987. In 1992, 2 surveys were flown: 1) a Track Intercept Probability (TIP) survey of a 10,343 km² (3,994 mi²) area around Umiat, which produced an estimate of 4.0–6.2 wolves/1,000 km² (386 mi²), and 2) a TTC survey of 23,293 km² (8,955 mi²), which contained the same area around Umiat plus more coastal plain area to the north and resulted in an estimate of 2.9–4.2 wolves/1,000 km² (386 mi²) (Carroll 1994). A Sample Unit Probability Estimator (SUPE) was used in 1994 to count wolves in the 10,343 km² (3,994 mi²) study area around Umiat, and the density was estimated at 4.1–4.3 wolves/1,000 km² (386 mi²).

A SUPE survey was completed in 1998 in the same area, and a density estimate of 1.0–2.2 wolves/1,000 km² (386 mi²). was generated. The 1998 survey was incomplete because of poor conditions, but it was apparent that the wolf population had declined (Carroll 2000). The TIP and SUPE methods are summarized in Becker (1991); Becker and Gardner (1990); and Becker et al. (1998). More recently, a Traditional Track Count survey completed in 2008 generated an estimate of 3.3–4.4 wolves per 1000 km² (386 mi²) (Carroll 2009).

Stephenson and James (1982) estimated the wolf population size for Unit 26A at 144–310 wolves in 1982. In 1993 it was estimated that there were 240–390 wolves (1.8–2.9 wolves/1,000 km² (386 mi²)) in 32 to 53 packs in Unit 26A (Carroll 1997). Reconnaissance surveys are conducted annually in the trend count area and TTC surveys are conducted once every 3 years for the whole survey area. Harvest continues to be monitored through sealing records and community harvest surveys.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

A management plan for wolves drafted and adopted by the Alaska Board of Game in 1976 (ADF&G 1976) has been modified in part through public input and Board of Game action through the years, with changes in management direction and objectives reported in periodic wolf management reports.

GOALS

- Maintain viable wolf populations in Unit 26A (Goal 1)
- Assess the impact of wolves on Unit 26A moose and caribou (Goal 2)
- Involve the public in developing a management plan and making future management decisions concerning wolves (Goal 3)

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The wolf population of 26A has a positive customary and traditional use (C&T) finding. A positive C&T and amount necessary for subsistence of 4–8 wolves was specifically established for Unit 26A in RY12–RY13(ANS; [5 AAC] 99.025). Prior to RY12–RY13 only a positive C&T had been established and it was for all of 26 without a specific ANS.

Intensive Management

Wolf intensive management may be considered if the Teshekpuk caribou (TCH) population drops below the intensive management objective of 15,000–28,000 caribou or if the Western Arctic caribou herd (WACH) dips below 200,000 caribou. There is not an intensive management objective established for the Colville moose population because it was not determined to be an

intensive management population. The WACH (201,000 in 2016) was just slightly above the IM objective. The TCH (41,000 in 2015) Both populations are being monitored carefully as they remain close to these objectives.

MANAGEMENT OBJECTIVES

1. Monitor the population density of wolves in the trend area bordered by the Colville, Killik, and the Itkillik rivers, and Gunsight Mountain once every 3 years or when weather conditions allow.
2. Monitor harvest through the statewide sealing program, by interviewing knowledgeable people in the villages, and by including the North Slope Borough's (NSB) village-based subsistence harvest monitoring program, if available.
3. Interview hunters, guides, and pilots to collect harvest and population status information.
4. Record wolf observations during moose counts and compare them to observations made during past counts.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Determine the population density of wolves in the wolf survey area every 3 years or when weather conditions allow and/or wolves seen per hour in the moose trend count area annually.

Data Needs

Determining the wolf population density aids in identifying potential sources of mortality for both moose and caribou in GMU 26A particularly when their abundance levels are low or decreasing. Determining the number of wolves seen per hour in the moose trend count area provides an index for comparison when density estimates are not obtained.

