Wolf Management Report and Plan, Game Management Unit 11:

Report Period 1 July 2010–30 June 2015, and

Plan Period 1 July 2015–30 June 2020

Heidi L. Hatcher

2018

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 area, 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 website.

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

Species management reports and plans are available via the Alaska Department of Fish and Game's website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game, 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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Cover photo: A pack of 12 wolves enjoys the sunshine in Unit 11, Southcentral Alaska. ©2017 ADF&G. Photo by Heidi L. Hatcher.

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Purpose of this Report

This report provides a record of survey and inventory management activities for wolf (*Canis lupus*) in Unit 11 for the previous 5 regulatory years (RY; RY10–RY14) and plans for survey and inventory management activities in the 5 years following the end of that period (RY15–RY19). A regulatory year 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 them of wildlife management activities. In 2016 the Alaska Department of Fish and Game's (ADF&G) Division of Wildlife Conservation (DWC) launched this 5-year report to more efficiently report on trends and describe potential changes in data collection activities over the next 5 years. It replaces the wolf management reports of survey and inventory activities that were previously produced every 3 years and supersedes the 1976 draft Alaska wildlife management plans (ADF&G 1976).

I. RY10–RY14 Management Report

Management Area

Unit 11 (32,041 km^2; 12,371 mi^2), Southcentral Alaska, consists of that area draining into the headwaters of the Copper River south of Suslota Creek and the area drained by all tributaries into the east bank of the Copper River between the confluence of Suslota Creek with the Slana River and Miles Glacier (Figure 1). Most of Unit 11 is included in the Wrangell–St. Elias National Park and Preserve (NP&P).

Unit 11 includes portions of 3 of Alaska's 32 ecoregions: the Wrangell Mountains, the Chugach–St. Elias Mountains, and the Copper River Basin (ADF&G [n.d.]). Unit 11 boundaries and special management areas can be found at http://www.adfg.alaska.gov/index.cfm?adfg=maps.main.

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

In December 1978, the establishment of the Wrangell–St. Elias National Monument encompassed most of Unit 11. In 1980, monument status was changed to park and preserve with passage of the Alaska National Interest Lands Conservation Act.

Unitwide wolf population estimates began in 1985, the same year the National Park Service (NPS) prohibited the land-and-shoot taking of wolves on park lands. Prior to 1985, aircraft was the most commonly used method of transportation for wolf hunters and trappers in Unit 11 due to the remote nature of the area. As such, average wolf harvest in Unit 11 has remained slightly lower than pre-1985 levels.

