Furbearer Management Report and Plan, Game Management Units 9 and 10:

Report Period 1 July 2012–30 June 2017

Plan Period 1 July 2017–30 June 2022

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2020

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 five 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 A. Rinaldi, Regional Management Coordinator for the Division of Wildlife Conservation.

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Cover Photo: Ugashik River foxtrot: red fox sibling rivalry. Used with permission from wildlife photographer Ugashik Bob. ©2018 Robert Dreezen.

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Purpose of this Report

This report provides a record of survey and inventory management activities for furbearers in Game Management Units (GMU) 9 and 10 for the previous 5 regulatory years and plans for survey and inventory management activities in the 5 years following the end of that period. 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 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, the department) 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 furbearer management reports of survey and inventory activities that were previously produced every 3 years.

I. RY12–RY16 Management Report

Management Area

Game Management Units: 9 (33,639 mi^2) and 10 (15,798 mi^2).

Geographic Description: Alaska Peninsula, Aleutian Islands, and Pribilof Islands.

Unit 9 consists of the Alaska Peninsula of Southwest Alaska, bounded in the north by the drainages of Lake Clark (Unit 9B) and Tuxedni Bay on Cook Inlet (Unit 9A), on the west by the Kvichak River drainage and Bering Sea, and extending southwest to Isanotski Strait near False Pass Village and Izembek National Wild Refuge (Unit 9D; Fig. 1). Mountains of the Aleutian Range extend down the Pacific coast of the peninsula, providing cool maritime conditions, alpine tundra, heavy precipitation, high winds, and active volcanoes. Boreal forest occurs over much of the northern and central portions of Unit 9 at lower elevations, and coastal plains of rolling tundra extend down the western slope of the peninsula along the Bering Sea. Many of the rivers originating in Unit 9 are spawning habitat for anadromous salmon returning through Bristol Bay.

Unit 10 includes the Aleutian and Pribilof Islands; however, the monitoring of furbearer harvest only occurs on Unimak Island (approximately 1,500 mi^2), the easternmost of the Aleutian Islands extending from the southwestern tip of the Alaska Peninsula. Unimak is the only Aleutian Island with larger indigenous mammals including caribou *(Rangifer tarandus)*, brown bears *(Ursus arctos)*, wolves *(Canis lupus),* wolverine (*Gulo gulo*), river otter *(Lontra canadensis),* and red fox (*Vulpes vulpes*). Arctic fox and caribou were introduced to Adak Island. Unimak Island is volcanic in origin with ongoing volcanic activity. Largely unvegetated habitats of glaciers, snowfields, or ash-flats dominate at elevations over 300m (Pitcher et al. 1990); extensive unvegetated lava flows and cinder blows are also present at lower elevations. The village of False Pass (population approximately 43 (U.S. Census Bureau 2019) is the only occupied human settlement on the island.

