

Furbearer Management Report and Plan, Game Management Units 12 and 20E

Report Period 1 July 2017–30 June 2022, and
Plan Period 1 July 2022–30 June 2027

Marie M. Jamison



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Plan Period 1 July 2021–30 June 2027

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

This species management report and plan was reviewed and approved for publication by Jason Caikoski, Management Coordinator of Region III 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 furbearers in Game Management Units 12 and 20E during the 5 regulatory years RY17–RY21, along with plans for the next 5 regulatory years, RY22–RY26. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY17 = 1 July 2017–30 June 2018). This report is primarily produced to provide agency staff with data and analysis to help guide and record agency efforts. It is also made available to the public to inform them about wildlife management activities. The Alaska Department of Fish and Game's (ADF&G, the department) Division of Wildlife Conservation (DWC, the division) publishes these reports on a 5-year cycle to document trends and describe potential changes in data collection activities for furbearers.

I. RY17–RY21 Management Report

Management Area

Unit 12 (9,978 mi²) encompasses the Tanana River drainage upstream from the Robertson River, including all drainages into the east bank of the Robertson River, the White River drainage excluding the Ladue River drainage (Fig. 1), and the entirety of the Tetlin National Wildlife Refuge and portions of the Wrangell-St. Elias National Park and Preserve. The landscape of Unit 12 is diverse, exhibiting 6 of Alaska's ecoregions including the Tanana-Kuskokwim Lowlands, the Yukon-Tanana Uplands, the Alaska Range, the Wrangell Mountains, the Kluane Range, and a small portion of the Chugach-St. Elias Mountains.

Unit 20E (10,680 mi²) includes portions of Unit 20 that drain into the south bank of the Yukon River upstream from and including the Charley and Ladue river drainages (Fig. 2). The unit contains over half of the Yukon-Charley Rivers National Preserve. The landscape of Unit 20E is primarily defined by Yukon-Tanana Uplands, with the northernmost part of the unit including the southwestern portion of the North Ogilvie Mountains.

Both units experience subarctic climates typical of Interior Alaska, with temperatures ranging from –40°F during winter to as high as 80°F in the summer. Annual precipitation averages between 10" and 15". Snow cover typically begins in October and persists until late spring, with average snow depths ranging from 30" to 60".

Summary of Status, Trend, Management Activities, and History of Furbearers in Units 12 and 20E

Furbearer trapping has historically played a substantial part in the economy of Units 12 and 20E, evolving upon the expansion of the western fur trade from a subsistence- and bartering-based system among local communities to one of income generation (Haynes and Simeone 2007). Mining in the early 1900s further boosted commercial trapping, as miners arrived and capitalized on the demand for fur. As exploration declined, trapping pressure eased, though many local residents continued trapping for supplemental income. Today, with the fur market in decline, trapping is increasingly driven by recreational interests rather than economic motives (Dorendorf 2016).

