Wolf Management Report and Plan, Game Management Unit 17:

Report Period 1 July 2015–30 June 2020, and Plan Period 1 July 2020–30 June 2025

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Alaska Department of Fish and Game

Division of Wildlife Conservation

Wolf Management Report and Plan, Game Management Unit 17:

Report Period 1 July 2015–30 June 2020, and Plan Period 1 July 2020–30 June 2025

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

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

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Cover Photo: A wolf stands in grass. ©2023 ADF&G. Photo by Todd Rinaldi.

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Purpose of this Report

This report provides a record of survey and inventory management activities for wolf (*Canis lupus*) in Game Management Unit 17 for the 5 regulatory years 2015–2019 and plans for survey and inventory management activities in the next 5 regulatory years, 2020–2024. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY15 = 1 July 2015–30 June 2016). 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 report more efficiently 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.

I. RY15–RY20 Management Report

Management Area

Game Management Unit 17 (18,800 mi²) is located in Southwest Alaska and is divided into 3 subunits (Fig. 1). Unit 17A is characterized by the Togiak River watershed, Unit 17B is associated with the upper Nushagak and Mulchatna river watersheds, and Unit 17C features the lower Nushagak and Wood river watersheds. Ecoregions within Unit 17 include the Bristol Bay lowlands, Kuskokwim Mountains, Wood River Mountains, Neacola Mountains, Nushagak Hills, and Stuyahok Hills (Nowacki et al. 2001). Unit 17 features diverse geography such as the Ahklun Mountains, Wood River Mountains, and Neacola Mountains; the Nushagak Hills which make up the northern portion of Unit 17B; and large expanses of wet meadow and tundra habitat scattered throughout. Unit 17B is defined by 2 large river systems, the Nushagak and Mulchatna, which converge into the former near the southern border of the subunit and define a major portion of Unit 17C. These river corridors contain willow (Salix spp.), cottonwood (Populus balsamifera), alder (Alnus spp.), and spruce (Picea spp.). Adjacent to the stream corridors, the habitat changes to wet meadow and tundra. Both Units 17B and 17C also contain large areas of spruce and mixed birch (Betula spp.) forests. The western edge of both Units 17B and 17C is dominated by the Wood River Mountains and a series of large lakes between mountain peaks. Unit 17A is separate from the Mulchatna and Nushagak rivers, but has a similar composition of riparian areas, wet meadow, and tundra habitats located away from the streams, in addition to mountainous terrain. However, Unit 17A lacks the large expanses of spruce and mixed forest common to other subunits; rather, shrubs of alder and willow are the dominant woody species.

Summary of Status, Trend, Management Activities, and History of Wolves in Unit 17

Wolves are present throughout Unit 17; however, data on current and historic abundances are lacking. Harvest data from 1962 to the present provide some indication of wolf distribution and relative abundance, but these data were not collected in a consistent manner over time.



Figure 1. Game Management Unit 17 in Southwest Alaska, regulatory years 2015–2019.

Federal bounty records from RY62 to RY69 indicate that annual harvest varied from 1 to 25 wolves, with the majority of the harvest taken by aerial shooting. However, mandatory sealing did not begin until RY72; thus, reported harvest prior to that point may only represent a portion of the actual harvest. Additionally, after the Federal Airborne Hunting Act passed in 1972, only ground shooting or trapping and snaring harvest was reported, with no reported aerial hunting harvests. Despite this, it has been reported to department staff in Dillingham by a longtime aerial wolf hunter that aerial hunting continued to take place during these years, though the sealing records do not reflect this activity¹.

After a peak harvest of 111 wolves in RY74, wolf density appeared to decline through the late 1970s, then increased again during the mid-to-late 1980s. In 1988, the department implemented a trapper questionnaire program to collect information on the relative abundance of furbearers, including wolves. This had the effect of adding another source of information to wolf abundance and population trends, in addition to the existing sealing records. The trapper questionnaire and harvest indicated that wolf populations began to increase again in the early 1990s, likely related to a simultaneous increase of moose (*Alces alces*) and caribou (*Rangifer tarandus*) populations in the unit. During this report period, reports from local residents suggest wolf numbers are stable to decreasing.