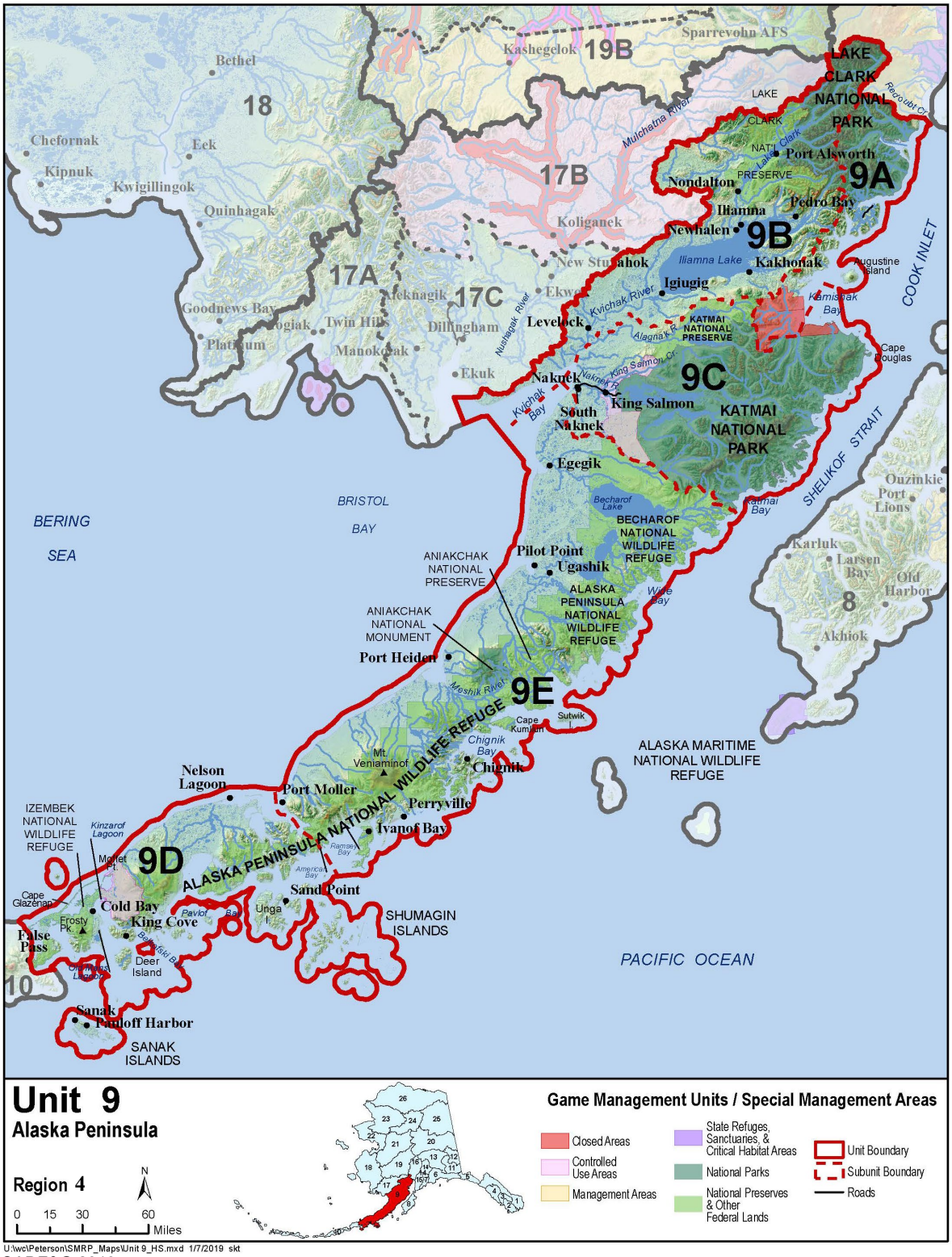

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Figure 1. Map showing Game Management Unit 9 boundaries, Alaska Peninsula, Southwest Alaska.

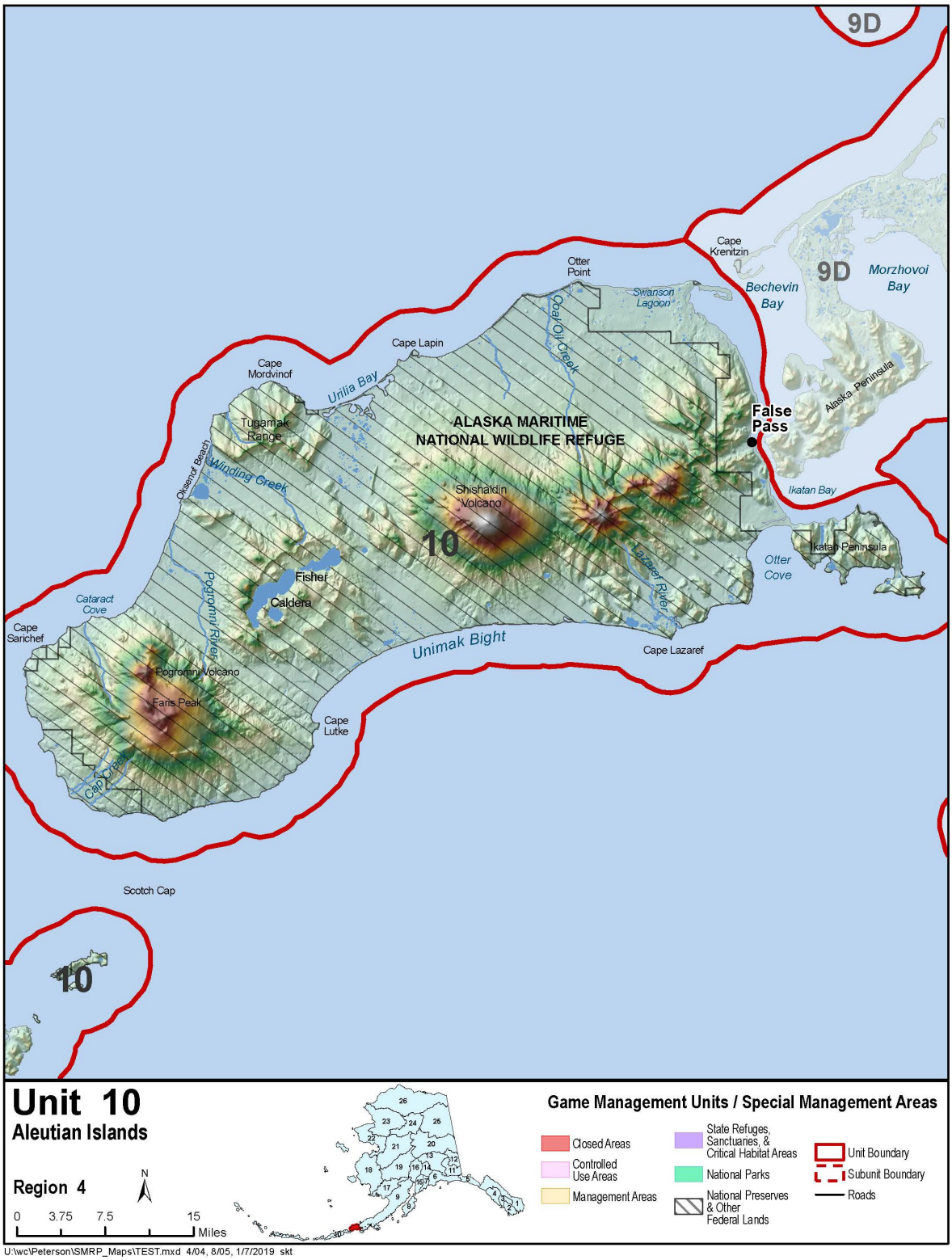

Figure 2. Map showing Unimak Island in Game Management Unit 10 which is the only Aleutian Island where furbearers are currently being monitored by ADF&G.