Methods

Wolf surveys were flown during April 2011 through April 2015 in conjunction with moose surveys. During the annual moose trend count and triennial minimum population count surveys we employed 2 expert wolf trackers piloting PA-18 aircraft and recorded the number of wolves seen per hour, their location, and color of individuals in each pack. During April of 2013 we were able to estimate wolf density because conditions were suitable (fresh snow, total snow cover, and adequate lighting for good tracking conditions) to conduct a reconnaissance track survey (Stephenson 1978) for the entire 17,800 km² (6,872 m²) wolf survey area. This technique is also referred to as a Traditional Track Survey (TTS). When wolf tracks were detected we followed them until the wolf pack was found or we lost the tracks. If wolves were not found on a set of tracks, our pilots estimated the number of wolves that made the tracks. All wolf and track sightings were compared by time, location, and wolf color patterns to prevent double counting.

During 2011, 2012, 2014, and 2015 conditions were not adequate over the entire survey area, and we adjusted our effort and recorded the number of wolves and wolf tracks that we saw during our moose trend count and minimum population count surveys. Whenever we found a set of wolf tracks during a moose survey, we employed the same technique outlined above for a TTS survey. We used this information to calculate the number of wolves seen per hour.

Results and Discussion

During the 2013 TTS we found 9 packs of wolves that ranged in size from 2 to nine wolves and saw 2 individuals for a total of 42 wolves and a density of 2.4 wolves/1,000 km² (386 mi²) (Table 1). We also found the tracks of 4 more packs but did not see the wolves. These packs probably ranged from 2 to 5 wolves and totaled nine to twelve wolves. The total number of wolves seen plus the ones tracked but not seen was 51 to 54 wolves resulting in a density of 2.9–3.0 wolves/1,000 km² (386 mi²) (Table 1). This compares to densities of 1–2.2 wolves/1,000 km² (386 mi²), 4.1–4.3 wolves/1,000 km² (386 mi²), 4.0–6.2 wolves/1,000 km² (386 mi²), and 3.3–4.4 wolves/1,000 km² (386 mi²) obtained from surveys in 1998, 1994, and 1992 and 2008 using TIP, SUPE, and TTS techniques (Table 1; Carroll 1994, 1997, 2000, 2012).

The number of wolves seen during moose surveys increased substantially from 0.13 wolves/hr. in 2002 to 3.2 wolves/hr. in 2009 (Table 2). In 2010 we counted 1.66 wolves/hr. and in 2011 the number had declined to 0.45 wolves/hr. In 2012 the number of wolves seen during moose surveys increased again to a peak of 3.2 wolves/hr. and then declined to 2.7 wolves/hr. in 2013. Wolves seen per hour continued to decline to 0.28 wolves/hr. for 2014 and then increased slightly to 0.8 wolves/hr. in 2015 and 1.0 wolves/hr. in 2016. Confidence intervals are not applicable for traditional track count and track intercept surveys. The sample unit probability estimator survey quality was not high enough to run an estimate and therefore calculate a confidence interval.

The decrease in wolves per hour from 2009 to 2011 was at least partly due to a relatively large harvest of wolves during the 2010 regulatory year (Table 3). The overall decline in wolves per hour may also be a result of the decline in moose during the reporting period (Fig. 2). However, the significant increase in wolves seen per hour in 2012 and 2013 was greater than would be expected for the very slight increase in the moose population. After 2013, the moose population continued to decline and wolves per hour sharply declined and has remained low (Fig. 2).

Recommendations for Activity 1.1

Continue current activity schedule.

Table 1. Wolf density and population estimates for Unit 26A and the Colville River study area, 1982–2013.

Year	Colville River Study Area ^a		Unit 26A		Basis of estimate
	Wolves per 386 mi ²	Number of packs	Population estimate	Number of packs	
1982			144–310		TTC survey ^b and extrapolation to rest of unit.
1986	2.6	2			TTC survey ^b
1987	2.7–3.2	4–5			TTC survey ^b
1990			145–350	14–30	Past surveys and interviews with pilots and hunters.
1992	2.9–4.2	4–8			TTC survey ^b
1992	4.0–6.2	5–8			TIP survey ^c
1993			240–390	32–53	1992 surveys and interviews with pilots and hunters.
1994	4.1–4.3	8–10			SUPE survey ^d
1998 ^e	1–2.2	2			SUPE survey ^d
2008	3.3–4.4	12–17			TTC survey ^b
2012	3.3–4.4 ^f	10–15			TTC survey ^{be}
2013	2.9–3.0	9–13			TTC survey ^b

^a Colville Study Area—southeast portion of Unit 26A bordered by the Colville, Killik, and Itkillik Rivers and the Brooks Range.