Wolf habitat in Unit 17 supports a diverse and moderately abundant prey base. These include ungulates (caribou and moose), beaver, snowshoe and Alaska hares, salmon, and marine mammal carcasses for coastal areas. Caribou from the Mulchatna caribou herd (MCH) numbered an estimated 13,448 (±1,632) animals in RY20. Due to a decline in MCH numbers, the Board of Game (BOG, board) authorized a wolf predation control program through same-day-airborne (SDA) aerial shooting of wolves by pilots and gunners permitted by the department in RY11. The SDA program was active in portions of Unit 17 throughout RY15–RY19, and BOG authorized an expansion of the wolf removal area in RY17 from 1,200 mi² to 9,844 mi². Moose are widely distributed across most of Unit 17 and number around 7,000 individuals. Beaver is abundant and widely distributed across the unit, as are salmon during the summer and early fall months.

Management Direction

Wolves in Unit 17 are managed to provide for a variety of consumptive and nonconsumptive human uses. Wolves are valuable furbearers, but also provide other benefits such as photography, viewing, and scientific research (ADF&G 2022). The present season and bag limits provide for the multiple uses of wolves. However, during RY15–RY19, wolves in portions of Units 17B and 17C were being managed to reduce predation on ungulates through SDA predator control. The wolf predation control program has been in place since 2011 as part of an intensive management (IM) program to increase survival and recruitment of MCH.

¹ N. L. Barten, Wildlife Biologist, ADF&G, Dillingham, personal communication.

EXISTING WILDLIFE MANAGEMENT PLANS

- Operational Plan for Intensive Management of Caribou (*Rangifer tarandus*) in Game Management Units 9B, 17, 18, and 19B during Regulatory Years 2018–2024.
- Direction, goals, and guidelines from Alaska Wildlife Management Plans: Southwestern Alaska (ADF&G 1976) have been used by the department to provide guidance when informing BOG decisions.
- Strategic Plan, Division of Wildlife Conservation (ADF&G 2002).

GOALS

- Ensure the long-term conservation of wolves in Unit 17.
- Provide for a broad range of human uses and values of wolves.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Although there is a positive customary and traditional use finding for wolves in Unit 17, the board has not set an amount necessary for subsistence level.

Intensive Management

The initial IM program for the MCH predation management area included portions of Units 9B, 17B, and 17C which were established in 2011. Units 19A and 19B were adopted in regulation and approved by BOG in 2012 (ADF&G 2016) and further expanded in RY17; hereafter collectively referred to as the wolf control area (WCA). The objective of the IM program is to increase caribou abundance, primarily through increased calf survival. Increased calf survival is monitored based on calf-to-cow ratios obtained in October, with the MCH IM calf-to-cow ratio objective of 30:100.

Although this report is for Unit 17, the IM programs in adjacent Units 9B, 19A, and 19B are part of the overall effort to improve survival and recruitment of MCH and therefore are referenced here.

IM wolf population objectives for MCH in WCA are as follows:

- Annually reduce the number of wolves within the WCA to a level that results in increased calf survival in caribou calving areas within Units 9B, 17B, 17C, 19A, and 19B. Increased calf survival is monitored through fall calf-to-cow ratios, with the MCH IM calf-to-cow ratio objective of 30:100.
- The IM plan was initially approved for 6 years and was scheduled to end in 2017; however, due to most of the IM objectives not yet being met by 2017, the department

requested that the board reauthorize this program for an additional 6 years, extending it through to 2024, which coincides with the region's 3-year board cycle. This plan authorizes the department to issue permits to public pilot and gunner teams to practice SDA methods of take. These permits allow for land-and-shoot taking of wolves and/or aerial shooting by a backseat gunner.

