Species Management Report and Plan ADF&G/DWC/SMR&P–2021–4

Wolf Management Report and Plan, Game Management Units 12 and 20E:

Report Period 1 July 2010–30 June 2015, and

Plan Period 1 July 2015–30 June 2020

Jeffrey A. Gross

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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 Doreen Parker McNeill, Management Coordinator for the Division of Wildlife Conservation.

Species management reports and plans are available via the Alaska Department of Fish and Game's public website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, AK 99811-5526; phone: (907) 465-4190; email: dfg.dwc.publications@alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Services (www.arlis.org).

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Please contact the authors or the Division of Wildlife Conservation at (907) 465-4190 if you have questions about the content of this report.

Cover Photo: Spring in the Fortymile country, Game Management Unit 20E. ©2018 ADF&G. Photo by Doreen Parker McNeill.

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Purpose of this Report

This report provides a record of survey and inventory management activities for wolf in Units 12 and 20E 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., RY14 = 1 July 2014–30 June 2015). 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 it of wildlife management activities. In 2016 the Alaska Department of Fish and Game's (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to more efficiently report on trends and to 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 and supersedes the 1976 draft Alaska wildlife management plans (Alaska Department of Fish and Game 1976).

I. RY10–RY14 Management Report

Management Area

Unit 12 encompasses 9,978 mi^2 in east-central Alaska. It is bounded by the Canada border on the east and is centered on 62° 34′ N latitude and 142° 7′ W longitude. Major river drainages within the unit include the Nabesna and Chisana, which combine to form the Tanana River. Unit 12 encompasses 9,975 mi^2, of which approximately 6,000–7,000 mi^2, or that portion at or below 6,000 feet in elevation, is generally used by wolves within the unit. Elevations within the unit range from 1,500 feet along the Tanana River to greater than 12,000 feet in the Wrangell, Nutzotin, and Mentasta mountains. Much of the northeastern portion of the unit (e.g., Tetlin National Wildlife Refuge) is dominated by lowland shrubs and sedge meadows, wetlands, mature black spruce (*Picea mariana*) and white spruce (*Picea glauca*) forests, and recently burned areas dominated by shrubs and early successional forest species. The western and southern portions of the unit include more mountainous areas dominated by spruce forest in the lowland valleys transitioning to shrub communities, subalpine and alpine tundra, and glaciated areas at the higher elevations.

Unit 20E encompasses 10,680 mi^2 in east-central Alaska and is bounded by the Canada border on the east and is centered on 64° 16′ N latitude, 142° 20′ W longitude. Major river drainages within the unit include the Fortymile, Charley, Ladue, and Seventymile. The unit was described in detail by Gasaway et al. (1992) and generally consists of hills with elevations ranging from 1,000 feet to 5,000 feet. However, more mountainous areas, with elevations exceeding 6,000 feet, are found in the northwestern portion of the unit, and lowland areas (2,000–2,500 feet, Mosquito Flats) are found in the southwestern portion of the unit. Vegetation types include lowland shrub and sedge meadows, mature black spruce (*Picea mariana*) forest, recently burned areas dominated by shrubs and early successional forest species, subalpine shrub, and alpine tundra.

The climate in Units 12 an 20E is typical of Interior Alaska, where temperatures frequently reach 80° F in summer and -40° F in winter.

Summary of Status, Trend, Management Activities, and History of Wolves in Units 12 and 20E

Wolves occur throughout Units 12 and 20E. Primary prey species in this area are moose and caribou. Wolves are an important furbearer and big game species. Population surveys have only been conducted in the portions of these units within the Upper Yukon–Tanana Predation Control (UYTPC) area since 2003.

Wolf population reduction and regulation in Units 12 and 20E was initiated in 2004 with adoption of the UYTPC area. Initially the objective was to increase the moose population in Units 12 and 20E; in 2006 the UYTPC area was expanded to include an increase in the Fortymile caribou herd. During this report period, the UYTPC area encompassed the portion of Unit 12 north of the Alaska Highway and all of Unit 20E. The wolf predation control program within the UYTPC area was authorized for 5-year periods by the Board of Game in 2004, 2009, and 2014. This program is currently ongoing and is conducted by permitted private citizens in coordination with and augmented by ADF&G (Alaska Department of Fish and Game 2016). The wolf population within the portions of Units 12 and 20E within the UYTPC area is currently reduced from levels observed prior to the implementation, but population trends outside this area are unknown.