^b Traditional Track Count survey.

^c Track Intercept Probability survey.

^d Sample Unit Probability Estimator survey.

^e Incomplete survey due to poor snow cover.

^f Likely similar to 2008 survey based on number of packs and total wolves seen in the incomplete survey.

Table 2. Wolves seen per hour during spring moose surveys, 1991–2016.

Year	Wolves/hour
1991	0.74
1995	0.46
1999	0
2002	0.13
2005	0.44
2008	1.78
2009	3.2
2010	1.66
2011	0.45
2012	3.2
2013	2.7
2014	0.28
2015	0.8
2016	1.0

Table 3. Sex and color of wolves from reported harvests and estimated unreported harvest, Unit 26A, regulatory years^a 1988–2015.

Regulatory year	Sex			Color			Estimated ^b unreported harvest	Total reported harvest
	% Male	% Females	% Unknown	% Gray	% Black	% White		
1988	38	62	0	100	0	0	—	13
1989	71	29	0	64	29	7	48	14
1990	66	34	0	83	13	3	82	30
1991	67	28	5	72	22	6	37	18
1992	59	30	11	79	17	3	42	29
1993	65	32	3	72	17	11	37	60
1994	73	27	0	89	6	5	32	47
1995	42	58	0	85	9	6	41	19
1996	57	43	0	81	14	5	40	21
1997	75	25	0	69	31	0	30	16
1998	60	33	7	67	13	20	28	15
1999	50	13	37	37	50	13	25	8
2000	83	14	3	76	21	3	32	29
2001	75	25	0	88	6	6	33	16
2002	40	60	0	80	20	0	33	5
2003	62	38	0	77	15	8	33	13
2004	60	40	0	80	20	0	33	5
2005	67	33	0	67	25	8	33	12
2006e	67	33	0	67	22	11	15	9
2007e	56	44	0	100	0	0	15	9
2008	54	38	8	65	27	8	20	26
2009	59	41	0	76	24	0	22	17
2010	51	46	3	86	3	11	20	37
2011	60	40	0	70	30	0	—	10
2012	72	28	0	90	10	0	—	29
2013	61	39	0	83	17	0	—	18
2014	69	31	0	100	0	0	—	13

^a A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.

^b Estimated unreported harvest is derived from community harvest assessment surveys.