Summary of Status, Trend, Management Activities, and History of Furbearers in Units 9 and 10

Furbearers in Unit 9 include beaver (*Castor canadensis*), coyote (*Canis lantrans*), red fox, lynx *(Lynx canadensis),* marten (*Martes americana*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), river otter, wolf, and wolverine. In Unit 10, wolves, wolverines, river otters, red fox, and mink have been observed. Arctic fox *(Alopex lagopus)* has been traditionally listed as present on the mainland of Unit 9 and Unimak Island; however, it is thought that the species has been extirpated from the region. On approximately 30–40 islands in Units 9 and 10, furbearers (mostly fox, but also hares, marmots, domestic cats, and ground squirrels) are present largely because of historical introductions to propagate the fur industry or establish harvestable wild populations.

Historical distributions of Arctic and red fox in Units 9 and 10 were drastically affected by human activities to benefit the fur industry. Russian fur traders began introducing foxes to previously fox-free western Aleutian Islands in 1750, culminating in introductions to at least 86 Aleutian Islands between 1750 and 1936 by Russian and American (Alaska Purchase post-1867) fur traders and farmers (Bailey 1993). Most introductions included Arctic fox, particularly the blue phase foxes, because of their greater value in the fur industry. However, in the eastern Fox Islands (including Unimak Island) of the Aleutian chain, where red fox were indigenous, they were widely transplanted to surrounding islands (Bailey 1993). Meanwhile, during the 1880s and through the 1930s, Arctic and red fox were introduced to 65 previously fox-free islands along the south coast (Pacific side) of the Alaska Peninsula. Although some of these earlier red fox introductions were successful, red foxes were sometimes subsequently exterminated to facilitate the introduction of Arctic foxes (Bailey 1993). Fur farming spread through the Kodiak Archipelago, islands of Prince William Sound, and the Alexander Archipelago in Southeast Alaska, and encompassed over 450 islands of coastal Alaska. The fur industry boomed in Alaska during the 1920s, but fur prices began declining in the early 1930s. The industry collapsed in the late 1930s during the Great Depression, and fur prices remained low after World War II, which ultimately resulted in abandonment of all island fox farming by the 1950s.

Of the 65 fox introductions to Alaska Peninsula islands, only about 10 islands continue to support fox, of which 7 support Arctic fox, and some of which have feral cattle or other reliable sources for scavenging in addition to bird colonies (Byrd et al. 1996; Bailey 1993). Islands that may continue to support introduced red fox in Unit 9 include Deer, Dolgoi, and Iliasik; those that may continue to support Arctic fox may include Clifford, Elma, Finneys, Inikla, Little Koniuji, Wanda, and Wosnesenski. Further consultation with the Alaska Maritime Wildlife Refuge (AMNWR) may reveal additional Unit 9 eradications that have not been published. In the Aleutian Islands, AMNWR has eradicated fox from around 48 islands (Ebbert and Byrd 2002; Rozell 2017) since 1949 in response to greatly depleted seabird colonies and an endangered Aleutian cackling goose population (*Branta hutchinsii leucopareia*; Bailey 1993; Buskirk and Gipson 1980; Murie 1959). Fox eradications were very successful in restoring seabird, goose, and other bird populations, but are complicated by the presence of Norway rats (*Rattus norvegicus*) on many islands (Bailey 1993).

Red foxes now occur on the mainland, on some islands south of the Alaska Peninsula, and on the Fox Island group west of the peninsula. Rabies and distemper epidemics occurred periodically in red fox populations in Unit 9, resulting in widespread mortality. During the 1990s and 2000s red fox were reported as either "common" or "abundant" on the annual Alaska Trapper Questionnaire.

Arctic fox are proficient sea ice travelers, and considered to be indigenous to the Pribilof Islands in Unit 10 (Bailey 1993; Isto 2012). Historical reports suggest that Arctic fox arrived intermittently on the southwestern end of the Alaska Peninsula and Unimak Island on pack ice from mainland Alaska to the north (Murie 1959; Osgood 1904). There are no records of Arctic fox being released on Unimak Island (Bailey 1993), which is logical considering the island's large size and indigenous predators (red fox, wolf, and wolverine). Sellers (1990) reported that Arctic fox occurred in a narrow band along the marine coast toward the northwestern shore of Bristol Bay in Unit 9, and on Unimak Island in Unit 10.

We believe that red foxes and wolves extirpated remnant Arctic fox populations on the Alaska Peninsula mainland and Unimak Island through interspecific competition by around 1990. Arctic fox were reported regularly in fur trapper export and dealer acquisition reports through the mid-1980s, and then disappeared from the records. Alaska Trapper Reports since 1989 reported Arctic fox as "scarce" in only 4 years, "not present" in all other years in Unit 9, and none have been seen by ADF&G or U.S. Fish and Wildlife Service (USFWS) staff in recent years. For Unit 10 there were 319 Arctic fox reported as harvested in RY77 (Sellers 1990), and the last record of harvest was 13 Arctic foxes reported in RY90 (Boudreau 1993). It is generally accepted that red fox alone can eliminate Arctic fox through competitive exclusion; indeed, vasectomized red fox males were used to eradicate Arctic fox from at least 2 Aleutian Islands in the 1980s (Bailey 1993). We could expect that 2 additional canid species—wolves on Unimak Island and Alaska Peninsula, and coyotes on the peninsula only—would contribute to the demise of Arctic fox through interspecific competition. These lands are at the southern extreme for sea ice formation in the Bering Sea; pack ice forming near False Pass was much more frequent early in the twentieth century than it is now (Historical Sea Ice Atlas 2018). Therefore, it is unlikely that Arctic fox will return to the region anytime soon.