Management Direction

Wolves are an integral part of Interior Alaska's ecosystems. Compatible human uses for the species include both hunting and trapping (for personal use and also commercial sale of furs), photography, viewing, listening, and scientific and educational purposes (ADF&G 2002). The aesthetic value of being aware of or observing wolves in their natural environment is also recognized as an important human use of wolves.

We also recognize that integral to wolf management is the premise that wolf populations are renewable resources which can be harvested and manipulated to enhance human uses of other resources, such as caribou and moose. Management may include both the manipulation of wolf population size and total protection of wolves from human influence.

Existing Wildlife Management Plans

The operational plan for intensive management (IM) of the Fortymile caribou herd during RY14–RY19 includes a portion of Unit 12 and all of Unit 20E (5 AAC 92.113). This operational plan includes wolf control and is designed to increase caribou numbers for human harvest. To comply with regulatory requirements for Intensive Management programs, I submit an Annual Intensive Management Report to the Board of Game, which provides an annual evaluation of the program.

Goals

During RY10–RY14, the Unit 12 and 20E wolf management goals were as follows:

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 Harvest

C1. Units 12 and 20E have a positive customary and traditional use finding for wolves, as determined by the Board of Game (board), with an amount necessary for subsistence set at 90 percent of the harvestable portion.

Intensive Management

C2. UYTPC area: maintain a population of at least 88–103 wolves annually after wolf control (including Unit 12 north of the Alaska Highway and all of Unit 20E).

MANAGEMENT OBJECTIVES

The management objectives for wolves in Units 12 and 20E were developed to align with the wolf population objectives for the UYTPC area, which encompasses Unit 12 north of the Alaska Highway and all of Unit 20E.

M1. Maintain a population of at least 100 wolves in Unit 12.

M2. Reduce the fall population to no less than 60 wolves in Unit 20E.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Develop annual minimum population estimates in Units 12 and 20E. Temporarily close aerial wolf control, wolf trapping, and wolf hunting in Unit 12 or 20E if the population within either unit declines below the management objective for that unit (Objectives C2, M1, and M2).

Data Needs

Population estimates ensure that the minimum number of wolves remain within the range outlined by management objectives each year, after wolf control is conducted, and hunting and trapping seasons are over (Objectives C2, M1, and M2).

Methods

LATE-WINTER/SPRING POPULATION ESTIMATES

Late-winter/spring (February–April) aerial wolf surveys were conducted in conjunction with the UYTPC Program during RY11 (13 February–23 March 2012), RY12 (6–28 March 2013), RY13 (19 February–27 March 2014), and RY14 (19 February–9 March 2015), using reconnaissance style survey techniques (Stephenson 1978; Gasaway et al. 1983) within and adjacent to the Fortymile caribou calving and post-calving range in the UYTPC area, outside of the Yukon–Charley National Preserve (objectives C2, M1, and M2). Conditions were not adequate to conduct an aerial survey in RY10. The area surveyed encompasses approximately 194 mi^2 of northwest Unit 12 and approximately 4,194 mi^2 of western and northern Unit 20E.

Aerial surveys followed assumptions outlined by Becker et al. (1998). If assumptions were not met during a particular year, these counts no longer represented a census but were considered a minimum count of wolves in that survey area (Gardner and Pamperin 2014). During reconnaissance surveys, survey teams in fixed-wing aircraft and a helicopter made direct observations of wolves and counted tracks in assigned areas. Between 1 and 7 Super Cubs and 1 Robinson R-44 helicopter were used each day that surveys were conducted, with a total of 630.5, 331.0, 189.8 and 214.9 hours flown by these aircraft during RY11, RY12, RY13, and RY14, respectively. Not all of this time was spent searching for wolves, as the primary purpose of these efforts was to remove wolves from the control area. Therefore, much of this flight time was spent on logistical support (transporting fuel, supplies, wolves, etc.), circling packs while waiting for the helicopter to arrive (to remove wolves), climbing to altitude to communicate with other aircraft, and removing wolves. Total hours spent searching for wolves was not tracked, but in general, the majority of total time flown during each year was dedicated to searching for wolves.

