Wolf Management Report and Plan, Game Management Unit 3:

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

W. Frank Robbins



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This species management report and plan was reviewed and approved for publication by Thomas V. Schumacher, Regional Supervisor for Region I for the Division of Wildlife Conservation.

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Purpose of this Report

This report provides a record of survey and inventory management activities for wolves (Canis *lupus*) in Game Management Unit 3 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-RY19 Management Report

Management Area

Game Management Unit 3 is an area of approximately 3,000 mi² (7,800 km²) on islands in the central portion of Southeast Alaska (Fig. 1) and falls within Region I. Kupreanof, Kuiu, Etolin, Wrangell, Mitkof, and Zarembo, in descending order, are the largest islands in the unit. Smaller islands include several near the mouth of the Stikine, such as Rynda, Kadin, and Sokolof.

Most land area in Unit 3 is within the Tongass National Forest and managed by the U.S. Forest Service (USFS), with smaller parcels under tribal, state, and private ownership. Sitka black-tailed deer (Odocoileus hemionus sitkensis), moose (Alces alces andersoni), wolves (Canis lupus ligoni), and black bears (Ursus americanus) are present and widely distributed throughout Unit 3. A small number of brown bears (Ursus arctos) also occur on islands that are separated from the mainland by short water crossings.

Elevation within Unit 3 ranges from sea level to 3,937 ft (~1,200 m). Predominant vegetative communities occurring at low to moderate elevations (<1,509 ft or 460 m) include Sitka spruce (Picea sitchensis), western hemlock (Tsuga heterophylla), coniferous forests, mixed-conifer muskeg, and deciduous riparian forests. Forests dominated by mountain hemlock (Tsuga mertensiana) comprises a subalpine, timberline band occupying elevations between 1,509 and 2,493 ft (460 and 760 m).

Summary of Status, Trend, Management Activities, and History of Wolves in Unit 3

Evidence suggests that wolves colonized Unit 3 from the south following the retreat of glaciers and establishment of a prey base, including Sitka black-tailed deer. Deer are the primary prey for wolves in Southeast Alaska, with moose and mountain goats important in some areas. With the recent increase in distribution and abundance of moose in Unit 3, they are an increasingly important food source for wolves.

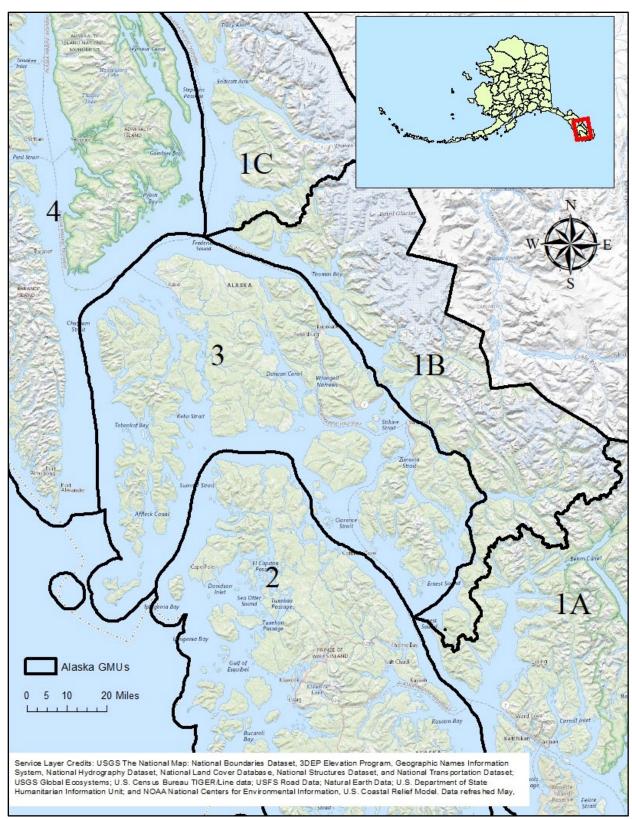


Figure 1. Map of Game Management Unit 3, Southeast Alaska, regulatory years 2015– 2019.