MANAGEMENT OBJECTIVES

Maintain a wolf population in Unit 17 that will sustain an annual harvest of at least 25 wolves.

MANAGEMENT ACTIVITIES

Population Status and Trend

ACTIVITY 1.1. Conduct a sample unit probability estimator (SUPE; Becker et al. 1998, 2004) survey, intensive aerial wolf survey (Gardner and Pamperin 2014), or minimum wolf count (MWC; Gardner and Pamperin 2014) to estimate wolf abundance within WCA in Units 17B, 17C, 9B, 19A, and 19B.

Data Needs

An estimate of wolf abundance is needed to evaluate the success of wolf removal in WCA and to determine what level of wolf removal is sufficient to meet IM objectives for fall recruitment, population, and harvest. Other data needs for regular survey and inventory efforts for robust monitoring of population and demography are desired to evaluate harvest rates, predator-prey interactions, etc.

Methods

In March 2017, the department initiated a study involving the deployment of GPS (global positioning system) collars on wolf packs in the IM area. The objectives of the study are to map wolf pack territories, determine seasonal pack sizes, and evaluate changes in wolf density relative to the wolf removal program.

Results and Discussion

During the initial capture field work, wolf tracks were common and found throughout much of the WCA. ADF&G biologists collared 17 wolves, comprising 5 packs and multiple lone wolves. Mean minimum observed pack size was 6 wolves during spring and 9 wolves during fall 2017. In 2017, a preliminary density calculation based on 7 months of GPS data and minimum observed seasonal pack sizes resulted in wolf densities of 5.7 per 1,000 mi² in spring and 7.8 per 1,000 mi² in fall in the Mulchatna and lower Nushagak river drainages. This estimated fall density calculates to a minimum of 76 wolves comprising the packs which inhabit the MCH WCA. This estimate should be viewed cautiously, as we did not have all the known packs within the WCA collared, and the estimate does not include lone wolves which are known to occur in the WCA.

The spring 2017 survey results of 5.7 wolves per 1,000 mi² increase from a previous MWC abundance of 4.7 per 1,000 mi² in March of 2012². However, observations during wolf capture operations in April 2018 were that both the occurrence and distribution of wolf tracks decreased substantially from the previous spring, and most sets of tracks encountered were of singles or pairs of wolves. During that effort we only found a total of 5 additional wolves: 1 breeding pair and 3 lone females. The 2018 mean spring pack size was 2 wolves. During summer, 3 packs produced a minimum of 16 pups, and the 2018 fall mean pack size was 7 wolves.

Recommendations for Activity 1.1

Continue MWCs as funding and weather allow and for as long as the wolf predator control program is active.

Deploying radio collars on wolf packs within and adjacent to WCA is instrumental in assessing wolf abundance and other population parameters such as pack size, reproduction, home range, distribution, and habitat use in relation to prey concentrations. However, deploying radio collars in an active WCA may not be prudent due to the likelihood of collared animals being removed.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor wolf harvest through field observations, fur sealing reports, trapper questionnaires, and contact with trappers and hunters.

Data Needs

Wolf harvest data is necessary to annually assess trends in harvest, corroborate anecdotal or incidental observations or survey results, and ensure that the population is not being harvested in excess of sustained yield principles and harvest objectives. Monitoring, collecting, and analyzing harvests are also methods used to assess the effectiveness of IM wolf control.

Methods

Hunters and trappers are required to seal harvested wolves and provide data on their harvest within 30 days of season end to allow the department to monitor the wolf harvest in a timely manner. These data include pack size, color of wolves harvested, harvest location and month, hunter and trapper method of harvest, and transportation used. These data are compiled and stored in ADF&G's Wildlife Information Network (WinfoNet). Harvest is reported and compiled by RY. These data help us annually assess trends in harvest, corroborate anecdotal or incidental observations or survey results, and ensure that the population is not being harvested in excess of sustained yield principles and harvest objectives.