We mapped all individual observations of wolves, wolf tracks, and kill sites from aerial surveys; incidental sightings by department staff; local pilots; evaluation of sealing documents; hunter and trapper interviews and conversations with wolf control permittees; and analyzed potential overlap among sightings to reduce the possibility of overestimating the number of packs (2 or more wolves together were considered a pack) or wolves in a pack. We combined all information on the map to estimate the number of wolves in the UYTPC area where aerial surveys were conducted during RY10–RY14. For further detail on these survey efforts see RY10 through RY14 Final Summary of Upper Yukon–Tanana Predator Control Program reports and survey maps, and the Division of Wildlife Conservation's RY10 through RY14 Upper Yukon–Tanana intensive management annual activity reports (February 2010, 2011, 2012, 2013 and 2014) to the to the Alaska Board of Game for further details (J. Gross ADF&G, unpublished reports and maps, Tok). The Board of Game reports are available on the department's website: http://www.adfg.alaska.gov/index.cfm?adfg=intensivemanagement.unit_12_20b_20d_20e_25c#anchor.

To estimate wolf numbers, pack sizes, and territory boundaries in portions of Units 12 and 20E where aerial surveys were not completed, and to supplement aerial survey results, we used information from the literature, sealing records, and conversations with wolf hunters, trappers, and wolf control permittees (Gardner and Pamperin 2014).

Lone Wolves

Lone (single) wolves are generally individuals dispersing from packs rather than wolves living a long-term solitary existence (Ballard et al. 1987, Adams et al. 2008). The number of lone wolves varies throughout the year. In Units 12 and 20E, lone wolves are most common during February–May, which is when most young wolves disperse (Adams et al. 2008, Gardner and Pamperin 2014). This transient component of the population is particularly important to include in the Unit 12 and 20E minimum population estimates because more open territories are available to wolves in these units due to removal of packs under the ongoing UYTPC program, which encompasses northern Unit 12 and all of Unit 20E. Based on results from other wolf control programs (Hayes et al. 2003), these transient wolves will settle all open areas in these units and must be considered to develop annual fall UYTPC program wolf kill objectives, evaluate annual control efforts, and because the Unit 12 and 20E minimum spring population objectives of at least 100 and 60 wolves respectively includes lone wolves.

To estimate the wolf population during RY10–RY14 within the UTYPC area, I increased the estimates by 10% to account for lone wolves. Although estimating lone wolves is difficult and shortcomings with doing so are identified by Burch et al. (2005) and Adams et al. (2008), I continued to include lone wolves when developing the Units 12 and 20E minimum wolf population estimates in order to compare them with the UYTPC program estimates.

Fall Population Estimates

Although the Units 12 and 20E fall population estimates were not developed during RY10–RY14, fall population estimates were developed for the UYTPC Area using 25 iterations of the PredPrey model (Version 1.5; McNay and DeLong 1998). These estimates were used to develop annual fall kill objectives for the UYTPC Program (J. Gross, unpublished data, ADF&G Tok). Model inputs included population and harvest data for wolves, moose, and caribou in the UYTPC Area. Mathematical equations in PredPrey, which define model functions, were taken from published predator–prey studies that had been conducted across North America. In addition, autumn estimates were refined each spring by adding the annual wolf harvest to late winter estimates. Fall population estimates minus annual harvest were used to determine post-control/harvest minimum population estimates and wolf removal rates within the UYTPC area where aerial surveys were conducted to help evaluate program success. Fall estimates were not developed for individual units, or used to evaluate unit-specific management objectives, therefore, fall population data was not included in this report. For further detail on fall population estimates developed for the UYTPC program, see the Division of Wildlife Conservation's RY10–RY14 Upper Yukon–Tanana intensive management annual activity reports (February 2010, 2011, 2012, 2013 and 2014) to the to the Alaska Board of Game for further details (http://www.adfg.alaska.gov/index.cfm?adfg=intensivemanagement.unit_12_20b_20d_20e_25c#anchor).