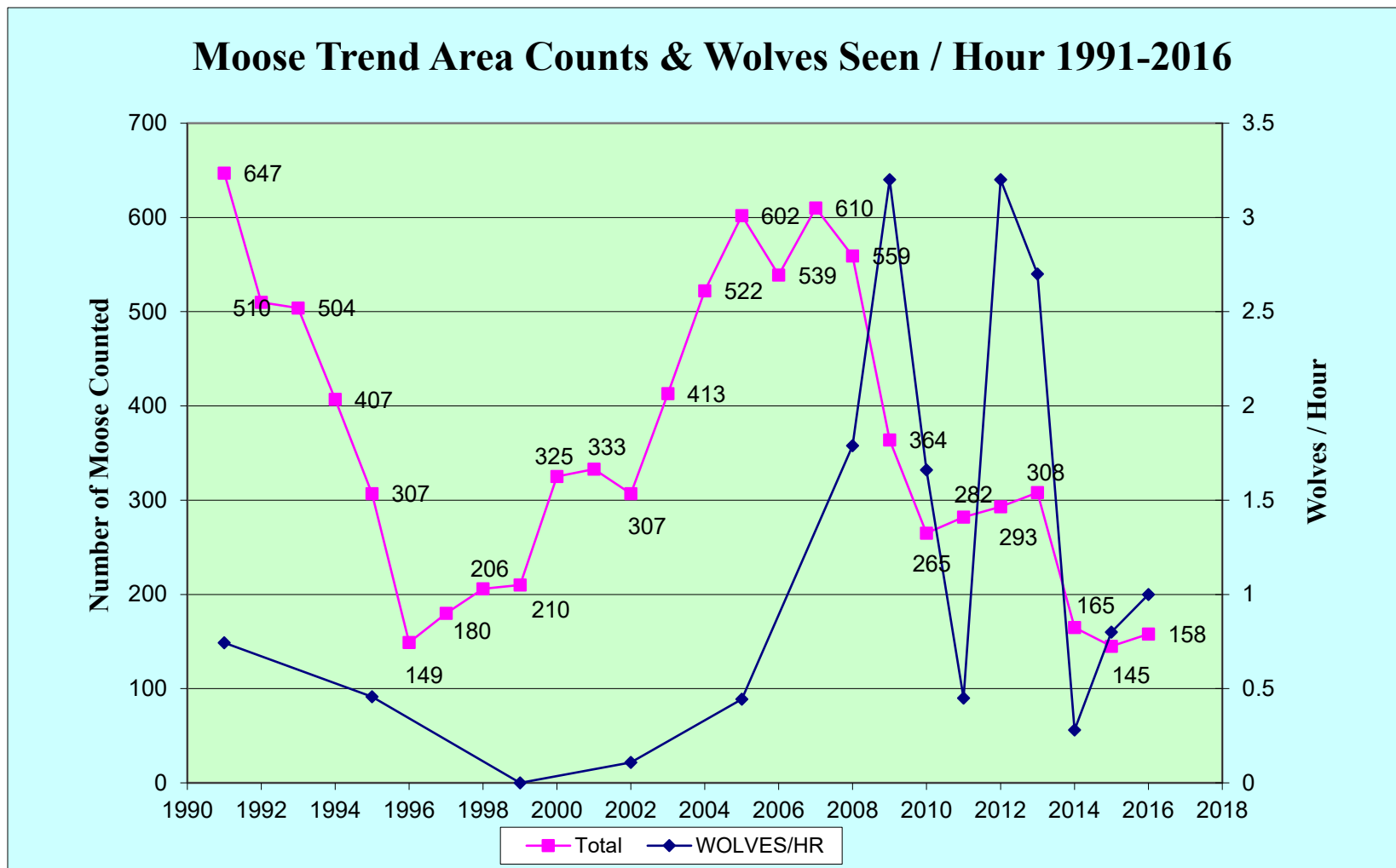


Figure 2. The number of wolves seen per hour and the number of moose counted during annual spring moose trend count surveys, 1991–2016.

2. Mortality–Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor mortality and harvest.

Data Needs

Monitoring the reported wolf harvest through sealing certificates is an important method that is used to help determine the abundance of wolves in Unit 26A. Metadata from sealing certificates can be used to evaluate where wolves tend to be available to resident and nonresident users and extrapolate seasonal effects on caribou and moose populations after the season is complete.

Methods

We collected harvest data from sealing certificate records, informal discussions with knowledgeable village residents, and through the NSB's Subsistence Harvest Documentation Project.

Season and Bag Limit

<i>Regulatory years 2010–2015</i>	Resident Open Season (Subsistence and General Hunts)	Nonresident Open Season
Unit and Bag Limits		
Unit 26A		
Trapping: no limit	1 Nov–30 Apr	1 Nov–30 Apr
Hunting: 10 wolves	10 Aug–30 Apr	10 Aug–30 Apr

Results and Discussion

Harvest by Hunters and Trappers

During RY10, 37 wolves were sealed (Table 3). This is a substantial increase in the number of wolves sealed from the previous regulatory year and was likely a result of an increase in the wolf population and increased hunter effort. The number of sealed wolves then decreased by more than 70%, to 10 wolves, in RY11 (Table 3). Sealing records indicate an increase in harvest to 29 wolves in RY12 but then decreases to 18 and 13 wolves in RY13 and RY14, respectively (Table 3). It should be noted that community harvest surveys estimated unreported harvest ranging from 15 to 82 wolves from 1988 through 2010. Estimated unreported annual harvest for the reporting period is currently unavailable; however, it is likely around 18 wolves annually, which is the average estimated unreported harvest for the previous reporting period. It is possible that estimated unreported harvest derived from community harvest surveys may incidentally include wolves that were reported as harvested to the state. Unfortunately, we currently do not know how many wolves may be double counted; thereby inflating the estimated unreported harvest. However, we are confident that estimated unreported harvest is a fair representation because of

the continued cultural use and application of furs within the North Slope communities which local use ultimately eliminates the need for local residents to seal furs in order to sell them to a fur buyer. Although local use is common, many residents choose to seal their furs in an effort to comply with state regulations, document harvest, and legally sell their furs.

