Species Management Report and Plan ADF&G/DWC/SMR&P–2025–64

Furbearer Management Report and Plan, Game Management Unit 18:

Report Period 1 July 2012–30 June 2017, and

Plan Period 1 July 2017–30 June 2022

Patrick Jones

2025

Alaska Department of Fish and Game Division of Wildlife Conservation

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Hunters are important founders of the modern wildlife conservation movement. They, along with trappers and sport shooters, provided funding for this publication through payment of federal taxes on firearms, ammunition, and archery equipment, and through state hunting license and tag fees. These taxes and fees fund the federal Wildlife Restoration Program and the State of Alaska's Fish and Game Fund, which provided funding for the work reported on in this publication.

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 Phillip Perry, Management Coordinator for Region V for the Division of Wildlife Conservation.

Species management reports and plans are available via the Alaska Department of Fish and Game's public website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, AK 99811-5526; phone: (907) 465-4190; email: dfg.dwc.publications@alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Services (www.arlis.org). To subscribe to email announcements regarding new technical publications from the Alaska Department of Fish and Game, Division of Wildlife Conservation please use the following link: http://list.state.ak.us/mailman/listinfo/adfgwildlifereport.

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

Cover Photo: An adult female blue lynx. The blue color phase in lynx is defined as having no brown or black hair. ©2018 ADF&G. Photo by Patrick Jones.

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Purpose of this Report

This report provides a record of survey and inventory management activities for furbearers in Game Management Unit 18 for the 5 regulatory years 2012–2016 and plans for survey and inventory management activities in the next 5 regulatory years, 2017–2021. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY17 = 1 July 2017–30 June 2018). 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 furbearer management report of survey and inventory activities that was previously produced every 3 years.

I. RY12–RY16 Management Report

Management Area

Unit 18 is a 40,600 mi^2 roadless area at the mouth of the Yukon and Kuskokwim rivers. These major rivers roughly divide the unit into thirds. The middle third between the rivers is largely flat, wet, and dotted with many lakes. The portion north of the Yukon River and the portion south and east of the Kuskokwim River are mostly upland to mountainous. Some extensive areas of forest exist near the rivers. The habitat in Unit 18 is largely intact. The boundaries of the Yukon Delta National Wildlife Refuge and the Togiak National Wildlife Refuge approximate the Unit 18 boundary. There is minimal State land in Unit 18. Local and regional corporation lands constitute the majority of private lands within the unit, with the remaining lands being parts of the Yukon Delta and Togiak refuges. Unit 18 is inhabited by 24,706 people (U.S. Census Bureau 2020) in 38 year-round communities, making Unit 18 Alaska's most densely populated rural unit (Fig. 1).

Additional maps describing the boundaries and special management areas in Unit 18 are available at https://www.adfg.alaska.gov/index.cfm?adfg=maps.main.

Summary of Status, Trend, Management Activities, and History of Furbearers in Unit 18

Furbearers are abundant throughout Unit 18. Furbearer species in the unit include beaver (*Castor canadensis*), coyote (*Canis latrans*), Arctic fox (*Vulpes lagopus*), red fox (*Vulpes vulpes*), lynx (*Lynx canadensis*), short-tailed weasel (*Mustela erminea*), least weasel (*Mustela nivalis*), American marten (*Martes americana*), American mink (*Neovison vison*), muskrat (O*ndatra zibethicus*), Arctic ground squirrel (*Spermophilus parryii*), red squirrel (T*amiasciurus hudsonicus*), hoary marmot (*Marmota caligata*), river otter (*Lutra canadensis*), wolverine (*Gulo gulo*), and wolf (*Canis lupus*; addressed in a separate species management report and plan). Extensive areas of suitable habitat in Unit 18 support large populations of red fox and aquatic furbearers, such as mink, river otter, muskrat, and beaver. Lynx, marten, Arctic fox, squirrel, wolverine, and coyote also occur throughout the unit but are less abundant. Life history, range,