Unit 12 and 20E Minimum Population Estimate

To estimate Units 12 and 20E annual minimum wolf population size after wolf control and hunter/trapper harvest, we used unit-specific data from UYTPC Program surveys supplemented with information from the literature; sealing records; and conversations with wolf hunters, trappers, and wolf control permittees in areas that were not surveyed. If a unitwide population estimate fell below a unit-specific minimum population objective, an Emergency Order was

issued to limit further reductions and allow for wolf numbers to increase above minimum objectives.

Results and Discussion

UNIT 12

No wolf surveys have been conducted in Unit 12 since RY03 outside the areas surveyed for the UYTPC Program, which went into effect in RY04. Results of the RY03 survey are described by Bentzen (2009). The most recent Unit 12 estimate was developed in spring 2008 when Tok ADF&G staff estimated the Unit 12 wolf population to be 179–192 wolves (18.1–19.4 wolves/1,000 mi^2, 7–7.5 wolves/1,000 km^2) in 31 packs after accounting for all wolves removed by hunting, trapping, and wolf control activities (Bentzen 2012). This estimate was based on a combination of hunting and trapping harvest reports; observations by ADF&G biologists; and previous estimates for northwestern Unit 12 (Gardner 2003), the Chisana area (Hollis 2006), and the UYTPC area (Gross 2009); and includes an estimate of an additional 10% for single and dispersing wolves. Although there were insufficient survey data to develop accurate annual unitwide population estimates, after analysis of all available population and harvest data during RY10–RY14, there is little indication that the number of packs (28–32 packs) or average fall pack size (7.0–7.4 wolves) in Unit 12 have changed appreciably since RY03, except in a small portion of northwest Unit 12 where several packs were reduced in some years by wolf control that began in RY04. Therefore, the Unit 12 wolf population was assumed to have remained well above the minimum objective of 100 wolves during RY10–RY14.

UNIT 20E

The most recent unitwide population survey in Unit 20E was conducted in RY09. Based on results from this survey, and supplemental information from ADF&G staff and area pilot/trapper observations, harvest reports, and National Park Service radiocollar data, Tok ADF&G staff estimated the fall 2009 population to be 173–190 wolves in 30 packs, including 16–17 (10%) single wolves not associated with packs (Bentzen 2012).

There were insufficient survey data to develop accurate annual unitwide population estimates; however, analysis of all available information during RY10–RY14 allowed us to develop adequate minimum population estimates to conclude that the management objective of at least 60 wolves in Unit 20E was met for each of these years. The majority of the postcontrol/harvest wolf population was located in eastern Unit 20E where control activities were minimal in each of these years. There is little indication that the number of packs (approximately 15) and average pack size (7.0–7.4 wolves) in eastern Unit 20E has changed appreciably since RY03, prior to wolf control activities that began in RY04.

Recommendations for Activity 1.1

Continue as funding allows. Population estimates ensure that the minimum number of wolves remain each year after wolf control has been conducted and hunting and trapping seasons are over (Objectives C2, M1, and M2).

2. Mortality, Harvest Monitoring and Regulations

ACTIVITY 2.1 Monitor harvest and trapper effort through sealing records; and interviews with trappers and control permittees (Objectives C2, M1, and M2).

Data Needs

Fur sealing data from WinfoNet are reviewed annually to assess harvest and predation control take. This information is used for intensive management and annual reports to the Board of Game and to address objectives C2, M1, and M2.

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

Hunting and trapping regulations were aligned in Units 12 and 20E during RY10–RY14. Hunting regulation book numbers 51, 52, 53, 54, and 55 list wolf hunting regulations and Alaska Trapping Regulation book numbers 51, 52, 53, 54, and 55 list wolf trapping regulations during these years.

Regulatory Year	Regulation Type	Bag Limit	Season
RY10–RY13	Hunting	5 wolves	10 Aug–31 May
RY14	Hunting	10 wolves	10 Aug–31 May
RY10–RY14	Trapping[1]	No Limit	15 Oct–30 Apr

[1]Traps and snares less than 3/32" are not permitted during October and April.