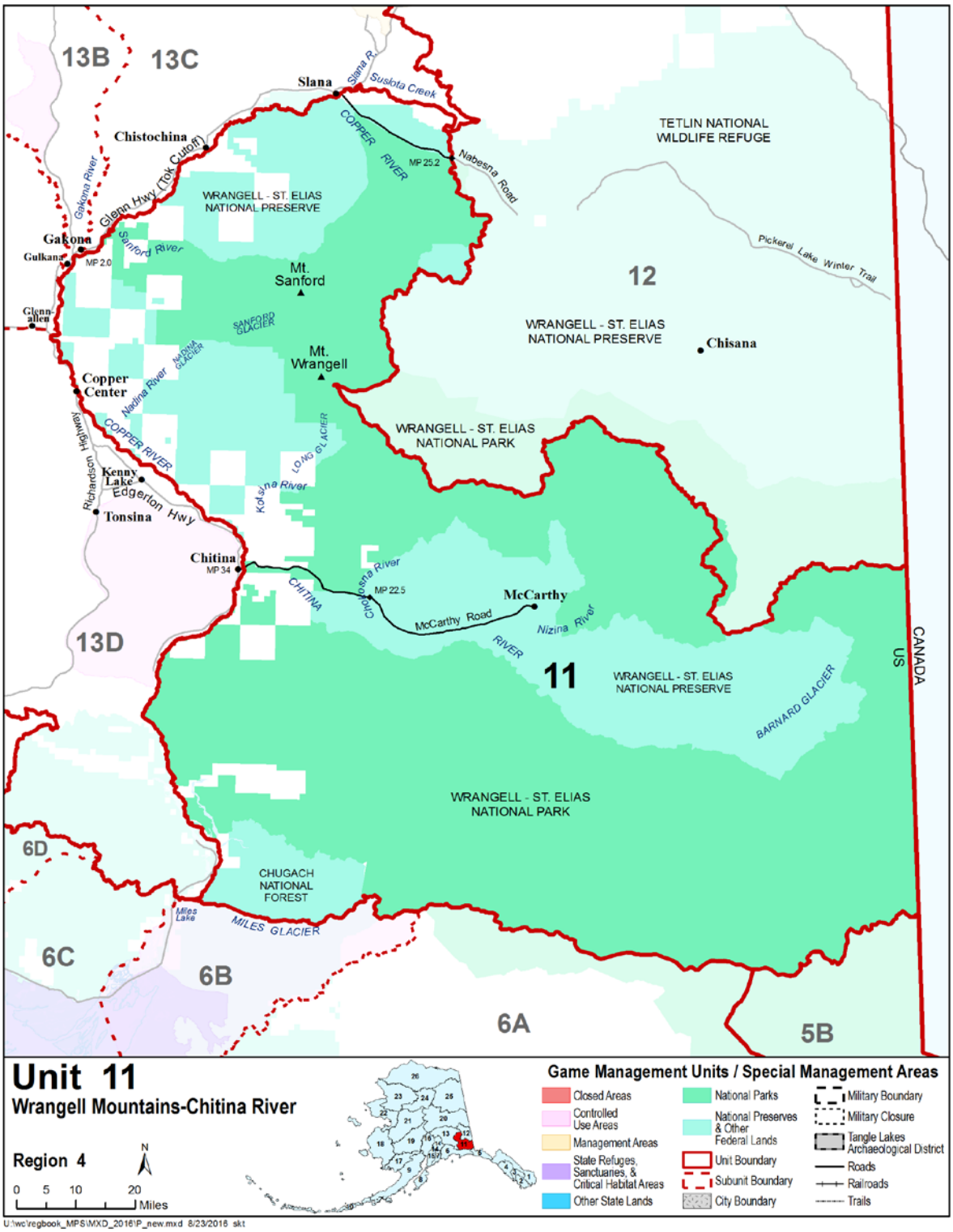

Figure 1. Game Management Unit 11, Southcentral Alaska.

The fall wolf population estimate through the late 1980s averaged 150 wolves. During that time period, Unit 11 experienced extremely deep snowfall and moose (*Alces alces*), caribou (*Rangifer tarandus*), and Dall sheep (*Ovis dalli*) numbers declined. Wolf numbers followed; predator and prey numbers in Unit 11 have remained in a low-density dynamic equilibrium since the mid-1990s.

Management Direction

Wolves are recognized as an integral part of the ecosystem throughout Unit 11 and are managed to provide for a wide variety of human uses and values, including hunting and trapping (for personal or commercial use of hides), photography, viewing, listening, and scientific research (ADF&G 2002).

Existing Wildlife Management Plans

- Direction, goals, and guidelines from the Alaska Wildlife Management Plans: Southcentral Alaska (ADF&G 1976) have been utilized by the department over the years to provide guidance when informing the Alaska Board of Game.

Goals

- Ensure enough wolves remain within Unit 11 to contribute to the health of the ecosystem while providing for the broadest possible range of human uses.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Uses

- The Unit 11 wolf population has a positive customary and traditional use determination. The unitwide amount reasonably necessary for subsistence is 5–10 wolves.

Intensive Management

There are no intensive management programs authorized for Unit 11.

Management Objective

- Maintain a minimum spring population of 75 wolves (2.3 wolves/1,000 km^2; 6.1 wolves/1,000 mi^2).

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Estimate the spring wolf population using anecdotal staff and pilot observations, public reports, NPS survey results, and harvest data–sealing records (objective 1).

Data Needs

An estimate of wolf abundance is necessary to verify that a minimum number of wolves persist in Unit 11.

Methods

Annually, we contact area pilots, trappers, and individuals known to spend a significant amount of time on the landscape in Unit 11, and request that they report any wolf sightings or fresh tracks that are observed throughout the winter. Observations by the members of the public are recorded, as are sightings by staff during annual moose surveys. When available, wolf survey data from the NPS are included to determine a population estimate. Data are categorized by type (actual wolf sightings or tracks), pack size, individual pelt colors, geographic location, date, and name of observer. Observations are plotted in mapping software in an attempt to identify individual wolf packs and to consolidate multiple observations of any single pack.

At the end of winter and the conclusion of hunting–trapping season, a review of wolf sealing data is conducted. Data captured on harvest sealing records, including harvest location and estimated pack size, are compared to individual packs identified previously. If it is suspected that harvested wolves correspond to previously identified packs, the harvested wolves are subtracted from the members of the observed pack. Wolf packs identified through sealing records, but not documented through earlier observations or not subsequently harvested, are added as new observations. The final comprehensive observations, minus harvest, are used to estimate the spring wolf population for Unit 11.