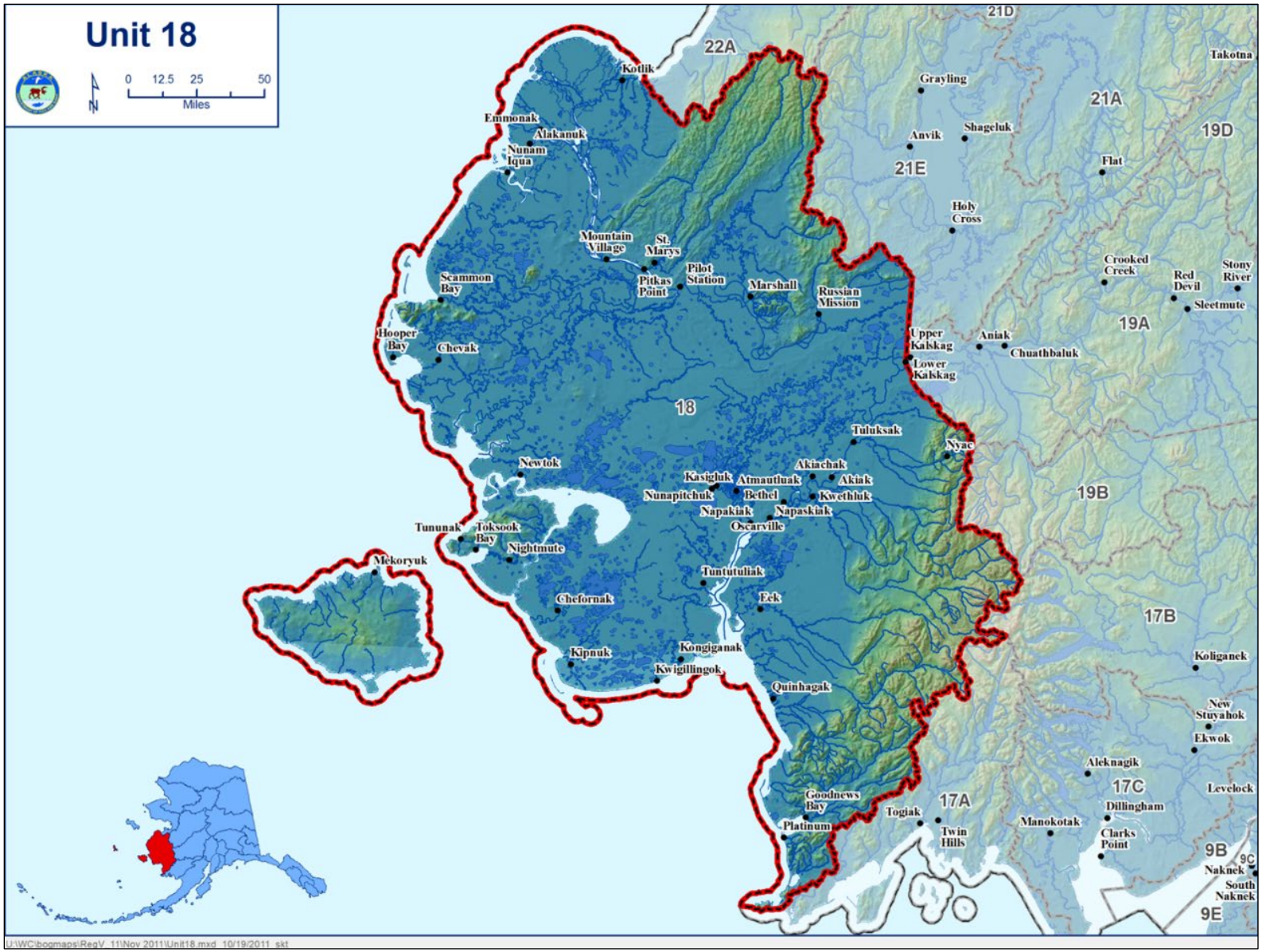

Figure 1. Map of Unit 18 boundaries, southwest Alaska, regulatory years 2012–2016.

habitat, and management of furbearers are available on the department's species website at https://www.adfg.alaska.gov/index.cfm?adfg=animals.listmammals.