Beavers primarily occur on the Unit 9 mainland north of Port Moller, from sea level to an elevation of about 2,000 feet. The most productive beaver habitat has been dependable stream flow with limited fluctuation adjacent to abundant and easily accessible willow, aspen, cottonwood, or birch vegetation. Beaver harvest has declined from an annual average of about 460 in the 1970s, to 96 in the 2010s—a decline of 79%. During the same period, the number of trappers sealing fur in Unit 9 declined by about 60%. The reduction in harvest during the 1990s was primarily attributed to reduced prices for beaver pelts, a high cost in both effort and expenses, and a diminished interest in trapping among village residents. Poor trapping and traveling conditions have likely contributed to the more recent reductions in harvest. Beaver do not occupy Unit 10 and none have been sealed there.

Lynx inhabit the mainland north of Port Heiden. Primarily a boreal species, lynx venture onto the tundra in search of microtines (e.g., voles, lemmings) and ptarmigan when prey is scarce. The lynx-hare cycle is well known, and population highs that come every 8 to 11 years can sometimes be predicted. However, Unit 9 is on the fringe of the range for both lynx and

snowshoe hare and the fluctuations for both species are less consistent than elsewhere in Alaska. The last apparent peak, based on harvest, occurred during RY10–RY12 when 64–86 were harvested annually, which was the highest harvest reported since 1982. Lynx do not occur in Unit 10.

Coyotes first arrived in Alaska near the turn of the twentieth century and were rare in much of the state before 1980. They rapidly extended their range and now occur throughout the mainland portion of Unit 9. Relatively few are trapped, and when they are it is usually incidentally to fox, lynx, or wolf trapping efforts. Because coyote sealing is not required, little is known about actual harvest. Coyotes have not been observed in Unit 10.

Marten occur regularly, mostly in parts of Units 9A and 9B, and are occasionally trapped in 9C. The distribution of marten is limited primarily to climax spruce forests from sea level to timberline.

Mink inhabit the mainland of the Alaska Peninsula and Unimak Island. The primary factor affecting mink abundance is microtine populations which fluctuate drastically. An abundance of mice or hares in upland areas will sometimes prompt mink populations to spread inland in search of prey. In some areas, spring flooding may reduce populations by drowning young mink in their dens.

River otters occur on the mainland, some adjacent islands east of the Alaska Peninsula, and Unimak Island. The otter population seems to be stable based on frequent and numerous crossover trails seen from the air. Coastal habitats provide abundant marine foods for otter. In Unit 9 otter harvest reached a peak of 150–160 during 2003 and 2004 but has since declined to between 50 and 60 during the 2010s. No otters have been sealed from Unimak Island since 1989, however, otter sign is abundant on the island and lack of harvest is attributed to absence of otter trappers. Only wolves, which were mostly shot, have been sealed from Unimak Island since 1989.

Wolverines occur on the peninsula and very few on Unimak Island. Compared to other furbearers, wolverines never attain high densities due in part to large territorial requirements and low reproductive rates. An average of 64 wolverines were taken from Unit 9 during regulatory years 1974 through 1994, and 33 during 1995–2002. Since 2003, harvest has averaged 35 wolverines in Unit 9. Recent records of wolverine on Unimak Island are scarce. There is one sealing record for a wolverine shot in 1980, and an observation by a wildlife biologist of a lone wolverine high in alpine snow in 2011 (Dom Watts, USFWS, personal communication).

The number of trappers having furbearers sealed by ADF&G, hereafter referred to as successful trappers, is a useful index for trapping effort; although fox, coyote, mink, and weasel do not require sealing in Units 9 and 10. The number of successful trappers has steadily declined during the last few decades. The average number of successful trappers in Unit 9 was 87 during the 1980s, 58 during the 1990s, 45 during the 2000s and 38 during the 2010s. Peak years were 1986 and 1987 with 112 and 118 successful trappers; the lowest year on record was 2014 with 29 successful trappers (or 0.33 trappers per 1000 km^2). This declining trend continued into the reporting period. Trappers in the once-productive villages of Levelock, Egegik, and Pedro Bay have not sealed furbearers in a decade or more.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Management of furbearer species in Units 9 and 10 is based on statewide plans including the Greater Alaska Furbearer Management Plan (ADF&G 1976) and Strategic Plan (ADF&G 2002).

GOALS

1. To provide for an optimum harvest of furbearers.

2. To provide the greatest opportunity to participate in hunting and trapping of furbearers.

CODIFIED OBJECTIVES

None.

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game made a positive customary and traditional finding for furbearers in all units, including Units 9 and 10, with an amount reasonably necessary for subsistence uses (ANS) to be 90% of the harvestable portion (5 AAC 99.025(13)).

Intensive Management

Furbearers are not subject to intensive management.

MANAGEMENT OBJECTIVES

Management objectives for furbearers in Units 9 and 10 have not been developed.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitor furbearer abundance and trends through field observations and the annual Alaska Trapper Questionnaire.

Data Needs

Reliable information on abundance is needed to provide insights into trends in abundance and harvest, and the drivers of such trends.

Methods

Information from trappers was obtained through the Alaska Trapper Questionnaires and published annually in Alaska Trapper Reports (Schumacher 2013). Reports are mailed to area

offices and are available online at: http://www.adfg.alaska.gov/index.cfm?adfg=trapping.reports. With the decline in the number of trappers and furbearer harvest in Unit 9, sealing of fur remains the best way to monitor harvest, species abundance, individual trapline management, and unusual events. It is also a way to maintain contacts with active trappers. Contacts with trappers have long been considered a strength of the area office model of wildlife management. Field observations were made primarily in the course of aerial ungulate surveys. Sealing was mandatory for hides of beaver, lynx, river otter, marten, and wolverine.