Results and Discussion

Spring wolf population estimates in Unit 11 have been relatively stable, ranging from 63 to 107 (2–3.3 wolves/1,000 km^2; 5.1–8.6 wolves/1,000 mi^2) since the early 1990s (Table 1). Wolf numbers are generally higher in the northern portions of the unit, from the Dadina River northeast to Tanada Lake, presumably due to higher densities of caribou and sheep in this area. Anecdotal reports suggest that some wolves move out of Unit 11 into Unit 12 during the winter to prey upon migrating Nelchina caribou.

Insufficient data were available to develop wolf population estimates for 2013 or 2014. Due to limited access and restricted hunting–trapping regulations within Wrangell-St. Elias National Park, wolf populations within Unit 11 are relatively protected.

Table 1. Unit 11 fall and spring wolf population estimates, Southcentral Alaska, regulatory years[a] 2010–2014.

Regulatory	Population estimate[b]		
year	Fall[c]	Spring[d]	Packs
2010	100	92	18
2011	99	84	17
2012	69	65	12
2013[e]			
2014[e]			

[a] A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.
[b] Population estimates are derived through incidental observations, anecdotal reports, sealing records, and National Park Service wolf surveys when available.
[c] Fall estimate = pretrapping season population.
[d] Spring estimate = posttrapping season population.
[e] Insufficient data available.

Recommendations for Activity 1.1

Modify: Due to the vast amount of NPS lands within Unit 11, coordinating with Wrangell–St. Elias NP&P to utilize NPS surveys and develop minimum wolf counts or wolf population estimates for the park and preserve is the optimal strategy for monitoring wolf population status and trend in Unit 11. Anecdotal observations and harvest information from lands outside of the park and preserve can be utilized to supplement the park and preserve wolf estimates if less than 75 wolves are estimated within NPS lands.

2. Mortality–Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor harvest through sealing records.

Data Needs

Wolf harvest data are 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.

Methods

Harvested wolves are required to be sealed in Unit 11. Through this process, the data collected for each wolf harvested includes name of harvester, location of kill, method of take, month of take, method of transportation, sex of the wolf, color of the pelt, and estimated number of wolves in the pack. These data are entered and stored in databases accessible through ADF&G's Wildlife Information Network (WinfoNet), from which the data can be queried and analyzed when needed. Harvest is reported by regulatory year.

While some wolf harvest may go unreported, Alaska wolves cannot be sold commercially nor professionally tanned without being sealed. Unreported harvest of wolves in Unit 11 is suspected to be minimal.

Season and Bag Limit

Units and Bag Limits	Resident Open Seasons	Nonresident Open Seasons
Unit 11		
Hunting: 5 wolves.	10 Aug–30 Apr	10 Aug–30 Apr
Trapping: No limit.	10 Nov–31 Mar	10 Nov–31 Mar

Sport hunting and trapping is not permitted in Wrangell–St. Elias National Park, although it is allowed in the preserve without the use of aircraft. Under federal subsistence hunting regulations, federally qualified subsistence users (residents of Units 6, 9, 11, 12, 13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, Chickaloon, and Unimak Island) can harvest a limit of 10 wolves on most federal lands in Unit 11 between 10 August and 30 April. These users can also trap an unlimited number of wolves on most federal lands 10 November–31 March. Within Wrangell–St. Elias National Park, these regulations apply only for NPS-qualified subsistence users.

Results and Discussion

Harvest by Hunters–Trappers

Hunters and trappers reported harvesting 5–15 wolves annually (annual average = 10 wolves) in Unit 11 during RY10–RY14 (Table 2). This is down from the average of 20 wolves harvested annually during RY05–09. The average of 7 successful trappers in Unit 11 during RY10–14 was also lower than the average of 11 trappers during RY05–RY09. Compared to historic data and anecdotal reports, RY10–RY14 experienced a trend toward less annual snow and less reliable freeze-up of the Copper River, which may have affected access in Unit 11 for wolf harvesters (Fisher [n.d.]). In addition, implementation or suspension of aerial wolf control in adjoining Unit 13 may affect hunter effort during the corresponding year in Unit 11.

Table 2. Unit 11 wolf harvest, Southcentral Alaska, regulatory years[a] 2010–2014.

Regulatory	Reported harvest				Method of take			Successful
year	M	F	Unk	Total	Trap/snare	Shot	Unk	harvesters
2010	4	4	0	8	5	2	1	7
2011	6	8	1	15	7	7	1	11
2012	5	10	0	15	10	5	0	9
2013	3	2	0	5	5	0	0	3
2014	4	4	0	8	6	2	0	5

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

Harvest Chronology

Wolf harvest in Unit 11 generally occurs throughout the open season, with the majority of harvest occurring in January and February (Table 3). A significant portion of the harvest often occurs in September as well, presumably as incidental take during moose hunting excursions.