Fur harvests are well below desirable levels and are far below the historic highs of the 1930s. Historically, approximately one-third of the fur sealed in the state originated in Unit 18, and the sale of furs provided an important financial boost to the mixed subsistence and cash economy. However, starting in the late 1990s, the number of trappers and the harvest of fur have declined, with minor fluctuations driven by fur prices and travel conditions.

Management Direction

Existing Wildlife Management Plans

There are no formal management plans for furbearers in Unit 18.

Goals

Provide for an optimal harvest of furbearers consistent with sustained yield principles.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game has made a positive subsistence finding for furbearers in Unit 18, with a harvestable surplus to be 90% of the harvestable portion (5 AAC 99.025(13)).

Intensive Management

Not applicable.

Management Objectives

Maintain accurate annual harvest records based on sealing documents.

Management Activities

1. Population Status and Trend

There were no activities directed at estimating trends in furbearer populations in Unit 18 during RY12–RY16; however, ADF&G staff noted anecdotal information from conversations with trappers and from observations during aerial surveys targeting other species.

Activity 1.1. Record anecdotal observations from trappers and during aerial surveys for other species.

Data Needs

Observations from department staff and the public can help inform management actions, such as a change in regulation, bag limit, or season length.

Methods

ADF&G offices are located across Region V, including in rural areas. These offices are open to the public Monday through Friday and provide opportunities for public meetings. For example, the Bethel office had dozens of public meetings throughout RY12–RY16. Department staff also traveled to many other communities in Unit 18. Public input is important to the department and to understanding furbearer abundance and availability for harvest.

Unit 18 had 5 advisory committees during RY12–RY16. These committees collectively had a local representative and an alternate representative from 37 communities. Advisory committee meetings are open to the public and provide a platform for the public to express their concerns and observations. This includes the public informing the department of the regulatory changes they would like to see, such as the season dates and harvest limits for each species. These conversations with advisory committee members provide the department with the feedback needed to establish seasons and bag limits.

Biologists also spend a lot of time talking to the public, including consumptive users and wildlife observers, such as photographers. These conversations provide biologists with insight into population trends and distribution.

Historically, during aerial surveys for caribou, moose, and muskox in the region, notes of furbearer tracks in the snow have been recorded. Those observations provide furbearer managers with information about the general abundance and distribution of the furbearers.

Furbearer sealing certificates for harvested lynx, otter, and wolverine help the department track their harvest. For all other furbearer species, the department relies on general observations by biologists in the field and communication with trappers across the region.

Results and Discussion

Beaver

Beavers are abundant throughout Unit 18. Longtime local residents have communicated since the early 1980s that beaver numbers have increased to the point that they are ruining favored fish habitats. Beaver dams can be inconvenient when they are built across sloughs and rivers commonly used for boat travel, and beavers are regularly removed from the right of way along roadways.

Coyote

Only anecdotal population information is available for coyotes. These reports indicate that coyotes have established themselves in Unit 18 and seem to be incrementally growing in abundance over time.

Arctic Fox

Arctic foxes are present in Unit 18 along the coast and on Nunivak Island. The population there is stable according to trappers.

Red Fox

Red foxes are abundant throughout Unit 18. They are commonly seen during aerial surveys for other species and are routinely seen in southwest Alaska communities, including Bethel. During RY12–RY16 and the previous reporting period (RY09–RY11), some of the foxes that were tested were positive for rabies. For example, ADF&G sampled 135 carcasses donated by trappers the winter of 2009–2010 and found 3% were positive for rabies. The department sampled 209 red foxes collected by trappers the following winter (2010–2011); 1% were positive for rabies. Rabies is believed to be present in the Yukon-Kuskokwim Delta at varying levels.