Because of the relatively short water crossings involved, ADF&G biologists theorize that wolves commonly move between the mainland and adjacent Unit 3 islands, and between islands.

Government wolf control programs and bounties have been maintained since before Alaska's 1959 statehood and into the 1970s in an effort to increase deer numbers following a series of severe winters and resulting deer die-offs in the early 1970s. However, deer numbers remained low for many years, and the average annual wolf harvest in Unit 3 during the 1980s also remained relatively low, at 13 wolves per year. Moose began colonizing Unit 3 islands in the late 1970s and continued to expand their range and abundance. Moose represent an alternate prey item for wolves, and their increased abundance, along with relatively high deer abundance in the 1990s, likely allowed wolves to increase their numbers. During the 1990s, ADF&G increased the Unit 3 average annual wolf harvest to 43 per year, and by the 2000s, they further increased it to 49 wolves per year. Prior to 2011, the harvest of 73 wolves by 41 individuals in RY02-RY03 represented the highest wolf harvest in Unit 3 since at least 1979. Harvests of 96 wolves were recorded in RY11 and 92 wolves in RY13. The expanding moose population likely allowed wolves to maintain high numbers, despite a decline in deer abundance following a series of severe winters during 2006–2009.

From 1997 to 2002, hunters and trappers were required to leave the left foreleg naturally attached to the hide of any wolf taken in Units 1–5 until the time of sealing. During the sealing process, the foreleg bone was removed and submitted for use in evaluating the percentage of adults and subadults in the unitwide annual harvest. During these years, the percentage of adult wolves taken in the harvest ranged 32–58% annually, with an annual mean of 48%.

In fall 2002, due to concerns about early and late season pelt quality and harvest of wolves during the denning period, the Board of Game (board) shortened the Region I wolf hunting season by closing the months of August and April to wolf hunting in Unit 3. The board also shortened the wolf trapping season by closing the month of April. These actions are primarily responsible for the reduced wolf harvest in Unit 3 during RY03 and RY04.

In fall 2004, the board rescinded its decision to shorten the wolf hunting season and restored the 1 August–30 April wolf hunting season in not just Unit 3, but throughout Region I. The board also restored the month of April to the wolf trapping season.

In the fall of 2010, based on concerns about low deer numbers in Unit 3, the board extended the wolf hunting season from ending on 30 April to end on 31 May. At the request of the department, the regulation change was expedited, and the wolf season extension took effect on 1 May 2011. While the department had opposed previous attempts to extend the wolf hunting season to the end of May, the concerns about low deer numbers prompted the department to support the extension.

In March 2013, the board authorized an operational plan for intensive management (IM) of Sitka black-tailed deer in a 648 mi² (1,678 km²) portion of Unit 3 consisting of Mitkof and Woewodski islands and the Lindenberg Peninsula on Kupreanof Island (ADF&G 2013). Active wolf control was never implemented, and the Unit 3 IM plan has since expired. The department continues to develop and refine techniques for measuring changes in deer abundance, which in the past has encouraged trappers to increase their efforts in the unit.

Today, only a few recreational trappers and opportunistic hunters harvest wolves in Unit 3. In recent years, there has been growing interest in wolf hunting by nonresident hunters, and some big game guides now offer wolf hunts in Unit 3. While wolf densities are higher in Unit 3 than in interior regions of Alaska, viewing opportunities are limited due to the dense forest cover.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Management objectives and activities have been reviewed and modified through public comments, staff recommendations, and board actions over the years. A record of these changes can be found in the division's management report series. The plan portion of this report contains the current management plan for wolves in Unit 3.

GOALS

Maintain a sustainably harvestable wolf population in all areas of the species' historic range.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The board has made a positive customary and traditional use determination for wolves in Unit 3; however, the amount necessary for subsistence has not been established. Because there is no resident subsistence hunt for wolves, the resident wolf hunting season in Unit 3 is classified as a general hunt.