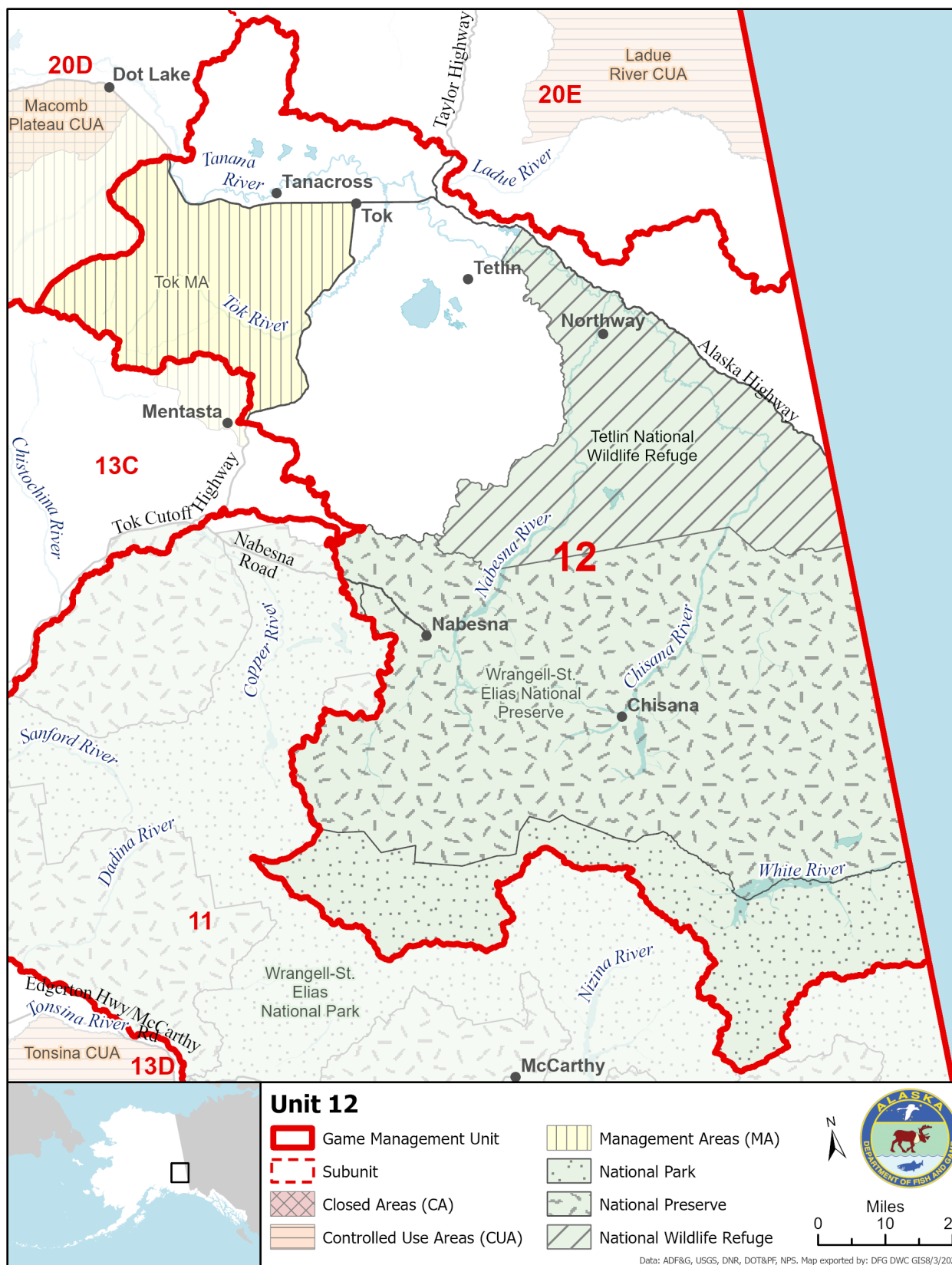


Figure 1. Unit 12 boundaries, regulatory years 2017–2021, Interior Alaska.