Lynx

Lynx numbers appeared to reach their peak in 2011 and then declined throughout RY12–RY16.

Marten

Marten numbers are stable at low levels.

Mink

Mink abundance in the Yukon-Kuskokwim Delta is generally higher than elsewhere in Unit 18 but may not be perceived as exceptional by area trappers who are accustomed to mink being more abundant.

Muskrat

Trappers report low muskrat abundance. In addition, trappers have not been targeting muskrats as deliberately as in the past.

River Otter

River otters are found throughout the habitats available to them in Unit 18. Trappers in the unit probably target otters more directly than any other furbearer because they have maintained their monetary value. Trappers expect about $100 per pelt; however, even with a higher interest in otter trapping, large areas of Unit 18 are not trapped. During surveys of other species, ADF&G staff normally see otter tracks and have noted that otters appear abundant.

Red Squirrel

As with marten, red squirrel habitat is limited in Unit 18, and numbers are stable at low levels. Trappers rarely target red squirrels except when they are perceived as a nuisance.

Arctic Ground Squirrel

Trappers are not targeting Arctic ground squirrels as deliberately as in the past when spring "parky squirrel" camps were established to collect squirrel furs for parkas. Arctic ground squirrel numbers are apparently stable.

Short-Tailed and Least Weasel (Ermine)

Weasel numbers are not influenced by trapping because trappers rarely target them unless they are a nuisance around home or field camps.

Wolverine

Wolverines in the mountain habitat of Unit 18 are abundant; however, through much of the flats and coastal plains, they are merely present.

Hoary Marmot

Marmots are not technically considered a furbearer. Marmot fur is used locally to make parkas and other fur garments. There is an established marmot colony on Cape Newingham in southern Unit 18. Residents also report seeing them occasionally in the Kilbuck Mountains.

Sex Composition

The only furbearers for which sex composition of the harvest is collected during sealing are otters and wolverines. During RY12–RY16, male otters outnumbered females in the harvest by a ratio of about 2:1, and male wolverines outnumbered females by about 3:1. This probably does not reflect the composition of the population. Rather, it reflects the tendency for males of both species to be more vulnerable to trapping than females.

Recommendations for Activity 1.1

Continue.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor annual hunter harvest through registration permits, harvest tickets, and subsistence household surveys.

Data Needs

Continued collection of community household survey information regarding the take of furbearers, in addition to monitoring lynx, otter, and wolverine sealing records, will help managers keep an index of effort and harvest in Unit 18. This will allow management practices to align with conservation goals, community involvement, and regulated harvest opportunities.

Methods

ADF&G collected harvest data by sealing the hides of lynx, otter, and wolverine taken by trappers and hunters (Tables 1, 2, and 3). Sealers recorded location, date of harvest, method of take, transportation method, and sex (except lynx). Hides were measured at the time of sealing if they were stretched and dried when presented for sealing. Sealing is required to be done by either authorized ADF&G staff 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 (WinfoNet). Harvest data were summarized by regulatory year.

Table 1. Lynx harvest, regulatory years 2012–2016, Unit 18, southwest Alaska.

		Method of take		
Regulatory year	Total harvest	Trap or snare	Shot	Unknown
2012	540	514	14	12
2013	271	269	2	0
2014	197	189	4	4
2015	285	278	4	3
2016	183	174	3	6

Table 2. River otter harvest, regulatory years 2012–2016, Unit 18, southwest Alaska.

	Reported harvest				Method of take		
Regulatory year	Male	Female	Unknown	Total harvest	Trap or snare	Shot	Unknown
2012	95	58	155	308	291	10	7
2013	76	54	251	381	351	16	14
2014	54	35	231	320	306	5	10
2015	89	49	253	391	373	13	5
2016	130	82	22	234	217	0	17

Table 3. Wolverine harvest, regulatory years 2012–2016, Unit 18, southwest Alaska.