Results and Discussion

Of the 5 Alaska Trapper Reports, 4 were completed for the reporting period; the report covering RY14 was not yet available. For the FY13 report (Schumacher, T. 2013), only 8 and 6 trappers provided information for relative abundance and trend, respectively, for Unit 9. As a result, the FY13 relative abundance and trend data were compiled and reported at the regional level, rather than by GMU as in previous years, because of low response rates (Parr 2016, 2017). As Region IV is very large, spanning most of the width of Alaska, these have little value for the Alaska Peninsula and therefore results in this report are only provided through RY13 below (Parr 2018). Unit 10 is not included in the Alaska trapper reports because no trapping effort was reported.

BEAVER

In Unit 9, during the late 1990s through RY08, trappers rated beaver as "abundant" and "increasing". In RY13 trappers rated beaver as "abundant" and "no change." Beaver abundance is probably increasing in Unit 9 because of 1) decreasing number of trappers and 2) continued colonization of beavers into the southwest portion of the Alaska Peninsula. Residents of the Chignik area (Unit 9E) recently joined in the decades-old debate in Alaska fishing communities as to whether beavers inhibited salmon populations as new dams are constructed.

COYOTE

Prior to 2000, Unit 9 trappers rated the coyote population as being low in abundance and then increasing since 2000. Interspecific conflict with wolves, which were ranked "abundant" and "increasing," may be limiting the coyote population to relatively low numbers. In RY13 trappers rated coyote as "scarce" and "no change." Field observations and anecdotal information from trappers suggest that a scarce and stable population for coyote is more probable than a continuously increasing trend. Coyotes were in scarce Unit 9D and do not occur Unit 10.

RED FOX

Red fox were the most prevalent furbearer species, based on trapper ratings, since 2000. In RY13 trappers rated red fox as "abundant," which is consistent with trend. Red fox were particularly abundant during RY16 in both Units 9 and 10, which was observed during ungulate aerial surveys, and is probably in response to high vole abundance in the previous 1–2 years.

LYNX

Trappers reported that lynx were "common" during the reporting period except in RY13. Harvest did decline, which supports the decreasing trend in data collected from trappers (Table 1). Lynx

abundance is difficult to assess via aerial ungulate surveys because they are rarely seen compared to other species such as fox and wolf. Regarding prey species, snowshoe hares were rated "abundant" by trappers which shows a stable trend, while ptarmigan declined precipitously to a scarce level during the reporting period.

MARTEN

Marten distribution is very limited within northern Unit 9, and changes in status are difficult to document. In RY13 trappers rated marten as scarce with no change in trend.

MINK

Mink abundance in Unit 9 was reported as "common," with a decreasing trend in RY13. We suspect that mink are not decreasing in abundance given the tremendous untrapped refugia and lack of trapping effort.

OTTER

Otter abundance was reported as "common" and therefore stable in Unit 9 during the reporting period. From the air, otter abundance appears to be high based on the trails observed by ADF&G between endless water habitats. Otters are also frequently observed by sport anglers around King Salmon and Brooks Camp.

WOLVERINE

Trappers reported wolverines as "scarce," and decreasing in RY13. The population is probably stable because trapping pressure is low and harvest is fairly stable, depending on trapping conditions.

In RY13 trappers considered ground squirrels, hares, and rodents to be abundant prey. Grouse were reported as "common," and ptarmigan were reported as "scarce." Vole abundance was highly variable for this reporting period. Anecdotally, local residents do not recall ptarmigan being as low in abundance as they were in RY16.

Recommendations for Activity 1.1

Because so few Unit 9 trappers responded to the Alaska Trapper Questionnaire Survey (e.g., 6–8 Unit 9 trappers responded in RY13), removing Unit 9 trappers from the survey should be considered. Sealing of furbearers should be added to Activity 1.1.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor the furbearer harvest through fur sealing and contact with trappers and hunters.

Data Needs

Harvest of furbearers must be monitored to evaluate potential impacts. Harvest data can be an index of abundance and trend. For example, an abrupt increase, peak, or decline in lynx harvest

with consistent trapping pressure over several years, might reveal changes that are occurring in the population.

Methods

Sealing is mandatory for beaver, lynx, river otter, marten, and wolverine hides in both Units 9 and 10. Sealing refers to the placement of an identification marker on the hide or skull. Recorded data include the location and date of harvest, method of take, method of transportation, the sex, and hide measurements for otter, beaver, and lynx. Sealing must be performed by an authorized ADF&G or a state appointed sealer within 30 days of the close of the season. These data are entered into ADF&G's Wildlife Information Network database (WinfoNet) and are summarized by regulatory year. Many local trappers bring fur to the King Salmon area office for sealing, resulting in valuable personal contacts. Most trappers willingly discuss furbearer populations, trapline management and unusual events.

Results and Discussion

Harvest by Hunters and Trappers

The number of successful, individual trappers in Unit 9 declined from an annual average of 87 during the 1980s to 35 during the reporting period (Fig. 3). These included only trappers who have sealed beaver, otter, lynx, wolf (trapped or shot by resident with trapping or combination license) or wolverine. Most of the decline was driven in Unit 9B where trappers declined from 51 in 1987 to five in 2013. The human population in Unit 9B lives in small, mostly native villages, where trapping seems to be an endangered occupation.