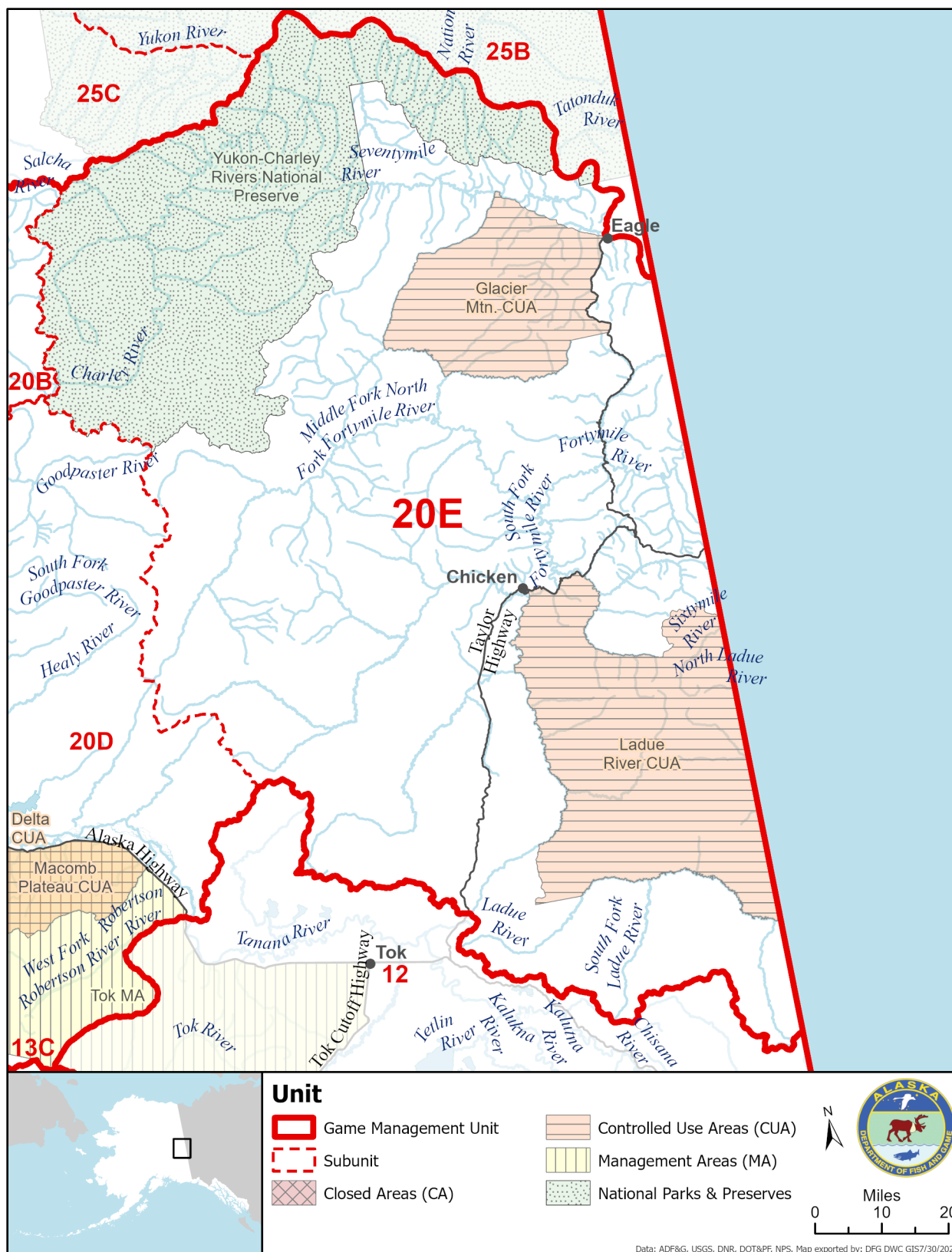


Figure 2. Unit 20E boundaries, regulatory years 2017–2021, Interior Alaska.

The diverse landscape of Units 12 and 20E offers productive habitats for a variety of furbearer species including marten (*Martes americana*), lynx (*Lynx canadensis*), wolverine (*Gulo gulo*), red fox (*Vulpes vulpes*), beaver (*Castor canadensis*), coyote (*Canis latrans*), mink (*Neovison vison*), river otter (*Lutra canadensis*), muskrat (*Ondatra zibethicus*), ermine (*Mustela erminea*), marmot (*Marmota broweri*), and red squirrel (*Tamiasciurus hudsonicus*). Wolves (*Canis lupus*), due to their specific management needs, are addressed in a separate management report. Many furbearer species are difficult to study due to their elusive behavior and naturally low population densities; therefore, data on population trend and distribution within the units are limited. Additionally, their populations are known to fluctuate in response to factors such as weather patterns, habitat suitability, prey and food availability, competition, and predation. The Alaska Trapper Questionnaire has also provided harvest managers with valuable insights into furbearer harvest and population trends; results of the questionnaire are published in the Alaska Trapper Report series.¹ Most other harvest data are collected from sealing documents, with mandatory sealing requirements introduced for wolverine in 1971 and for river otter and lynx in 1977.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

The “Greater Alaska Furbearer Management Plan” established in the *Alaska Wildlife Plans: Furbearers* (ADF&G 1976) provides the framework for furbearer management in Units 12 and 20E.

GOALS

During RY17–RY21, the Units 12 and 20E furbearer management goal was as follows:

G1. Provide the greatest opportunity to participate in hunting and trapping furbearers.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Units 12 and 20E have a positive finding for customary and traditional uses of furbearers. The amounts reasonably necessary for subsistence uses is 90% of the harvestable portion for each furbearer species (5 AAC 99.025(13)).

Intensive Management

Not applicable.

¹ The Alaska Trapper Report series can be found on the ADF&G website here:
<https://www.adfg.alaska.gov/index.cfm?adfg=trapping.reports>

MANAGEMENT OBJECTIVES

M1. Maintain viable populations of furbearers that will support annual hunting and trapping harvest.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

No activities to assess the status and trends of furbearer populations were conducted during RY17–RY21.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor furbearer harvest trends (M1).