Season and Bag Limit

Unit and bag limits	Resident open seasons	Nonresident open seasons
Hunting: 10 wolves per day.	1 Aug–30 Apr	1 Aug–30 Apr
Trapping: No limit.	10 Nov–30 Apr	10 Nov–30 Apr

² Todd Rinaldi, ADF&G, Palmer, Game Management Units 17B and 19B wolf survey memorandum, 12 January 2013.

Harvest by Hunters-Trappers

During RY15–RY19, the total wolf take by hunters, trappers, and SDA participants in Unit 17 was 289 wolves. Yearly take ranged from 24 to 88 wolves, with an average annual take of 57 wolves (Table 1). Methods of harvest and removal are influenced by weather conditions, particularly snow cover. Therefore, take levels may not have a discernible trend from year to year. Harvest and removal success is largely dependent on adequate snowmachine travel conditions.

Regulatory year	Unit 17A	Unit 17B	Unit 17C	Unit 17Z ^a	Total
2015	_	4	20	_	24
2016	3	51	14	_	68
2017	2	36	50	_	88
2018	2	13	13	_	28
2019	2	26	52	1	81
Total	9	130	149	1	289

Table 1.	Wolf take,	Unit 17,	Southwest	Alaska,	regulatory	vears	2015-2019.
		<i>c</i> ,				J • • • • •	

Note: En dashes indicate not applicable or no data available.

^a Unit Z refers to wolf take from unspecified subunits.

The primary method of harvest during the report period was ground shooting (62%), followed by removal efforts by SDA participants (20%), trapping and snaring (16%), and unknown methods (2%; Table 2). During this report period, the majority of harvest occurred in Unit 17C (52%). Units 17B and 17C contain open tundra habitat, allowing hunters to effectively track wolves by snowmachine, which is more time efficient than trap and snare lines. Although this report is generally specific to Unit 17, IM programs in adjacent Units 9B, 19A, and 19B are part of the overall effort to improve survival and recruitment of MCH animals, and thus the entire WCA harvest is referenced in Table 3.

Regulatory		Report	ted harvest		Method of take			
year	Male	Female	Unknown	Total	Trap/snare	Shot	SDA ^a	Unknown
2015	10	13	1	24	13	11	0	0
2016	39	26	3	68	27	36	3	0
2017	48	37	3	88	2	56	30	0
2018	18	10	0	28	3	18	7	0
2019	42	37	2	81	2	59	18	2

Table 2. Wolf take by method, Unit 17, Southwest Alaska, regulatory years 2015–2019.

^a SDA refers to same-day-airborne.

Transport Methods

Snowmachines were the most used mode of transportation for harvesting wolves, accounting for 72% of wolves taken during RY15–RY19 (Table 4). Aircraft were second (18%), followed by all-terrain vehicles, highway vehicles, and boats. There is a small portion of unknown methods of transportation.

Regulatory year	Same-day-airborne removal	Total removal
2015	0	21
2016	3	57
2017 ^a	30	70
2018	11	23
2019	28	76

Table 3. Wolf removal from the wolf control area in Units 9B, 17B, 17C, 19A, and 19B, Southwest Alaska, regulatory years 2015–2019.

^a In RY17, the wolf control area was expanded to include 9,844 square miles.

 Table 4. Unit 17 percent wolf take by transportation method, Southwest Alaska, regulatory years 2015–2019.

		Dogsled,							
Regulatory		skis, and					Highway		
year	Aircraft	snowshoes	Boat	ATV ^a	Snowmachine	ORV ^b	vehicle	Unknown	n ^c
2015	0	0	0	12	88	0	0	0	24
2016	7	0	0	1	84	1	4	3	68
2017	26	0	0	0	60	0	0	14	88
2018	29	0	3	0	68	0	0	0	28
2019	21	0	0	0	74	0	0	5	81

^a ATV refers to all-terrain vehicles.

^b ORV indicates off-road vehicles.

^c *n* indicates sample size.