Transport Methods

Although aircraft are not permitted for hunting or trapping within Wrangell–St. Elias National Park, aircraft are utilized by successful wolf harvesters in Unit 11 nearly every year on lands outside of the park. Snowmachine is the most common transportation method for wolf hunters and trappers, followed by aircraft (Table 4).

Alaska Board of Game Actions and Emergency Orders

There were no Alaska Board of Game actions or emergency orders for wolves during this reporting period.

Recommendations for Activity 2.1

Continue.

3. Habitat Assessment–Enhancement

Currently, there are no activities conducted or planned for habitat assessment or enhancement in Unit 11.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Wolf sealing–harvest data are stored on an internal server (http://winfonet.alaska.gov/index.cfm).
- Wolf survey information is stored electronically on the Glennallen Area Biologist's hard drive, associated back-up drives, and are published in species wildlife management reports. These reports are available online at: http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifemanagement.

Agreements

A data sharing agreement is in place to share wolf (and other species) harvest data between ADF&G and Wrangell–St. Elias NP&P for RY90–RY20 (Appendix A).

Permitting

Currently there are no permits in place regarding wolves in Unit 11.

Table 3. Unit 11 wolf harvest percent chronology by month, Southcentral Alaska, regulatory years[a] 2010–2014.

Regulatory year	Harvest percent chronology by month									
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	*n*
2010	13	13	0	0	0	50	0	25	0	8
2011	7	33	0	13	13	7	7	0	20	15
2012	7	27	0	0	7	20	13	20	7	15
2013	0	0	0	0	20	0	60	20	0	5
2014	0	25	0	25	0	0	50	0	0	8

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

Table 4. Unit 11 wolf percent harvest by transport method, Southcentral Alaska, regulatory years[a] 2010–2014.

Regulatory year	Percent harvest by transport method								
	Airplane	Dogsled, Skis, Snowshoes	Boat	3- or 4-Wheeler	Snowmachine	ORV[b]	Highway vehicle	Unk	*n*
2010	25	0	0	0	38	0	38	0	8
2011	14	7	0	21	57	0	0	0	15
2012	27	0	0	0	67	0	7	0	15
2013	0	0	0	0	100	0	0	0	5
2014	63	0	0	13	25	0	0	0	8

[a] A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.
[b] ORV = off-road vehicles.

Conclusions and Management Recommendations

The wolf population and harvest in Unit 11 remains relatively stable due to the low-density dynamic equilibrium predator–prey situation and the large expanse of relatively protected NPS land within the unit, which limits hunting and trapping pressure. During this reporting period, spring population estimates averaged 80 wolves (2.5 wolves/1,000 km^2; 6.5 wolves/1,000 mi^2) and harvest levels ranged from 8% to 22% of estimated fall populations. These harvest levels are well below the 29% of a wolf population that can be harvested by human take before population decline is generally observed (Adams et al. 2008). The RY12 estimate of 65 wolves (2 wolves/1,000 km^2; 5.3 wolves/1,000 mi^2) was below the management objective, which is more likely an effect of lack of information and reports regarding wolves in Unit 11 than a reflection of population trends. Failure to meet the spring population objective will not independently trigger a management action. No action is currently recommended, other than to improve wolf population estimates through NPS collaboration.

To improve public participation and support of effective wolf management in the state of Alaska, it is necessary to increase awareness and understanding of the uses, conservation, and management of wolves, their prey, and their habitat. Management goals and objectives should be modified to support this endeavor.

II. Project Review and RY15–RY19 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The existing management direction and goal for Unit 11 remain appropriate within the context of statewide goals (ADF&G 2002), as well as within the frameworks of sustained yield and species conservation. There is no evidence that the long-term sustainability of wolves in Unit 11 will be compromised by the current management direction or goal.

GOALS

Upon review of the 1976 Alaska wolf management plan (ADF&G 1976), an additional goal and subsequent management activity is recommended for wolf management in Unit 11:

- Increase public awareness and understanding of uses, conservation, and management of wolves, their prey, and habitat in Alaska. Wolves are a controversial species in Alaska, given their importance to consumptive and nonconsumptive user groups throughout the state. To dampen public conflict and encourage participation in the public process of wildlife management in Alaska, it is essential to increase public awareness and understanding of the ecological importance of wolves, their varied uses and values among Alaska's user groups, and the department's goals, tools, and limitations in managing the species.