Hunter Residency and Success

Data from reported harvest show that in RY10, 12 North Slope residents harvested 33 wolves, a nonlocal resident harvested 2 wolves, and 2 nonresidents harvested 2 wolves. In RY11, 4 North Slope residents harvested 6 wolves and 2 nonresidents harvested 4 wolves. In RY12, 10 North Slope residents harvested 27 wolves and 2 nonresidents harvested 2 wolves. In RY13, 8 North Slope residents harvested 12 wolves, a nonlocal resident harvested 1 wolf, and 5 nonresidents harvested 5 wolves. In RY 2014, 5 North Slope residents harvested 9 wolves, 2 nonlocal residents harvested 2 wolves, and 2 nonresidents harvested 2 wolves. There is no information on the number of unsuccessful hunters.

During the reporting period 95% of wolves were harvested by hunters traveling by ORV, boat, skis or snow machine. The dominate mode of transportation used for harvest was snow machines with an annual average of 78% (Table 4). Trapping and use of aircraft account for the remaining percentage of method of take and transportation method used. There were no wolves harvested using snares or transported with the use of off-road vehicles, boats, or skis.

Most of the harvest occurred during January through April when furs are prime (Table 5). Nonresidents and 2 nonlocal residents accounted for all 17 wolves harvested during August and September and all these wolves were transported by aircraft (Table 4 and 5).

Permit Hunts

There were no permit hunts for wolves in Unit 26A during the reporting period.

Alaska Board of Game Actions and Emergency Orders

There were no Emergency Orders or game board Actions during the reporting period.

Recommendations for Activity 2.1

Continue current activity schedule.

Table 4. Method and transportation percent of reported wolf harvest, Unit 26A, regulatory years^a 1988–2015.

Regulatory Year	Method of take (%)				Transportation method (%)				Total reported harvest
	Trap	Rifle	Snare	Unknown	Aircraft	Snow machine	ORV	Boat/Skis	
1988	15	85	0	0	0	100	0	0	13
1989	64	36	0	0	15	85	0	0	14
1990	20	80	0	0	3	90	7	0	30
1991	39	61	0	0	6	94	0	0	18
1992	33	67	0	7	7	89	4	0	29
1993	33	66	1	0	8	85	0	7	60
1994	7	90	3	0	28	72	0	0	47
1995	21	74	5	0	0	95	0	5	19
1996	71	29	0	0	5	95	0	0	21
1997	0	100	0	0	0	100	0	0	16
1998	0	100	0	0	13	87	0	0	15
1999	0	100	0	37	80	20	0	0	8
2000	4	96	0	0	7	86	0	7	29
2001	0	100	0	0	0	100	0	0	16
2002	0	100	0	0	40	60	0	0	5
2003	0	85	15	0	23	77	0	0	13
2004	40	60	0	0	0	100	0	0	5
2005	8	92	0	0	8	92	0	0	12
2006	0	100	0	0	11	89	0	0	9
2007	11	89	0	0	22	78	0	0	9
2008	4	96	0	0	8	92	0	0	26
2009	59	41	0	0	6	94	0	0	17
2010	3	97	0	0	5	95	0	0	37
2011	0	100	0	0	40	60	0	0	10
2012	7	93	0	0	7	93	0	0	29
2013	0	100	0	0	28	72	0	0	18
2014	15	85	0	0	31	69	0	0	13

^a A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.

Table 5. Chronology for reported wolf harvest in Unit 26A, regulatory years^a 1988–2015.