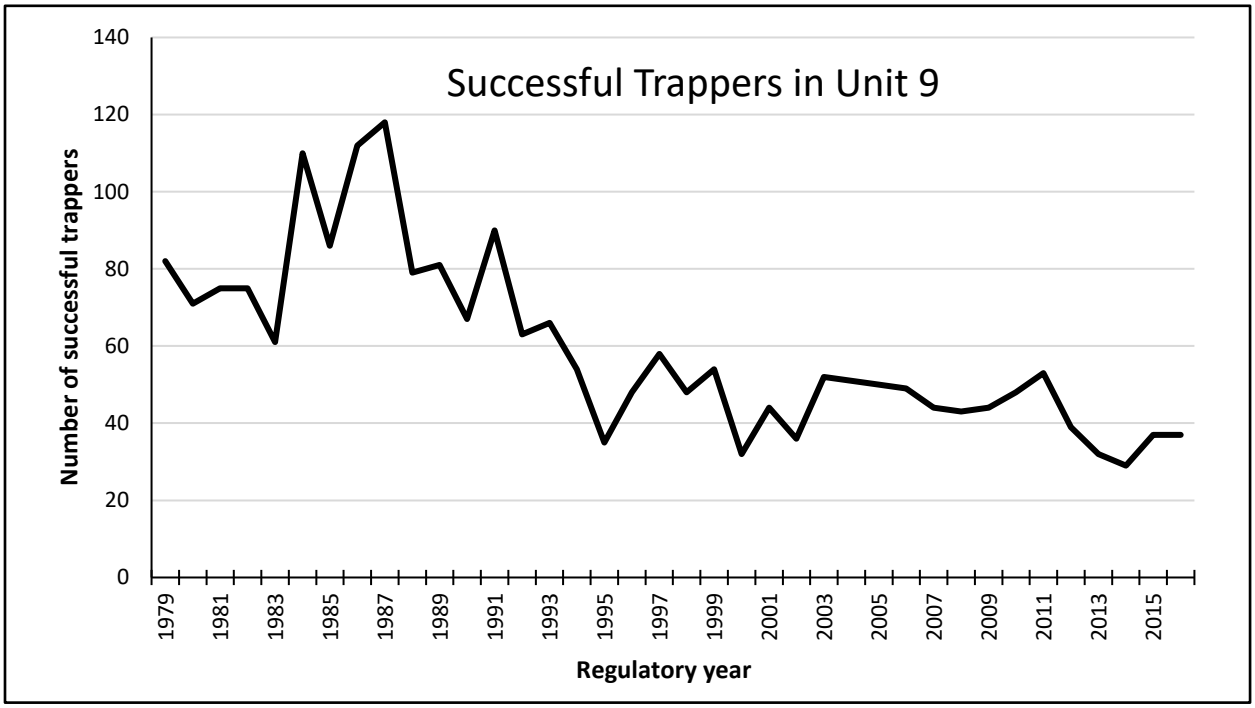

Figure 3. Number of trappers who sealed furbearers (beaver, lynx, otter, wolf, wolverine) taken in Unit 9, regulatory years 1979 through 2016.

In Unit 10 (Unimak Island), 3 wolves were sealed in RY13, there were no other furbearers sealed during the reporting period.

BEAVER

Unit 9 trapping harvest ranged from 69 to 117 beavers during this reporting period (Table 1), which was similar to previous years. The 5-year average harvest was 92 beavers. Traps were the most common method of take. There was not an open hunting season for beaver in Units 9 and 10, however, 2 beavers were allowed to be taken per day by firearm from 15 April to 31 May in Unit 9 provided the meat was salvaged for human consumption.

Table 1. Unit 9 successful beaver, lynx, otter, and wolverine harvests, Alaska Peninsula, regulatory years 2012–2016.

Species	Regulatory year	Total harvest	Method of take			Successful trappers
			Trap/Snare	Shot	Unknown	
Beaver	2012	107	102	–	5	13
	2013	72	59	–	13	10
	2014	69	67	–	2	14
	2015	117	115	2	–	17
	2016	98	93	2	3	15
Lynx	2012	70	62	2	6	13
	2013	18	18	–	–	7
	2014	17	14	3	–	9
	2015	15	15	–	–	7
	2016	31	23	6	2	13
Otter	2012	58	56	2	–	11
	2013	51	37	–	14	7
	2014	63	56	1	6	12
	2015	60	46	1	13	16
	2016	38	37	1	–	14
Wolverine	2012	27	26	1	–	16
	2013	21	18	2	1	11
	2014	9	9	–	–	7
	2015	9	9	–	–	6
	2016	36	34	2	–	17

LYNX

The lynx hunting season in Unit 9 ran concurrent with the trapping season with a bag limit of 2. Unit 10 was not open for lynx trapping or hunting. Unit 9 harvest ranged from 15 to 70, with an average of 30 per year. In Unit 9 lynx harvest reached 2 consecutive record highs of 64 and 86 during RY10 and RY11, which continued into RY12 with a harvest of 70 animals. Harvest

declined precipitously during RY13–RY16 (Table 1), probably indicating a population decline. Similar low harvest occurred in 1987–90, 1995–97, and 2007–08.

River Otter

River otter harvest ranged from 38 to 63 for this reporting period (Table 1). The 5-year average was 54, which decreased from previous 5-year periods. Otters are trapped, snared, and shot. There was no hunting season for river otter in Units 9 and 10.

Wolverine

Unit 9 wolverine harvest ranged from 9 to 36, with an average of 20 per year. RY14 and RY15 harvests (9 each year) were the lowest on record for Unit 9 (Table 1). These were years of poor or no snow conditions which probably affected distribution of wolverine and trappers. Typical harvest range is between 27 and 36 animals. There were no wolverines sealed from Unimak Island during this reporting period.

Season and Bag Limits

Units 9 and 10 seasons and bag limits for furbearer trapping and hunting are listed in Table 2.