Intensive Management

The board has identified Unit 3 deer as important for providing high levels of harvest for human consumptive uses. IM (5 AAC 92.108) objectives for deer have been set at 15,000 for population and 900 for harvest.

The board has made a positive customary and traditional determination for Unit 3 moose and set the amount necessary for subsistence at 40 moose per year from Units 1B and 3 combined. No other codified population or harvest objectives have been established for Unit 3 moose.

MANAGEMENT OBJECTIVES

Maintain a sustainably harvestable wolf population in all areas of the species' historic range.

MANAGEMENT ACTIVITIES

In addition to gathering anecdotal information about the Unit 3 wolf population through observations made by ADF&G and USFS biologists, trappers, hunters, and other members of the public, an annual statewide trapper survey asks for each trapper's subjective assessment of wolves in units where they trap.

Wolf harvest is monitored through a mandatory pelt sealing program. Data are collected on the number of wolves killed, sex, date of take, method of take, method of transportation used from home to the field, and when possible, an estimate of the number of wolves accompanying those killed. From RY97 to RY02, the left foreleg from each sealed wolf was collected for age determination, and tissue samples were opportunistically collected for genetic analysis.

During RY15–RY19, hide, hair, tissue samples, and foreleg bones were opportunistically collected from harvested wolves during the sealing process. When possible, wolf carcass weights and condylobasal skull measurements were also obtained.

Observations of wolves made by ADF&G and USFS biologists, trappers, hunters, and other members of the public are reviewed. The annual statewide trapper questionnaire report supplies additional information, including individual trapper's subjective assessment of the population status of wolves in Unit 3.

1. Population Status and Trend

ACTIVITY 1.1. Monitor wolf abundance.

Data Needs

Information on wolf abundance helps evaluate whether harvest is sustainable. Sealing records provided insufficient data to make a meaningful estimate of the Unit 3 wolf population. Current population estimates for Unit 3 wolves are based on inferences derived from wolf research (including radiotelemetry) conducted on neighboring Prince of Wales Island (Unit 2) during the late 1990s (Person et al. 1996). Based on estimates of the average number of wolves in a pack and pack territory size in Unit 2, it was estimated that Unit 3 can support 125–385 wolves in 23 packs. Conversations with trappers, hunters, pilots, and other biologists, along with information from trapper questionnaires, indicated the wolf population increased during the 1990s in response to increasing abundance of deer and moose. More recently, increases in moose distribution and abundance were theorized to have contributed to maintaining wolf densities, which were high despite a decline and slow recovery of the deer population following a series of severe winters during 2006–2008.

Methods

Observations of wolves made by ADF&G and USFS biologists, trappers, hunters, pilots, and other members of the public were considered. Also, an annual statewide trapper survey was conducted which requested each trapper's subjective assessment of the population status of wolves in Unit 3.

Results and Discussion

In response to mail-out questionnaires distributed by the department, individual trappers provided subjective assessments of wolf abundance and distribution in the Southeast Alaska region. Trappers characterized wolves as "scarce" in RY16 but as "common" during the other 4 years of RY15-RY19. Reported wolf sightings provided insights into the size and distribution of wolf packs in the unit.

Recommendations for Activity 1.1.

Continue.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor the wolf harvest through a mandatory pelt sealing program.

Data Needs

Monitoring harvest helps to ensure a harvest rate that remains sustainable. ADF&G biologists infer that the reported wolf harvest underrepresents the actual take of wolves in the unit. An estimate of unreported human-caused mortality is needed.

Methods

Data on the number of wolves killed, sex, date of take, method of take, and method of transportation used from home to the field are collected when wolves are presented for sealing. When possible, an estimate of the number of wolves accompanying those killed is obtained.

Season and Bag Limit

Season and bag limit	Residents and nonresidents
Trapping: No limit	1 Nov–30 Apr
Hunting: 5 wolves (general hunt only)	1 Aug–31 May

Results and Discussion

Harvest by Hunters-Trappers

During RY15–RY19, the Unit 3 wolf harvest averaged 52 wolves per year, ranging from a high of 63 in RY15 to a low of 37 in RY18 (Table 1). This was a decrease from an average of 75 wolves harvested during RY10-RY14. The number of successful trappers and hunters also declined from an average of 34 per year during the previous report period to an average of 19 per year during this report period, ranging from a low of 16 in RY16 to a high of 20 in RY17.