Regulatory year	Month										Unknown	Total
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
1988	1	0	0	0	1	0	2	9	0	0	0	13
1989	0	2	0	1	2	2	2	5	0	0	0	14
1990	0	1	0	0	3	0	0	22	4	0	0	30
1991	0	1	0	0	0	2	1	11	3	0	0	18
1992	0	2	0	2	2	0	0	18	4	0	1	29
1993	2	5	0	1	4	2	5	29	12	0	0	60
1994	2	2	0	3	5	2	10	13	10	0	0	47
1995	0	1	0	3	0	0	0	11	1	3	0	19
1996	1	0	1	0	1	4	11	3	0	0	0	21
1997	0	0	0	2	5	3	1	5	0	0	0	16
1998	1	1	0	0	0	1	4	5	3	0	0	15
1999	0	1	0	2	0	0	3	0	0	0	2	8
2000	2	0	3	0	2	1	9	8	4	0	0	29
2001	0	0	2	0	3	0	7	4	0	0	0	16
2002	1	1	0	0	0	0	0	1	2	0	0	5
2003	0	0	1	0	2	0	6	4	0	0	0	13
2004	0	0	0	0	0	0	2	3	0	0	0	5
2005	1	0	0	0	0	0	3	5	3	0	0	12
2006	1	0	0	0	0	1	0	6	0	0	0	9
2007	2	1	0	2	0	0	0	4	0	0	0	9
2008	2	0	0	0	0	0	2	8	14	0	0	26
2009	0	1	0	0	6	0	4	6	0	0	0	17
2010	2	0	0	0	0	2	3	29	1	0	0	37
2011	2	2	0	0	0	0	1	1	4	0	0	10
2012	2	0	0	1	0	5	4	8	9	0	0	29
2013	4	1	2	0	1	1	0	6	2	1	0	18
2014	4	0	0	0	0	3	2	2	1	1	0	13

^a A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.

3. Habitat Assessment–Enhancement

Assessment

Unit 26A contains extensive open habitat and because arctic caribou herds migrate through 26A regularly wolves either follow this resource or have limited access to it if they do not also migrate. The Western Arctic caribou herd (WAH), which numbers approximately 200,000 animals, seasonally occupies parts of Unit 26A. Females calve in 26A in the Utukok Hills and both bulls and cows seek mosquito relief in the hills and coastline during the summer.

Occasionally, a small portion of the herd will overwinter in the Western portion of 26A or in the Brooks Range. However, a much larger portion normally overwinters on the Northern Seward Peninsula. Teshekpuk caribou herd (TCH) has approximately 35,000 animals and most of this herd remains in the unit year-round during most years cows often are concentrated during calving in June around Teshekpuk Lake and seek mosquito relief across Unit 26A during June, July and August. During the winter some move inland, and some continue to occupy the coast to take advantage of windblown areas to access forage.

The Colville River moose population currently numbers about 300 animals. Dall sheep are preyed upon in mountainous regions. Snowshoe hares moved into the Colville River system during the 1990s and spread throughout the river system, providing another food source for wolves.

Petroleum exploration and development may affect some wolf habitat. Hunters and trappers have reported that wolves move out of areas of Unit 26A when seismic exploration is taking place.

Enhancement

There was no habitat enhancement activity during this reporting period and there does not appear to be a need for wolf enhancement in Unit 26A.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

There were no nonregulatory management problems or needs during the reporting period.

Data Recording and Archiving

- All digitized survey data are stored on the Utqiagvik (Barrow) Area Biologist's computer and on an external, backup hard drive.
- Field data sheets are stored in filing cabinets in the Utqiagvik (Barrow) Area Biologist office.

Agreements

No agreements.

Permitting

No permitting.

Conclusions and Management Recommendations

Wolf numbers in the study area decreased during the late 1990s, likely due to a reduced prey base. The Unit 26A moose population declined by 75% between 1992 and 1996 and relatively few caribou from either the TCH or the WAH wintered in the area between Umiat and Anaktuvuk Pass during those years. It is also possible that disease could have been a factor in the decline in wolf numbers. The increase in wolves from 2002 to 2009 and from 2011 to 2012 was probably due to an increase in the number of caribou wintering in the area in some years, relatively high numbers of moose, and a substantial snowshoe hare (*Lepus americanus*) population. The recent down-turn in the wolf population is at least partially due to successful trapping and hunting by local residents.

The most recent estimate for the total number of wolves in Unit 26A was made in 1993. Assuming that most of the coastal plain has a lower wolf density than the foothill region that was surveyed it was estimated that 240–390 wolves (1.8–2.9 wolves/1,000 km², 386 mi²) in 32 to 53 packs were resident in Unit 26A (Carroll 1994). The total number of wolves in 26A is likely similar to or below the population estimate for what it was in 1993.