CODIFIED OBJECTIVES

No change recommended.

Amounts Reasonably Necessary for Subsistence Uses

No change recommended.

Intensive Management

No change recommended.

MANAGEMENT OBJECTIVE

- Maintain a minimum spring population of 75 wolves (2.3 wolves/1,000 km^2; 6.1 wolves/1,000 mi^2).

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Collaborate with NPS to develop minimum wolf count (MWC; Gardner and Pamperin 2014) surveys on NPS lands during years when more intensive wolf surveys are not conducted.

Data Needs

MWC surveys on NPS lands will provide a base number of wolves from which a minimum population estimate for Unit 11 can be determined to ensure that the population objective is being met annually, and that wolf numbers do not drop below sustainable population levels. Should MWC results drop below the management objective for 2 years in a row, a sample unit probability estimator will be attempted to determine a precise estimate of the Unit 11 population (Becker et al. 1998).

Methods

ADF&G will collaborate with Wrangell–St. Elias NP&P to incorporate MWC surveys during years that NPS does not conduct more intensive wolf surveys within the park and preserve. Surveys will be conducted as described by Gardner and Pamperin (2014; Appendix B).

ACTIVITY 1.2. Utilize survey results, combined with incidental observations, anecdotal reports, and harvest data, to refine an annual wolf population estimate for Unit 11.

Data Needs

An estimate of the posthunting–posttrapping season wolf population for Unit 11 is necessary to determine if the minimum number of wolves remain in Unit 11, and to determine if harvest numbers remain within sustainable levels.

Methods

NPS survey data will provide a minimum wolf count for NPS lands. Survey results combined with agency wolf observations, public reports, and sealing data for all of Unit 11 will be analyzed and utilized to develop an annual spring wolf population estimate as described previously.

2. Mortality–Harvest Monitoring

ACTIVITY 2.1. Monitor harvest through sealing records.

Data Needs

Wolf harvest data are 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.

Methods

Harvested wolves will continue to be sealed, and sealing information will be entered and stored in databases accessible through WinfoNet. Sealing data will be queried and analyzed annually, or more frequently as needed.

3. Habitat Assessment–Enhancement

No change recommended.

4. Public Awareness and Understanding of Wolves, their Prey, and Habitat

ACTIVITY 4.1. Engage in public interface and outreach.

Methods

Attend local advisory council meetings, when staffing and resources allow, to provide information on the biology, ecology, and management of wolves and their prey when questions, concerns, or misinformation arise. Engage in outreach opportunities with local agencies, organizations, and school groups to increase youth exposure to information on wolves, predator–prey ecology, and wildlife management in Alaska.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Wolf sealing–harvest data are stored on an internal server (http://winfonet.alaska.gov/index.cfm).
- Wolf survey information is stored electronically on the Glennallen Shared Drive (O:\DWC\BGDIF\Fur\Core Fur Files\Wolf) and published in species wildlife management reports. These reports are available online at http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifemanagement

Agreements

A data sharing agreement is in place to share wolf (and other species) harvest data between ADF&G and Wrangell–St. Elias NP&P for RY90 through RY20 (Appendix A).

Permitting

None.

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Appendix A. Data sharing agreement between Alaska Department of Fish and Game and Wrangell–St. Elias National Park and Preserve, 2016.

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

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

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

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

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

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

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

Appendix B. Wolf census form

WOLF CENSUS FORM

Date _____ *GMU* _____ *Aircraft Hours* _____

Pilot _____ Observer _____

Snow Age	Snow Cover	Light Type	Light Intensity	Predominant Habitat in SU	Survey Rating
1. 1-2 days	1. Complete	1. Bright	1. High	1. OPEN lower elev.shrubs/wetland	A. Excellent
2. 3-4 days	2. Some low veg showing	2. Flat	2. Medium	2. DECIDUOUS FOREST birch, aspen	B. Good
3. 5-6 days	3. Bare ground showing		3. Low	3. MIXED FOREST	C. Fair
4. 7+ days				4. OPEN CONIFEROUS FOREST	D. Poor
				5. DENSE CONIFEROUS FOREST	
				6. SUB-ALPINE SHRUB	
				7. BURN	

PACK INFORMATION

Ref. No.	SU track 1st spotted	Time 1st spotted	SUs containing tracks	SU w/ wolves	Time tracking ended	Pack size	Wolf colors	In/ Out	Comments/Pack Waypoint
1									
2									
3									


ALASKA
DEPARTMENT OF FISH AND GAME