Hunter and Trapper Residency and Success

Residents of communities in Unit 9 have taken about 87% of the reported fur harvest in the unit since 2000. Alaska residents from other areas and nonresidents accounted for 8% and 5% of the fur harvest, respectively.

Harvest Chronology

The harvest chronology should be viewed cautiously because trappers do not always keep close track of when harvests occur. Annual variations in chronology usually reflect weather and travel conditions. December, January, and February are typically the most important months for trapping in Unit 9 (Table 3).

Transport Methods

Snowmachines and all-terrain vehicles were the most common methods of transportation for beaver, lynx, otter, and wolverine trappers in Unit 9 (Table 4). Variation in the use of these 2 methods between regulatory years is associated with differences in snow conditions.

Other Mortality

There were no confirmed cases of rabies during this reporting period.

Table 2. Furbearer seasons and bag limits in Game Management Unit 9, Alaska Peninsula, regulatory years 2012–2016.

Species	License	Unit	Season	Bag limit
Beaver	trapping	9	10 Oct–31 May	No limit
	w/ firearm	9	15 Apr–31 May	2 per day
Lynx	trapping	9A, 9C–E	10 Nov–28 Feb	No limit
	trapping	9B	10 Nov–31 Mar	No limit
	hunting	9	10 Nov–28 Feb	2 per year
River otter	trapping	9,10	1 Nov–31 Mar	No limit
Wolverine	trapping	9,10	10 Nov–28 Feb	No limit
	hunting	9,10	1 Sep–31 Mar	1 per year
Coyote	trapping	9	1 Oct–30 Apr	No limit
	trapping	10	1 Nov–31 Mar	No limit
	hunting	9,10	No closed season	No limit
Red/Arctic	fox trapping	9,10	10 Nov–28 Feb	No limit
Arctic fox	hunting	9	1 Sep–30 Apr	2 per year
	hunting	10	1 Sep–30 Apr	No limit
Red fox	hunting	9,10	1 Sep–15 Feb	2 per year
Mink/weasel	trapping	9,10	10 Nov–28 Feb	No limit
Muskrat	trapping	9,10	10 Nov–10 Jun	No limit
Squirrel/marmot	trapping	9,10	No closed season	No limit

Table 3. Unit 9 beaver, lynx, otter, and wolverine harvests percent by month, Alaska Peninsula, regulatory years 2012–2016.

Species	Regulatory years	Harvest Periods						
		Sept–Oct	Nov	Dec	Jan	Feb	Mar	Apr–May
Beaver								
	2012	11	8	10	40	18	14	0
	2013	32	21	6	14	15	13	0
	2014	13	22	10	23	19	13	0
	2015	38	24	19	5	8	7	0
	2016	5	8	13	31	25	7	10
Lynx								
	2012	0	5	45	9	20	20	0
	2013	0	6	56	33	6	0	0
	2014	0	24	12	35	29	0	0
	2015	0	13	13	20	53	0	0
	2016	6	16	26	19	29	3	0
Otter								
	2012	0	5	16	53	26	0	0
	2013	0	35	35	18	2	10	0
	2014	0	13	11	38	21	17	0
	2015	0	25	22	15	37	2	0
	2016	0	11	37	11	37	5	0
Wolverine								
	2012	5	5	40	15	30	5	0
	2013	4	7	15	22	33	19	0
	2014	0	11	11	56	22	0	0
	2015	0	11	11	11	67	0	0
	2016	3	6	25	28	31	8	0

Table 4. Unit 9 beaver, lynx, otter, and wolverine percent harvest by transportation method, Alaska Peninsula, regulatory years 2012–2016.

Species	Regulatory years	Airplane	Dogsled	Boat	ATV	Snow machine	ORV	Highway vehicle	Ski/ snowshoe	Unk
Beaver										
	2012	0	0	14	54	18	8	0	1	5
	2013	14	0	11	36	15	0	3	3	18
	2014	0	3	16	64	1	0	9	7	0
	2015	0	0	43	47	9	0	0	1	0
	2016	0	3	13	43	34	0	6	1	0
Lynx										
	2012	3	0	0	17	69	3	0	0	9
	2013	0	0	0	67	33	0	0	0	0
	2014	0	0	0	82	0	0	18	0	0
	2015	0	0	7	47	13	0	33	0	0
	2016	0	3	0	29	45	0	19	0	3
Otter										
	2012	0	0	0	53	16	9	3	19	0
	2013	0	0	0	35	4	0	16	18	27
	2014	0	0	3	43	0	0	6	38	10
	2015	0	0	3	70	0	0	0	5	22
	2016	0	0	0	45	32	0	11	13	0
Wolverine										
	2012	0	0	0	37	44	0	7	11	0
	2013	10	0	0	62	5	0	5	14	5
	2014	0	0	11	78	0	0	0	11	0
	2015	0	0	22	67	0	0	0	11	0
	2016	3	0	3	28	50	0	6	11	0

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Sealing data are stored on WinfoNet. Original data sheets are stored in file folders located in the King Salmon area biologist's office.

Alaska Board of Game Actions and Emergency Orders

There were no actions taken by the Board nor were any emergency orders issued during the reporting period.

Recommendations for Activity 2.1

Furbearer harvests in Unit 9 remain low with a relatively stable, long-term trend despite annual fluctuations in the harvest of some species. Fewer trappers, low fur prices and difficult travel

conditions have reduced harvests of most species below historic levels. Although population information was lacking, harvests of furbearers appeared to be below sustainable yield based on abundance indices and the lack of harvest in vast areas. Harvest information was sufficient for management purposes for all species of furbearers requiring sealing in Unit 9. Seasons and bag limits are relatively complex and, given the long-term decline in trappers (Fig. 3), there may be an opportunity to liberalize and align seasons among some species. Furbearer managers should continue supporting mandatory sealing as a means to monitor trapping activity and furbearer populations.