Harvest Chronology

Overall, most wolves were harvested in February, followed by March and January (Table 5). This is reflective of longer daylight hours and better snowmachine travel. December and the August to October period are the next most popular harvest periods, with April being the least popular.

Table 5. Unit 17 percent wolf take chronology	by month, Southwest Alaska, regulatory
years 2015–2019.	

Regulatory								
year	Aug-Oct	Nov	Dec	Jan	Feb	Mar	Apr	n ^a
2015	0	0	38	16	46	0	0	24
2016	3	6	10	18	31	32	0	68
2017	2	0	1	5	18	71	3	88
2018	3	0	11	0	32	54	0	28
2019	2	0	1	12	54	31	0	81

^a *n* indicates sample size.

Results and Discussion

During RY15–RY19, there was an increase of approximately 50 wolves taken, as compared to RY10–RY14 (Barten 2018). RY15 was the only year during this report period that harvest, or take, was below 25 wolves. It is unclear whether this was due to poor travel and tracking

conditions or if Unit 17 did not have the population to allow that harvest. The preceding 3 RYs leading to RY15 were on a declining take trend, and 2 of those years did not have take at or above 25 wolves (Barten 2018). In RY17, favorable snow conditions and an expanded WCA boundary facilitated the highest reported wolf take since the first year of the wolf control program. That year, 70 wolves were reported harvested in the WCA, including 9 of the 12 (75%) remaining radiocollared wolves. RY18 was the only year ADF&G met the MCH IM calf-to-cow ratio objective this report period, following the highest SDA wolf take of 30, and WCA take of 70 wolves in the report period. Overall, IM of wolves through SDA appears ineffective at achieving our MCH IM goals of a calf-to-cow ratio of 30:100, as also reported in the prior Unit 17 wolf species management report and plan (Barten 2018).

Recommendations for Activity 2.1

Continue monitoring harvest.

ACTIVITY 2.2: Monitor wolf abundance, distribution, and demographics through incidental observations by department staff, discussions with trappers, hunters, pilots, and hunting guides, and sealing documents to evaluate harvest.

Data Needs

Information from hunters, trappers, guides, pilots, and other outdoor recreationalists can provide useful insight into wolf populations. This is especially true for people who have a long history in an area, as their observations allow for comparison over time. Although, regular survey and inventory methods should be developed for wolves in Unit 17 to allow for more robust monitoring of harvest in context with wolf population estimates.

Methods

Informal discussions with hunters, trappers, etc. are conducted opportunistically. Trappers are interviewed during the sealing process on trapping effort, numbers of wolves taken, location of trapping effort, pack sizes observed, condition of wolves, and other observations they noted.

Results and Discussion

Overall, wolf harvest was highest in Unit 17C. This may be a result of more people residing in the unit and its expanded WCA area, rather than a higher population of wolves in the unit. Hunters reported estimated pack sizes of 1–15 wolves, with an average of 5 wolves in a pack. Over RY15–RY19, 43% of harvest was female, 54% was male, and the remaining 3% were unknown. During this report period, reports from local residents suggest wolf numbers are stable to decreasing.

Recommendations for Activity 2.2

Continue with informal discussions with avid outdoor enthusiasts to gain their insight into wolf population characteristics and trends in wolf abundance.

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities were completed to directly benefit wolves during RY15–RY19.

Alaska Board of Game Actions and Emergency Orders

In 2017, BOG authorized an expansion of WCA from 2,870 mi² to 9,844 mi² to include the eastern MCH calving range.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Wolf harvest data and digital copies of sealing forms are stored on an internal database housed on a server³.
- Hard copies of telemetry data sheets are stored in the "Wolf" file cabinet in the ADF&G-Dillingham area wildlife biologist's office.
- Additional information related to wolf management in Unit 17 will be stored electronically on the Dillingham shared drive (O:\Wildlife\DWC\Wolf).