Table 1. Unit 3 Alaska wolf harvest, regulatory years 2010–2019.

Regulatory		Repo	orted harvest		Method of take Successful			Successful
year	Male	Female	Unknown	Total	Trap/snare	Shot	Unknown	trappers/hunters
2010	28	26	0	54	29	25	0	26
2011	49	47	0	96	68	28	0	39
2012	39	33	1	73	49	24	0	42
2013	51	41	0	92	70	22	0	38
2014	36	26	0	62	51	11	0	28
2015	36	26	1	63	53	10	0	19
2016	30	29	0	59	54	5	0	16
2017	33	18	0	51	39	12	1	20
2018	23	14	0	37	23	14	0	19
2019	30	22	0	52	39	13	0	18

Trapping was the primary method of take for wolves in Unit 3. During the report period, 79% of the wolves harvested were taken with traps or snares and 21% were shot. Most wolves harvested by shooting were opportunistically taken by hunters of deer, bear, and occasionally moose.

The greatest percentage of the Unit 3 wolf harvest historically came from Kupreanof, Kuiu, Etolin, and Mitkof islands, and such was the case during this report period.

Harvest Chronology

During RY15-RY19, March, April, February, and January, in descending order, accounted for the highest monthly percentages of the harvest (Table 2). These months also represented the period when most wolves were taken in Unit 3, on average.

Transport Methods

During RY15–RY19, most trappers and hunters reported using small boats, highway vehicles, and 4-wheelers to harvest wolves in Unit 3 (Table 3). Many of the Unit 3 islands, particularly those with established communities, have extensive logging road systems which allow hunters and trappers to use highway vehicles and 4-wheelers for access.

Other Mortality

ADF&G biologists infer that the reported harvest underrepresents the actual take of wolves. It is suspected that poaching of wolves is occurring and that each year, wolves are shot or trapped and not salvaged or otherwise go unsealed. Wolves are difficult animals to bring down, and it is not unreasonable to assume that mortality also occurs due to wolves succumbing to wounds despite being left unharvested. Some wolves, caught in traps which are not checked regularly such as intertidal drowning sets, are occasionally scavenged by other animals. These wolf hides become badly damaged and are discarded in the field, and the harvest is not reported.

Recommendations for Activity 2.1.

Continue this activity.

ACTIVITY 2.2. Collect biological samples from harvested wolves.

Data Needs

Wolf hair and tissue samples are needed to evaluate the genetic structure of wolf populations in the region and to assess the level of interchange between mainland and island populations. Better information regarding the spatial and seasonal variation in wolf diets across the region is also gathered by stable isotope analysis of tissues. In addition to genetic samples, data are needed on wolf body weights and skull measurements to better understand the morphology and subspecies status of wolves inhabiting Southeast Alaska.

Methods

During the sealing process, ADF&G biologists opportunistically collected hair and muscle tissue samples from harvested wolves for DNA analysis and stable isotope diet analysis.

Table 2. Unit 3 Alaska wolf harvest chronology, percent by month, regulatory years 2010–2019.

Regulatory						Percent	of harv	est by M	onth					
year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Unknown	$n^{\rm a}$
2010	0	4	7	4	13	13	16	15	11	13	4	0	0	54
2011	0	0	11	2	3	2	15	17	34	6	9	0	0	96
2012	0	1	7	3	7	11	15	7	22	12	15	0	0	73
2013	0	0	2	7	4	7	14	10	23	26	8	0	0	92
2014	0	2	2	6	3	11	19	13	15	24	5	0	0	62
2015	0	0	3	5	3	3	6	17	48	13	2	0	0	63
2016	0	0	0	2	3	12	12	7	19	46	0	0	0	59
2017	0	2	6	8	0	0	10	25	18	29	2	0	0	51
2018	0	3	13	3	11	11	38	8	3	0	11	0	0	37
2019	0	0	6	8	2	2	9	27	25	21	0	0	0	52

^a n is the sample size.