Data Needs

Annual harvest data are needed to assess the relative abundance, availability, and consumptive use of furbearer species.

Methods

Annual furbearer harvest is monitored using a combination of various data sources including sealing records, the Alaska Trapper Questionnaire, and interviews. The department collected harvest data for lynx, river otter, and wolverine by requiring trappers to have their furs sealed (5 AAC 92.170). Information collected at the time of sealing includes the trapper's name, harvest location, harvest date, pelt measurements for lynx and river otter, sex of the furbearer, method of take, and method of transportation used.

From RY11 to RY18, the department collected marten carcasses and harvest information from trappers. Staff performed necropsies on these specimens to analyze sex and age structure, diet, and fecundity.

Staff also sent physical and electronic versions of the Alaska Trapper Questionnaire to trappers in Units 12 and 20E through the statewide furbearer management program. Trappers were asked to rate species abundance as scarce, common, or abundant, and assess population trends based on field observations along their trapline. Information and perceptions about overall furbearer abundance and trapping effort, methods, and pressure were collected. Interviews with long-term trappers and area pilots were also conducted.

Season and Bag Limit

In Units 12 and 20E, furbearers that may be taken with a resident or nonresident trapping license are beaver, coyote, red fox, lynx, marten, mink, weasel, muskrat, river otter, squirrel, marmot, wolverine, and wolf (though wolves are not detailed in this report). Furbearers that are either defined as fur animals (beaver, coyote, red fox, lynx, and squirrel) or big game animals (wolf and wolverine) may be taken with a resident or nonresident trapping license under trapping regulations or with a hunting license under hunting regulations.

In addition to state seasons, there are also federal seasons in Units 12 and 20E with bag limits applicable on federal lands for residents meeting the customary and traditional use determination for select species (beaver, coyote, fox, lynx, wolverine, and muskrat).

Trapping seasons and bag limits in Units 12 and 20E during RY17–RY21:

Species	Trapping season	Bag limit
Beaver	15 Sep–10 Jun	No limit
Coyote	15 Oct–30 Apr	No limit
Red fox	1 Nov–15 Mar	No limit
Lynx	1 Nov–15 Mar	No limit
Marten	1 Nov–28 Feb	No limit
Mink and weasel	1 Nov–28 Feb	No limit
Muskrat	1 Nov–10 Jun	No limit
River otter	1 Nov–15 Apr	No limit
Wolverine	1 Nov–15 Mar	No limit

Hunting seasons and bag limits in Units 12 and 20E during RY17–RY21:

Species	Season	Bag limit
Coyote	No closed season	No limit
Red fox	1 Sep–15 Mar	10 red foxes; no more than 2 red foxes may be taken prior to 1 Oct
Lynx	1 Nov–15 Mar	2 lynx
Wolverine	1 Sep–31 Mar	1 wolverine

Results and Discussion

Harvest by Hunters-Trappers

LYNX

Lynx harvest in the region is linked to fluctuations in their population, which follow 8–11-year cycles driven by the abundance of their primary prey, the snowshoe hare. Lynx numbers typically lag behind hare peaks by 1–3 years, and declines in hare numbers lead to reduced lynx reproduction and survival and increased dispersal (Arnold et al. 2024).

Starting in 2015, snowshoe hare pellet count surveys conducted in Unit 12 indicated an increase in pellet numbers (Woodruff 2022). The snowshoe hare population peaked during 2018 with an estimated 7.44 hares/acre (3.01 hares/hectare [ha]) but steadily declined to an estimated 0.09 hares/acre (0.35 hares/ha) in 2021. Lynx harvests in Unit 12 mirrored a similar pattern, rising from 110 in RY15 to an apex of 531 in RY17 before steadily declining to a low of 30 by RY21 (Fig. 3 and Table 1). Following the peak in Unit 12, neighboring units also experienced increased harvests within 1–3 years. In Unit 20E, lynx harvests increased from 19 in RY16 to a high of 118 in RY19, then decreased to 15 by RY21 (Table 2). Over the reporting period (RY17–RY21), a total of 1,227 lynx were harvested in Unit 12 and 396 in Unit 20E. According to the Alaska Trapper Report, lynx overtook marten as the species most economically important to trappers during RY19–RY21 (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022).