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

During RY15–RY19, wolf take continued to increase where RY17 and RY19 saw the highest wolf removal of the report period, possibly due to an expanded WCA and snow conditions which allowed for tracking and pursuing wolves. Lower wolf harvests in RY15 and RY18 may have been related to the previous high harvests or poor travel conditions. Fluctuation in wolf harvest may be more a reflection of winter travel conditions than changes in wolf abundance, but the reports from ADF&G biologists in RY18 suggest a substantial population reduction following the high RY17 harvest. Reports from local residents for this report period suggest wolf numbers remain stable or decreasing.

Without regular survey and inventory efforts to monitor wolf abundance, our current insight into the wolf population is dependent on incidental observations by department biologists, harvest records, reports from hunters and trappers, SDA participants, and other members of the public. A

³ Digital copies of sealing information are stored here: <u>http://winfonet.alaska.gov/index.cfm</u>.

Unit 17 wolf demography research project was launched in RY17 and collaring efforts lasted until RY19. The ability to determine population size and density was hindered by the removal of radiocollared wolves from the SDA program, limiting the sample size. However, we continue to recommend monitoring the wolf population through MWCs. Adding the activity of deploying radio collars on wolf packs within and adjacent to WCA to assess wolf population parameters and abundance may be more prudent when there is not an active SDA program. While the success of deploying radio collars would be enhanced by deeper snow cover, it is not completely dependent on this factor, though standard abundance estimate surveys are.

The SDA program continues to appear to be ineffective at meeting calf-to-cow MCH IM objectives as also reported in the prior Unit 17 wolf species management report and plan (Barten 2018). Since its implementation between RY11 and RY19, the calf-to-cow objective has been met 3 times. The wolf removal program may be more effective if the area and timing were biologically meaningful in enhancing calf survival. However, the SDA program is entirely dependent on adequate snow cover for tracking and on participation from applicants. Adequate snow conditions were met only a few times during this report period. It was not until RY17 that weather conditions allowed for an increased removal of wolves, but even then, the higher take was largely from local hunters and trappers, rather than the SDA participants. Therefore, we recommend suspending the MCH SDA program for wolves, as take from hunter and trappers is likely sufficient.

II. Project Review and RY20-RY25 Plan

Review of Management Direction

MANAGEMENT DIRECTION

Based on observations by biologists and other outdoor enthusiasts such as hunters, trappers, hunting guides, etc., and the distribution and amount of harvest over time, it appears the existing management direction with associated objectives and goals provides for sound management of wolves in Unit 17. This management strategy is meant to ensure that wolves will persist as part of the natural ecosystem, and it will continue to provide wolf hunting, trapping, and viewing opportunities. In recent years, low snow winters have inhibited the department's ability to accrue wolf density and abundance estimates, which are important aspects of wolf management, but we will continue to strive to gather these data. This important information will help to ensure the long-term sustainability of the Unit 17 wolf population and that statewide goals (ADF&G 2002) for human uses of wolves can be met.

GOALS

- Ensure the long-term conservation of wolves in Unit 17.
- Provide for a broad range of human uses and values of wolves.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Although there is a positive customary and traditional use finding for wolves in Unit 17, the board has not set an amount necessary for subsistence level.

Intensive Management

IM wolf population objectives for MCH in WCA:

- Annually reduce the number of wolves within WCA to a level which results in increased calf survival in caribou calving areas within Units 9B, 17B, 17C, 19A, and 19B. Increased calf survival is monitored through fall calf-to-cow ratios, with the MCH IM calf-to-cow ratio objective of 30:100.
- The IM plan was initially approved for 6 years and scheduled to end in 2017; however, due to most of the IM objectives not yet being met by 2017, the department requested that the board reauthorize this program for an additional 6 years, extending through to 2024, which coincides with the region's 3-year board cycle. This plan authorizes the department to issue permits to public pilot and gunner teams to practice SDA methods of take. These permits allow for land-and-shoot taking of wolves and/or aerial shooting by a backseat gunner.