Table 3. Unit 3 Alaska wolf harvest, percent by transport method, regulatory years 2010–2019.

	Percent of harvest by transport method								
Regulatory			3- or			Highway		_	
year	Airplane	Boat	4-wheeler	Snowmachine	ORV^a	vehicle	Other	n^{b}	
2010	7	56	2	2	0	11	22	54	
2011	0	65	17	1	0	13	4	96	
2012	3	78	6	0	0	12	1	73	
2013	2	78	6	1	2	10	1	92	
2014	0	68	0	0	0	31	1	62	
2015	2	76	3	0	0	19	0	63	
2016	0	76	0	8	2	14	0	59	
2017	0	67	6	0	0	25	2	51	
2018	0	78	0	0	0	22	0	36^{c}	
2019	0	83	0	0	0	17	0	52	

^a ORV stands for off-road vehicle.

^b *n* is sample size, or the number of wolf harvest reports which indicate transportation data for that year. ^c Means of transportation was reported for 36 of the 37 wolves harvested in 2018.

When available, the foreleg bone was also collected from harvested wolves to gain insight into the relative age structure (juvenile, subadult, and adult) of wolves taken by hunters and trappers. Trappers were encouraged to present complete (unskinned) carcasses of wolves to obtain whole carcass weights. When skulls were available, condylobasal measurements were collected for potential use in subspecies classification.

Results and Discussion

Analyses of wolf DNA, diet, and morphology are ongoing for research purposes, and no results are available currently.

Recommendations for Activity 2.2.

Efforts to obtain hair, muscle tissue, and foreleg bones from wolves during the pelt sealing process, and efforts to obtain whole carcass weights and condylobasal skull measurements, should be continued.

Alaska Board of Game Actions and Emergency Orders

There were no board actions or emergency orders issued regarding Unit 3 wolf hunting or trapping during RY15-RY19.

3. Habitat Assessment-Enhancement

No attempt has been made to enhance habitat in Unit 3 specifically for wolves. While primarily intended as a silvicultural practice, wolves would likely benefit from precommercial thinning of second growth stands. This thinning can temporarily enhance forage for deer.

Clearcut logging has occurred extensively in Unit 3 and has converted old-growth conifer forest into early successional vegetation types which temporarily provide abundant forage for moose and deer. These enhanced forage conditions persist for 20–30 years, until regenerating evergreens form a dense single-storied canopy and shade out forage species. These poor forage conditions persist for many decades. To retain some forage production, precommercial thinning and pruning has been performed in many second growth stands in the unit. The resulting forage enhancement typically persists for 10–20 years, after which canopy closure again results in loss of understory vegetation.

Results and Discussion

No wolf habitat assessment or enhancement activities occurred in Unit 3 during RY15–RY20.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

None.

Data Recording and Archiving

• Wolf sealing data were stored electronically in ADF&G's Wildlife Information Network (WinfoNet).

- Images of wolf sealing certificates were stored electronically in WinfoNet.
- Hard copies of wolf sealing certificates were kept on file in the Petersburg area office.

Agreements

There are no agreements with other agencies pertaining to wolf management during RY15– RY19.

Permitting

No permits were needed to conduct wolf management activities in Unit 3 during RY15–RY19.

Conclusions and Management Recommendations

The Unit 3 wolf harvest fluctuates from year to year in response to trapping effort and winter weather conditions. During RY15–RY19, the average harvest of 52 wolves per year in Unit 3 was a slight decrease from the preceding 10-year (RY05–RY14) average harvest of 60 wolves per year. The RY18 harvest of 37 wolves was the lowest since 2007, when 21 wolves were harvested.

After the board's 2010 extension of the wolf season to 31 May, it was expected that the wolf harvest could be increased by affording the annual influx of nonresident black bear hunters the opportunity to take wolves incidental to spring bear hunting. During RY10-RY14, 8% of the wolf harvest was taken during the May season extension, with 88% of those wolves harvested by nonresidents. During this report period, only 2% of the wolves harvested in Unit 3 were taken during the month of May.