		Method of take		
Regulatory year	Total harvest	Trap or snare	Shot	Unknown
2012	47	33	11	3
2013	17	16	1	0
2014	31	26	5	0
2015	16	15	1	0
2016	40	37	3	0

Seasons and Bag Limits

HUNTING SEASONS AND BAG LIMITS

Species	Season	Bag limit
Beaver	No closed season	No limit
Coyote	1 September–30 April	2 coyotes
Arctic fox	1 September–30 April	2 foxes
Red fox[a]	1 September–15 March	10 foxes
Lynx	10 November–15 March	2 lynx
Wolverine	1 September–31 March	2 wolverine

[a] No more than 2 foxes may be taken before 1 October.

TRAPPING SEASONS AND BAG LIMITS

Species	Season	Bag limit
Beaver	No closed season	No limit
Coyote	10 November–31 March	No limit
Arctic fox	10 November–31 March	No limit
Red fox	10 November–31 March	No limit
Lynx	10 November–31 March	No limit
Marten	10 November–31 March	No limit
Mink and weasel	10 November–31 March	No limit
Muskrat	10 November–31 March	No limit
River otter	10 November–31 March	No limit
Wolverine	10 November–31 March	No limit

Results and Discussion

Harvest by Hunters-Trappers

The regulatory harvest of lynx in Unit 18 during RY12–RY16 averaged 295 lynx annually with a range of 183 to 540 (Table 1). Trapping accounted for the vast majority (94–98%) of the reported take. Snaring remained minor (1–5%), and hunting (shot) contributed ≤4 animals in most years. Total harvest declined markedly from 540 in RY12 to 183 in RY16, consistent with the cyclic decline in lynx abundance.

Unit 18 otter harvests during RY12–RY16 ranged from 234 to 391 otters annually, with trap or snare accounting for 92–95% of known take (Table 2).

Reported wolverine harvest in Unit 18 was substantially lower, averaging only 30 wolverines per year (range = 16–47; Table 3). Trap or snare accounted for 70–94% of the take and shot accounted for 6–24%. The low and relatively stable harvest reflects low trapper effort rather than low wolverine density.

The continued predominance of trapping over snaring and shooting all 3 species—lynx, otter, and wolverine—underscores the efficiency and selectivity of traps in Unit 18.

Permit Hunts

None.

Hunter Residency and Success

No direct measure of trapper success is available. Very few trappers are full-time; most are recreational trappers who trap in their spare time. The time a trapper spends trapping per week varies widely and probably has more to do with success than any other factor.

Harvest Chronology

The trapping season generally begins on 10 November; however, the start of trapping is largely dictated by travel conditions around that date. Travel conditions can remain poor for weeks after the official start of the trapping season. Typically, February and March are the best 2 months for travel conditions. Travel conditions in November, December, and January are generally marginal due to a lack of snow or thin ice.

Transport Methods

Trappers used snowmachines to take nearly all the furbearers sealed in Unit 18 during RY12–RY16.

Other Mortality

Natural mortality sources for furbearer species exist; however, we do not monitor them. Rabies is a concern, especially with the large fox population.

Normally, fox visibility in or around communities starts to increase in October. This increase in visibility results from fox territoriality around dens, which occurs in early spring during mating and especially when the pupping period ends in late fall. As the kits develop into subadults, they become independent and disperse in October. Foxes are territorial only during pupping in spring and summer. Starting in October, foxes stop being territorial through most of the winter. Dispersal of these subadults across the landscape also results in a lot of interactions among foxes. This results in a slight uptick in the amount of detectable rabies in late October and early November. Throughout the winter, persistent sightings in communities become common.

The breeding season takes place in the spring, from February through April. As with most animals, fox behavior changes during the breeding season. Foxes become extremely visible and active, even during daylight hours. Late spring is when the number of public encounters with rabies-positive foxes spikes. This is the time of year when foxes are competing with each other for territories, courting other foxes, exhibiting other breeding behaviors, and generally moving around a lot.

Recommendations for Activity 2.1

Continue.