MANAGEMENT OBJECTIVES

Maintain a wolf population in Unit 17 that will sustain an annual harvest of at least 25 wolves. This objective is reasonable, though the environmental conditions which affect winter travel, and thus harvest success, often dictate whether it is met, independent of wolf abundance. The level of wolf harvest in relation to this objective should be scrutinized with the help of other information, such as data associated with access and effort, to provide the necessary insight when interpreting harvest levels. However, with environmental conditions limiting the department's ability to conduct routine surveys to estimate abundance or density, this harvest-based objective is the most practical approach. The historical levels of harvest suggest that wolf abundance in Unit 17 can sustain this level of harvest annually.

The IM objective of reducing wolves within WCA that results in increased calf survival has been a hard objective to meet. The aerial predator control program is entirely dependent on adequate snow cover for tracking and on participation. Such snow conditions were met only a few times during RY10–RY14, but it was not until RY17 that conditions allowed for high wolf take within the WCA or by SDA participants. However, even then, success was due mostly to local hunters and trappers rather than to the aerial predator control program.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Determine wolf population estimates.

Data Needs

During RY15–RY19, the department saw consecutive low snow years. It may be unrealistic to expect to conduct wolf surveys using snow tracking-based methodology on a regular basis, let alone every year. Although we hope for sufficient weather conditions to conduct SUPE surveys, or other track surveys, this may be unrealistic given the changing weather patterns which do not allow for adequate and consistent snow conditions.

An estimate of wolf abundance is needed to evaluate the success of wolf removal in WCA and to determine the level of wolf removal required to improve calf survival sufficient to meet IM objectives for fall recruitment, population, and harvest objectives.

Methods

In the absence of adequate snow conditions, deploying radio collars on wolves to collect data on wolf demography, pack size, distribution, seasonal range in relation to caribou movements and calving locations, and other biologically important factors, would help to assess the characteristics of wolves in Unit 17. Additionally, collared wolves will be used to derive density and/or abundance estimates of wolves in portions of WCA. An important part of a successful IM program is to monitor the change in density of predators relative to wolf harvest to measure success of the program and to help interpret changes in prey survival and abundance. However, as seen during this report period, maintaining an adequate sample size of collared wolves for this objective is difficult, even in years with acceptable snow levels and with an active SDA wolf removal program.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor the wolf harvest through field observations, fur sealing reports, trapper questionnaires, and contact with trappers and hunters.

Data Needs

Monitoring, collecting, and analyzing harvest data is critical for sustained yield management and determining combined harvest from IM programs, hunters, and trappers. Harvest distribution also indicates minimum distribution of wolves across the unit. Harvest data are used to verify that the wolf population is sufficient to sustain a harvest of 25 wolves per year. In lieu of consistent survey data for estimating wolf abundance, harvest information does provide some insight into the distribution and abundance of wolves.

Methods

Hunters, trappers, and SDA permittees are required to seal harvested wolves within 30 days of season end to allow the department to monitor the wolf harvest in a timely manner. Data from

sealing include pack size, color of wolves harvested, harvest location and month, hunter and trapper method of harvest, and transportation used. These data are compiled and stored in WinfoNet. Harvest is reported and compiled by RY.

3. Habitat Assessment-Enhancement

No activities for wolf habitat assessment or enhancement are expected for Unit 17 wolf management during RY20–RY24.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

There were no nonregulatory management problems this report period. Wolf population and other data continue to be needed to better understand population dynamics, effect of removal, and predator-prey interactions.

Data Recording and Archiving

- Wolf harvest data and digital copies of sealing forms are stored on an internal database housed on a server.
- Hard copies of telemetry data sheets are stored in the "Wolf" file cabinet in the ADF&G-Dillingham area wildlife biologist's office.
- Additional information related to wolf management in Unit 17 will be stored electronically on the Dillingham shared drive (O:\Wildlife\DWC\Wolf).

Agreements

None.

Permitting

None.

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