Current wolf hunting regulations for Units 12 and 20E can be found on the ADF&G website at: http://www.adfg.alaska.gov/index.cfm?adfg=wildliferegulations.hunting

Results and Discussion

HUNTER/TRAPPER HARVEST AND WOLF CONTROL PERMITTEE TAKE

During RY10–RY14, 193 wolves (range = 32–50 per year) in Unit 12 and 311 wolves (range = 50–91 per year) in Unit 20E were reported as harvested by hunters, trappers, and wolf control permittees (Table 1). Of these, control permittees took 120 wolves: 6 in Unit 12 and 114 in Unit 20E (Table 1). Annual wolf harvests varied among years. These oscillations were likely not related to fluctuations in wolf numbers, but rather to other annual factors that affected trappers and control permittees (e.g., weather, snow conditions, caribou distribution, and intensive management participation).

Table 1. Units 12 and 20E wolf harvest and take method, regulatory years 2010–2014.

Regulatory year	Unit 12						Unit 20E						
				SDA[a]						SDA[a]	SDA[a]		
	Shoot	Trap	Snare	MW303	Other	Total	Shoot	Trap	Snare	MW303	ADF&G	Other	Total
2010	8	12	17	2	1	40	9	9	15	17	0	0	50
2011	7	13	11	0	1	32	3	8	17	6	31	0	65
2012	17	14	15	4	0	50	8	4	9	58[b]	13	0	91
2013	8	4	20	0	1	33	4	8	15	22	5	0	54
2014	11	6	21	0	0	38	5	11	6	11	18	0	51
Total	51	49	84	6	3	193	29	40	62	114	67	0	311

[a] SDA = Same-day airborne aerial wolf control method associated with predation control programs in Units 12 and 20E. There were no ADF&G SDA wolves taken in these years in Unit 12.

[b] 1 wolf was not recovered (not sealed).

HUNTER RESIDENCY AND SUCCESS

Areawide, the number of successful hunters and trappers during RY10–RY14 ranged from 16 to 21 per year in Unit 12, and 10–16 per year in Unit 20E, with a harvest of 187 wolves in Unit 12 and 131 wolves in Unit 20E (Tables 2a and 2b.). Most of the wolf harvest (about 93%) was taken by residents in both Units 12 and 20E (Tables 2a and 2b).

Harvest Chronology

During RY10–RY14, 32 and 41 percent of the reported wolf harvest and aerial wolf take in Units 12 and 20E, respectively occurred during February–March (Tables 3a and 3b). Winter wolf harvest and take by aerial control were 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 trapping 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.

Method of Take and Transport Methods

In Units 12 and 20E, outside of harvest for predator control by same-day-airborne, snaring continued as the leading method of take (Table 1). Snowmachine (53%) was the most common transportation method used followed by airplane (23%) to take wolves in Units 12 and 20E by hunters and trappers (Table 4).

Game Board Actions and Emergency Orders

In March 2014, the Board of Game modified and reauthorized the Upper Yukon–Tanana predation control implementation plan in portions of Units 12, 20B, 20D and 25C and all of Unit 20E for 6 years beginning 1 July 2014. This plan allows aerial wolf control by private permittees and the department within the 18,750 mi^2 control area. The objectives of this plan include maintaining a population of at least 88–103 wolves annually after wolf control (including Unit 12 north of the Alaska Highway and all of Unit 20E).

In February of 2012, the board increased the hunting bag limit for wolves from 5 to 10 wolves per regulatory year.

Recommendations for Activity 2.1

Continue. Wolf sealing data should be reviewed annually to assess harvest and predation control take. This information is used for intensive management and annual reports to the Board of Game and to address objectives C2, M1 and M2.

Table 2a. Unit 12 wolf harvest success by residency and sex, regulatory years 2010-2014.

Regulatory year	Reported harvest					Residency			No. of successful trappers	No. of successful hunters
	Male	Female	Unknown	% Male	Total	Nonresident	Resident	Unknown		
2010	15	19	4	39	38	3	35	0	12	6
2011	13	18	1	41	32	3	29	0	14	7
2012	25	19	2	54	46	2	44	0	10	9
2013	23	10	0	70	33	5	28	0	8	8
2014	15	21	2	39	38	3	35	0	10	11
Total	91	87	9	NA	187	16	171	0	54	41

Table 2b. Unit 20E wolf harvest and aerial wolf control take success by residency and sex, regulatory years 2010-2014.