In Unit 10, we recommend closing the wolverine trapping and hunting seasons. All indications suggest that wolverines are at very low density on Unimak Island. There is no information to suggest that they can swim across Isanotski Strait, but 50–100 years ago crossing sea ice would have been possible with greater frequency than now. Small, insular populations should be managed conservatively; it is serendipitous that trappers have become even less abundant than wolverines on the island.

3. Habitat Assessment-Enhancement

Not applicable.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

Alaska Trapper Questionnaires provided an index to species abundance and trend, but recently the number of responses from Unit 9 have been inadequate to detect local trends. This is because the number of active trappers has declined considerably in Unit 9; less than 40 trappers per year seal furs. Other GMUs in Alaska have similar or even lower responses. Sealing of furbearers has become a more useful tool than the Alaska Trapper Questionnaire for monitoring furbearers in Unit 9.

Harvests of furbearers appear to be within sustainable limits in Unit 9. Trapping generally occurs at low levels with vast areas of refugia on the Alaska Peninsula. Given the logistical constraints in assessing population status for most species and the low level of trapping pressure in recent years, there is little benefit in intensifying management or developing management objectives.

Seasons and bag limits are relatively complex and, given the long-term decline in the number of trappers, there may be opportunity to liberalize and align these among some species.

Arctic fox were probably extirpated by other predators on the Unit 9 mainland and Unimak Island decades ago, but possibly may occur on remnant island populations off the Alaska Peninsula. We will work with AMNWR to determine which islands may have Arctic fox present. One possible outcome could be to remove Arctic fox from Unit 9 regulations.

In Unit 10 we recommend closing wolverine seasons for all trapping and hunting. We believe that the wolverine population on Unimak Island has become very small and insular, and we are concerned over sustainability of any harvest above the current harvest of zero.

II. Project Review and RY17–RY21 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The existing management direction and goals are appropriate for furbearer management in Unit 9. Long-term sustainability of the furbearer populations and statewide goals (ADF&G 2002) for human uses are being met; therefore, the Unit 9 management direction should continue in a manner that complements statewide furbearer management goals.

GOALS

1. To provide for an optimum harvest of furbearers.

2. To provide the greatest opportunity to participate in hunting and trapping of furbearers.

CODIFIED OBJECTIVES

There are currently no objectives for furbearers in Units 9 and 10, and we believe it is unnecessary to create objectives to continue to support the present goals and management direction.

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game made a positive customary and traditional finding for furbearers in all units, including Units 9 and 10, with an amount necessary for subsistence uses to be 90% of the harvestable portion (5 AAC 99.025(13)).

Intensive Management

Not applicable to Units 9 and 10 furbearers in this report and plan.

MANAGEMENT OBJECTIVES

Management objectives for furbearers specific to Units 9 and 10 have not been developed. Given the long-term decline in the number of trappers and of furbearer harvest in Units 9 and 10, and the vast refugia on the Alaska Peninsula, we see little benefit in intensifying management by developing objectives for furbearers. Although implied in the above goals, maintaining viable populations is stated here explicitly as a critical project objective.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitor furbearer abundance and trends through the sealing of furbearers, trapper contacts, field observations and annual ADF&G's Alaska Trapper Reports.

Data Needs

Collect information on species abundance and factors affecting trends in abundance and harvest. Alaska Trapper Reports have become of lesser value for management in Unit 9 since data is now pooled by region because Region IV spans a large area of the state from the Aleutian Islands to the Canadian border. For example, a "Southwest Alaska" grouping, which includes Units 9 and 17, would be more useful than a Region IV group. Earlier editions of the Alaska Trapper Reports (e.g., Blejwas 2007) grouped GMUs into a southwest area that included Units 8, 9 and 17, but that was discontinued in more recent editions.

Methods

With the decline in the number of trappers and furbearer harvest in Unit 9, sealing of fur remains the best way to monitor harvest, species abundance, how individual traplines are managed, and unusual events. Sealing is also the best way to maintain contacts with active trappers. Contacts with trappers has long been considered a strength of the area office model of wildlife management. Field observations are made primarily in the course of aerial ungulate surveys. Sealing will continue to be mandatory for hides of beaver, lynx, river otter, marten, and wolverine during the plan period.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor the furbearer harvest through fur sealing and contact with trappers and hunters.

Data Needs

Harvest must be monitored to evaluate its potential impacts. In some cases, harvest can be an index of abundance and trend, such as an abrupt increase, peak, and decline of lynx harvest over several years of similar trapping pressure.

Methods

We will continue to seal beaver, lynx, river otter, marten, and wolverine in Unit 9. Recorded data will include the location of harvest, date of harvest, method of take, method of transportation, sex, and hide measurement (otter, beaver, and lynx only). Sealing must be performed by an ADF&G or a State appointed sealer within 30 days of the close of the season. These data will be entered into an ADF&G database (WinfoNet) and will be summarized by regulatory year.

3. Habitat Assessment-Enhancement

Not applicable to Units 9 and 10.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Sealing data will be stored in WinfoNet. Alaska Trapper Reports are stored in the area wildlife biologist's office and are available online at: https://www.adfg.alaska.gov/index.cfm?adfg=trapping.reports.

Agreements

None anticipated.

Permitting

None anticipated.

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