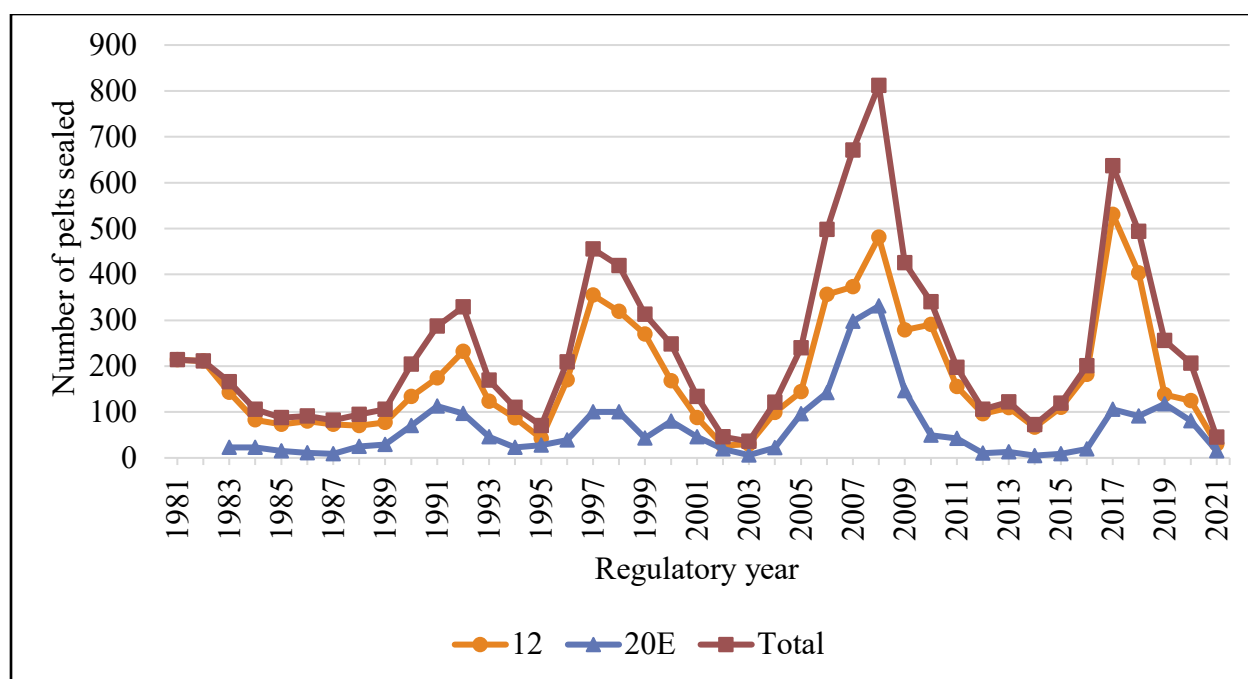


Figure 3. Number of lynx sealed in Units 12 and 20E, regulatory years 1981–2021, Interior Alaska.

Table 1. Unit 12 lynx harvest, regulatory years 2017–2021, Interior Alaska.

Regulatory year	Reported harvest					Method of take					
	Adult	Juvenile ^a	(%) ^{a,b}	Unk	Total	Trap/snare (%)	Shot (%)	Unk (%)			
2017	367	129	26	35	531	481	91	21	4	29	5
2018	282	103	27	18	403	373	93	30	7	0	–
2019	67	48	42	23	138	91	66	39	28	8	6
2020	45	42	49	38	125	73	58	50	40	2	2
2021	9	4	31	17	30	11	37	19	63	0	0

Note: En dashes indicate no data.

^a Kittens are determined as lynx with pelt lengths ≤ 36 " (Stephenson and Karczmarczyk 1989).

^b Harvest of unknown age is not included in percentage.

Table 2. Unit 20E lynx harvest, regulatory years 2017–2021, Interior Alaska.

Regulatory year	Reported harvest					Method of take					
	Adult	Juvenile ^a	(%) ^{a,b}	Unk	Total	Trap/snare (%)	Shot (%)	Unk (%)			
2017	77	29	27	0	106	104	98	2	2	0	–
2018	79	12	13	0	91	90	99	1	1	0	–
2019	104	13	11	1	118	112	95	5	4	1	1
2020	74	4	<1	3	81	73	90	7	9	1	1
2021	15	0	–	0	15	14	93	1	7	0	–

Note: En dashes indicate no data.

^a Kittens are determined as lynx with pelt lengths ≤ 36 " (Stephenson and Karczmarczyk 1989).