3. Habitat Assessment-Enhancement

There were no habitat assessment or enhancement activities for furbearers in Unit 18 during RY12–RY16.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Human and pet exposure to rabies is an ongoing concern in rural Alaska, with nuisance foxes as the primary carrier. Sometimes these animals are euthanized, and occasionally we have been able to test them for rabies. Often, the animal is not euthanized or is euthanized in a manner that makes it non-testable.

Given the public health aspect of rabies, we work closely with several other agencies. In most cases, staff with the Alaska Department of Health's Section of Epidemiology work directly with the staff of the Office of Environmental Health and Engineering (OEHE)—within the U.S. Department of Health and Human Services' Indian Health Service—in various parts of the state. Sometimes animal control agencies are involved, such as the City of Bethel's animal control staff in Unit 18. In the unit's 36 smaller communities, health clinic staff and Village Public Safety Officers (VPSOs) initially handle rabies cases; however, the smallest communities do not have VPSOs. Collectively, these agencies and groups work closely with the OEHE.

Staff from local agencies and groups provide local dog owners with information about booster shots for their dogs. If there is a bite from wildlife or a dog, it is handled through the Alaska Department of Health's Alaska State Virology Laboratory in Fairbanks.

For foxes that are found dead or killed through defense of life or property (DLP) without exposure to dogs or people, the fox carcass is sent to the Division of Wildlife Conservation's Wildlife Health and Veterinary Services program in Fairbanks.

Data Recording and Archiving

Harvest data and copies of sealing forms are stored in ADF&G's WinfoNet database. Original datasheets are stored in folders at the Bethel area office.

Agreements

Currently, there are no agreements with other agencies about furbearer management in Unit 18.

Permitting

No permits were needed to conduct furbearer management activities in Unit 18 in RY12–RY16.

Conclusions and Management Recommendations

The management objective of maintaining accurate annual harvest records based on sealing documents was met. The harvest of furbearers in Unit 18 is within sustainable limits, and no changes in seasons or bag limits are recommended. Harvest and effort are relatively low compared to historical data. Methods such as track surveys could provide more insight into population trends; however, funding is currently unavailable to conduct these surveys, and the need is not great given the relatively low harvest of furbearers.

II. Project Review and RY17–RY21 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The existing management direction and goals appropriately direct the management of furbearers in Unit 18. Under the current trajectory, furbearers will persist as part of the natural ecosystem,

and hunting (for applicable species), trapping, and viewing opportunities are expected to continue. The long-term sustainability of furbearer populations and statewide furbearer goals (ADF&G 1976) for human uses has been met. Therefore, furbearers in Unit 18 should continue to be managed in a manner that complements these statewide management goals. There are no area-specific issues for furbearer management. Management will continue on a unitwide or larger scale.

GOALS

To provide optimum harvests and maximum opportunities to participate in the hunting and trapping of furbearers.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game has made a positive subsistence finding for furbearers in all units, including Unit 18, with a harvestable surplus to be 90% of the harvestable portion (5 AAC 99.025 (13)).

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

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

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Record observations of furbearers seen incidentally during other survey work and anecdotal reports from the public.

Data Needs

Abundance data are central to understanding changes in furbearer populations and harvest pressure.

Methods

Locations, group size (if applicable), and characteristics will be recorded during aerial surveys for other species. Most observations occur during moose surveys when sightability is ideal. Anecdotal reports will be recorded when available.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor harvest through sealing records.

Data Needs

No change from RY12–RY16.

Methods

No change from RY12–RY16.

3. Habitat Assessment-Enhancement

There are no activities planned for furbearer habitat assessment or enhancement in Unit 18 during RY17–RY21.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

No change from RY12–RY16.

Agreements

No change from RY12–RY16.

Permitting

No permits are expected in RY17–RY21.

References Cited

U.S. Census Bureau. 2020. ACS demographic and housing estimates [web page]. American Community Survey, ACS 5-year estimates data profiles, table DP05. https://data.census.gov/table/ACSDP5Y2020.DP05 (Accessed 2023).


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