Regulatory year	Reported harvest					Residency			No. of successful trappers	No. of successful hunters
	Male	Female	Unknown	% Male	Total	Nonresident	Resident	Unknown		
2010	17	14	2	52	33	3	29	1[a]	7	9
2011	11	17	0	39	28	1	27	0	7	3
2012	12	9	0	57	21	1	20	0	5	8
2013	11	16	0	41	27	2	25	0	8	4
2014	9	12	1	41	22	0	22	0	6	4
Total	60	68	3	NA	131	7	123	1	33	28

Table 3a. Unit 12 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 (*n*)																				Total harvest
	Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr		Unk/ other		
2010	3	(1)	8	(3)	0	(0)	11	(4)	16	(6)	29	(11)	24	(9)	5	(2)	3	(1)	3	(1)	38
2011	0	(0)	6	(2)	6	(2)	9	(3)	3	(1)	16	(5)	38	(12)	16	(5)	3	(1)	3	(1)	32
2012	4	(2)	11	(5)	0	(0)	0	(0)	13	(6)	41	(19)	15	(7)	13	(6)	2	(1)	0	(0)	46
2013	3	(1)	15	(5)	3	(1)	9	(3)	6	(2)	30	(10)	15	(5)	6	(2)	9	(3)	3	(1)	33
2014	5	(2)	16	(6)	3	(1)	0	(0)	0	(0)	42	(16)	11	(4)	21	(8)	0	(0)	3	(1)	38
Total	3	(6)	11	(21)	2	(4)	5	(10)	8	(15)	33	(61)	20	(37)	12	(23)	3	(6)	2	(4)	187

Table 3b. Unit 20E 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 (*n*)																				Total harvest
	Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar		Apr		Unk/ other		
2010	0	(0)	24	(8)	0	(0)	6	(2)	6	(2)	6	(2)	36	(12)	18	(6)	3	(1)	0	(0)	33
2011	0	(0)	11	(3)	0	(0)	7	(2)	18	(5)	29	(8)	29	(8)	7	(2)	0	(0)	0	(0)	28
2012	5	(1)	29	(6)	5	(1)	5	(1)	0	(0)	19	(4)	14	(3)	24	(5)	0	(0)	0	(0)	21
2013	0	(0)	15	(4)	4	(1)	4	(1)	30	(8)	11	(3)	15	(4)	22	(6)	0	(0)	0	(0)	27
2014	0	(0)	9	(2)	0	(0)	23	(5)	14	(3)	14	(3)	18	(4)	14	(3)	9	(2)	0	(0)	22
Total	1	(1)	18	(23)	2	(2)	8	(11)	14	(18)	15	(20)	24	(31)	17	(22)	2	(3)	0	(0)	131

Table 4. Units 12 and 20E hunting and trapping harvest by transport method, regulatory years 2010–2014.

Regulatory year	Percent harvest by transport method (*n*)									
	Unit 12					Unit 20E				
	Aircraft	Snowmachine	Ski/Snowshoe	Other[a]	Total	Aircraft	Snowmachine	Ski/Snowshoe	Other[a]	Total
2010	32 (12)	52 (20)	3 (1)	13 (5)	38	12 (4)	55 (18)	0 (0)	33 (11)	33
2011	16 (5)	53 (17)	12 (4)	19 (6)	32	4 (1)	85 (24)	4 (1)	7 (2)	28
2012	28 (13)	44 (20)	15 (7)	13 (6)	46	20 (4)	48 (10)	4 (1)	28 (6)	21
2013	55 (18)	27 (9)	9 (3)	9 (3)	33	7 (2)	78 (21)	4 (1)	11 (3)	27
2014	34 (13)	47 (18)	3 (1)	16 (6)	38	5 (1)	59 (13)	0 (0)	36 (8)	22
Total	33 (61)	45 (84)	8 (16)	14 (26)	187	10 (12)	66 (86)	2 (3)	23 (30)	131

[a] "Other" includes the following transport methods: boats, 3- and 4-wheelers, off-road vehicles, highway vehicles, and other unreported methods.