Most of reported harvested wolves were taken by residents of the North Slope, which is consistent with the reporting history for Unit 26A. Harvest documentation remains relatively low compared with other regions of the state. Given the major declines that have occurred in both the WAH and TCH, better documentation of wolf harvest and robust wolf survey data may become important aids to future caribou management. Continuing wolf survey efforts also will continue to provide insight on potential sources of mortality in the declining moose population in 26A.

II. Project Review and RY15–RY19 Plan

Review of Management Direction

MANAGEMENT DIRECTION

As caribou and moose populations in Unit 26A have declined to near IM objectives understanding the extent of predation by wolves could aid in management decisions. Collaring wolves may be a consideration if caribou populations drop below their IM population objective. Wolf and caribou mortalities that appear to be wolf kills are documented during each survey. There is no need for change in wolf management for RY15–RY19.

GOALS

- Maintain a viable wolf population and continue to encourage fur sealing of wolves.
- Maintain ANS objectives.
- Maintain the IM objective for caribou.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The wolf population of 26A has a positive customary and traditional use finding that was established in 2012. The amount necessary for subsistence is 4–8 wolves (ANS; [5 AAC] 99.025).

Intensive Management

Wolf intensive management may be considered if the Teshekpuk caribou (TCH) population drops below the intensive management objective of 15,000–28,000 caribou or if the Western Arctic caribou herd (WAH) dips below 200,000 caribou. There is not an intensive management objective established for the Colville moose population because it was not deemed an intensive management population.

REVIEW OF MANAGEMENT OBJECTIVES

There are no suggested changes as presented in the Management Objectives section of this report. Thus, management objectives will remain as follows for RY15–RY19:

1. Monitor the population density of wolves in the trend area bordered by the Colville, Killik, and the Itkillik Rivers, and Gunsight Mountain once every 3 years or when weather conditions allow.
2. Monitor harvest through the statewide sealing program, by interviewing knowledgeable people in the villages, and by using the North Slope Borough's (NSB) village-based harvest monitoring program.
3. Interview hunters, guides, and pilots to collect harvest and population status information.
4. Record wolf observations during moose counts and compare to observations made during past counts.

REVIEW OF MANAGEMENT ACTIVITIES

No changes in management activities are required for RY15–RY19.

1. Population Status and Trend

ACTIVITY 1.1. Determine the population density of wolves in the wolf survey area every 3 years or when weather conditions allow and/or wolves seen per hour in the moose trend count area annually.

Data Needs

No change.

Methods

No change. The division will continue to use the same methods outlined in the Management Report Activity 1.1 *Methods*.

2. Mortality–Harvest Monitoring

ACTIVITY 2.1. Monitor mortality and harvest.

Data Needs

Monitoring the reported wolf harvest through sealing certificates is an important method that is used to help determine the abundance of wolves in unit 26A. Metadata from sealing certificates can be used to evaluate where wolves tend to be available to resident and non-resident users and extrapolate post hoc seasonal effects on caribou and moose populations.

Methods

No change. See Management Report 2.1 *Methods*.

3. Habitat Assessment-Enhancement

See Management report 3.1

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Previous recording and archiving efforts will continue, and new ones are added for RY15–RY19:

- All wolf survey data will be digitized and stored on a computer hard drive in the Utqiagvik Area Biologist's office with staff time and resources permitting.
- All digitized data will be backed up on an external hard drive stored in the Utqiagvik Area Biologist's home. Additionally, digitized data will be emailed to the Nome office to be stored on an internal database housed on a server (<http://winfonet.alaska.gov/index.cfm>).
- Field data sheets will be stored in file folders located in the North Slope Utqiagvik Area Biologist's office and digitized copies will be stored on the North Slope Utqiagvik Area Biologist's office computer and emailed to the Nome office to be stored on an internal database housed on a server (<http://winfonet.alaska.gov/index.cfm>).
- Historical survey notes and data sheets will be scanned for more secure data archival provided staff time and resources are available.

Agreements

None.

Permitting

None.

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