In most years, trapping is the primary method of taking wolves in Unit 3, as was the case during this report period. Most of the wolves taken by hunters are harvested opportunistically during hunts for other species. Nonresident hunters, however, consider wolves a highly prized trophy animal, and some big game guides offer guided wolf hunts in the unit. Trapping effort and success fluctuates annually in response to fuel prices and winter weather conditions. Wolf hides from Southeast Alaska are considered to be of relatively poor quality by fur buyers, and there is little financial incentive to harvest these wolves. Most wolf hunting and trapping that occurs in the unit is recreational and is viewed by many as a means of reducing predation on deer and moose populations. Additionally, much of the wolf habitat in GMU 3 is remote and difficult to access for hunting or trapping.

II. Project Review and RY20-RY24 Plan

Review of Management Direction

MANAGEMENT DIRECTION

No changes in management direction are proposed for RY20–RY24.

GOALS

Maintain a sustainably harvestable wolf population in Unit 3.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The board has made a positive customary and traditional use determination for wolves in Unit 3; however, no amount necessary for subsistence has been established. Because there is no resident subsistence hunt for wolves, the resident wolf hunting season in Unit 3 is classified as a general hunt.

Intensive Management

The board has identified Unit 3 deer as important for providing high levels of harvest for human consumptive uses. IM (5 AAC 92.108) objectives for deer have been set at 15,000 for population and 900 for harvest.

The board has made a positive customary and traditional determination for Unit 3 moose and set the amount necessary for subsistence at 40 moose per year from Units 1B and 3 combined. No other codified population or harvest objectives have been established for Unit 3 moose.

MANAGEMENT OBJECTIVES

Continue to maintain a sustainably harvestable wolf population in Unit 3.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitor and document wolf sightings reported by agency biologists and members of the public.

Data Needs

Information on wolf abundance helps evaluate whether harvest is sustainable. Minimal wolf research has occurred in Unit 3; therefore, information is currently lacking on the ecology, abundance, demographics, genetics, and population structuring of wolves in Unit 3.

Methods

Observations of wolves made by ADF&G and USFS biologists, trappers, hunters, pilots, and other members of the public will be considered. Also, an annual statewide trapper survey will again be conducted to request each trapper's subjective assessment of the population status of wolves in Unit 3.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor the wolf harvest through a mandatory pelt sealing program.

Data Needs

Harvest will need to be documented to ensure it is sustainable. An estimate of the extent of unreported human-caused mortality will also be needed.

Methods

Wolf harvest will be monitored through a mandatory pelt sealing program. Data will be collected on the number of wolves killed, sex, date of take, method of take, and method of transportation used from home to the field. When possible, an estimate of the number of wolves accompanying those killed will be requested.

ACTIVITY 2.2. Collect biological samples from harvested wolves.

Data Needs

Wolf hair and tissue samples will be needed to evaluate the genetic structure of wolf populations in the region and to assess the level of population interchange between the mainland and the islands portions of Southeast Alaska. More information will be needed regarding the spatial and seasonal variation in wolf diets across the region. In addition to genetic samples, data will be needed on wolf body weights and skull measurements to better understand the morphology and subspecies status of wolves inhabiting Southeast Alaska.

Methods

Hides, hair, tissue samples, and foreleg bones will be collected from harvested wolves during the sealing process. When possible, ADF&G biologists will also obtain wolf carcass weights and condylobasal skull measurements for subspecies analysis.

3. Habitat Assessment-Enhancement

No activities for wolf habitat assessment or enhancement are expected in Unit 3 during RY20-RY24.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

None.

Data Recording and Archiving

Sealing data will be archived in WinfoNet, and paper copies of sealing forms will be stored in the Petersburg office.

Agreements

There are no agreements with other agencies pertaining to wolf management expected for RY20-RY24.

Permitting

No permits are expected in this period.

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