3. Habitat Assessment and Enhancement

None.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Hair loss caused by genetic follicular dysplasia and lice is a problem on wolves in portions of Units 12 and 20E. 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 1) remove lice-infected individuals from the population, 2) remove predators from the population in the belief that a public service is being rendered, and 3) 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.

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 memoranda and reports are stored in the WinfoNet Data Archive. Project Title: Tok Wolf Management Program. Primary Region: Region III.
- Hard copies of data and files such as survey memos and reports are located in the Tok office.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

ADF&G area management staff achieved our management goal to provide a sustained opportunity to participate in hunting and trapping wolves. We met the management objectives of maintaining a population of at least 100 wolves in Unit 12 and 60 wolves in Unit 20E during 2012–2014 (M1 and M2). No changes are recommended to the approach of monitoring annual harvest through sealing records and interviews with trappers and control permittees.

II. Project Review and RY15–RY19 Plan

Review of Management Direction

There are no suggested changes in management direction.

MANAGEMENT DIRECTION

Management direction will remain the same as during RY10–RY14.

GOALS

The Unit 12 and 20E wolf management goals are unchanged and will remain as follows during RY15–RY19:

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 Harvest.

C1. Units 12 and 20E have a positive customary and traditional use finding for wolves, as determined by the Board of Game, with an amount necessary for subsistence set at 90 percent of the harvestable portion.

Intensive Management

C2. UYTPCA area: maintain a population of at least 88–103 wolves annually after wolf control (including Unit 12 north of the Alaska Highway and all of Unit 20E).

MANAGEMENT OBJECTIVE

The management objective for wolves in Units 12 and 20E was developed to align with the wolf population objectives for the UYTPC area, which encompasses Unit 12 north of the Alaska Highway and all of Unit 20E. Management objective M2 was reworded to match the wording used for M1, but the intent of M2 is unchanged.

M1. Maintain a population of at least 100 wolves in Unit 12.

M2. Maintain a population of at least 60 wolves in Unit 20E.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Develop annual minimum population estimates in Units 12 and 20E. Temporarily close aerial wolf control (if active), wolf trapping, and wolf hunting in Unit 12 or 20E if the population within either unit declines below the unit management objective (Objectives C2, M1, and M2).

Data Needs

No change from report period.

Methods

No change from report period.

2. Mortality, Harvest Monitoring, and Regulations

ACTIVITY 2.1. Monitor harvest and trapper effort through sealing records, trapper interviews, and trapper questionnaires (Objectives C2, M1, and M2).

Data Needs

No change from previous report period.

Methods

No change from previous report period.

3. Habitat Assessment and Enhancement

None.

4. Management with Public Participation and Outreach.

ACTIVITY 4.1. Provide information to state and federal regulatory processes and the public on management of this species.

Data Needs

In order for those that engage in regulatory processes to understand management and biology of wolves in Units 12 and 20E, especially in the Upper Yukon-Tanana predation control area, it is important for ADF&G staff to communicate and coordinate with Fish and Game Advisory Committees, the Alaska Board of Game, Federal Regional Advisory Councils, and the Fortymile Caribou Harvest Management Coalition about wolf management and biology; and also review and analyze regulation proposals for the Alaska Board of Game and the Federal Subsistence Board.

Increasing public awareness of wolf population trends; effects on moose and caribou populations; and management directions through trapper education clinics, newsletters, brochures, news

releases, and other documents will provide the public with valuable information to make informed decisions when participating in these regulatory processes. The Annual Intensive Management Report submitted to the Board of Game will allow for compliance with regulatory requirements for Intensive Management programs by providing an annual evaluation of the Upper Yukon-Tanana predation control program.

Methods

ADF&G area management staff will attend meetings of Fish and Game Advisory Committees, the Alaska Board of Game, Federal Regional Advisory Councils, and the Fortymile Caribou Harvest Management Coalition to provide information about wolf biology and management in Units 12 and 20E, and review and analyze regulation proposals for the Alaska Board of Game and the Federal Subsistence Board.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Hair loss on wolves, caused by genetic follicular dysplasia and lice, will continue to be monitored in portions of Units 12 and 20E.

Data Recording and Archiving

No change from report period.

Agreements

No change from report period.

Permitting

No change from report period.

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