^b Harvest of unknown age is not included in percentage.

The proportion of kittens (defined as lynx with pelts measuring ≤ 36 "; Stephenson and Karczmarczyk 1989) in the annual harvest is a valuable indicator of lynx population status, reflecting growth and recruitment rates. During the reporting period, in Unit 12, the percentage of kittens in the harvest ranged from 26% to 49%, while in Unit 20E, it steadily decreased from 27% in 2017 to 0% in 2021, indicating a progression of low recruitment in the unit (Tables 1 and 2).

WOLVERINE

Wolverine are highly valued for their fur, making them a coveted species to harvest. In Units 12 and 20E, wolverines occur at low but stable densities, predominately inhabiting remote mountainous areas that provide optimal denning conditions and forest cover (Gardner et al. 2010). Historically, wolverine populations in these units have thrived during periods of high ungulate and wolf densities (Gardner 2001). During RY17–RY21, the wolverine population remained steady, as indicated by harvest data, observations, and the Alaska Trapper Report (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022). In Unit 12, annual wolverine harvest ranged from 13 to 28 per year ($\bar{x} = 17$) and in Unit 20E, annual harvest ranged from 4 to 15 per year ($\bar{x} = 10$; Tables 3 and 4). During the reporting period, total harvest in Unit 12 ($n = 86$) was consistent with the total harvest during the previous reporting period (RY12–RY16; $n = 83$), whereas total harvest in Unit 20E declined 32% from 77 harvested during RY12–RY16 to 52 harvested during RY17–RY21.

Table 3. Unit 12 wolverine harvest, regulatory years 2017–2021, Interior Alaska.

Regulatory year	Reported harvest					Method of take					
	Male	(%) ^a	Female	Unk	Total	Trap/snare	(%)	Shot	(%)	Unk	(%)
2017	11	85	2	0	13	12	92	1	8.0	0	–
2018	20	71	8	0	28	26	93	1	3.5	1	3.5
2019	11	79	3	1	15	15	100	0	–	0	–
2020	8	57	6	3	17	16	94	1	6.0	0	–
2021	9	69	4	0	13	11	84	1	8.0	1	8.0

Note: En dashes indicate no data.

^a Harvest of unknown age is not included in percentage.

Table 4. Unit 20E wolverine harvest, regulatory years 2017–2021, Interior Alaska.

Regulatory year	Reported harvest					Method of take					
	Male	(%)	Female	Unk	Total	Trap/snare	(%)	Shot	(%)	Unk	(%)
2017	7	58	5	0	12	11	92	1	8	0	–
2018	8	73	3	0	11	10	91	1	9	0	–
2019	10	67	5	0	15	14	93	1	7	0	–
2020	8	80	2	0	10	9	90	1	10	0	–
2021	2	50	2	0	4	4	100	0	–	0	–

Note: En dashes indicate no data.

Given that males have larger home ranges, harvest should not disproportionately target females, as this could impact the reproductive capacity of the population. A continuing trend of harvesting fewer than 50% males could indicate a potential disruption in breeding patterns and suggest unsustainable harvest rates (Gardner et al. 1993, Golden et al. 2007). Sex ratios in harvested wolverine in Units 12 and 20E reveal no significant trends indicating overharvest during the reporting period. The average percentage of males in the harvest was 72% in Unit 12, an 11% increase from the long-term trend of 65%. In Unit 20E, the average percentage of males was 67%, closely aligning with the long-term trend of 68% (Tables 3 and 4).

RIVER OTTER

River otter harvest during RY17–RY21 was low throughout the region due to limited abundance and low fur prices, making them a rare target of trappers (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022). During RY17–RY21, trappers continued to report river otters as scarce. A total of 13 river otters were harvested in Unit 12, while 1 was harvested in Unit 20E (Tables 5 and 6).

Table 5. Unit 12 river otter harvest, regulatory years 2017–2021, Interior Alaska.

Regulatory year	Reported harvest					Method of take					
	Male	(%)	Female	Unk	Total	Trap/snare	(%)	Shot	(%)	Unk	(%)
2017	0	–	0	0	0	0	–	0	–	0	–
2018	4	90	0	1	5	5	100	0	–	0	–
2019	1	50	1	0	2	2	100	0	–	0	–
2020	2	50	1	1	4	3	90	1	10	0	–
2021	2	100	0	0	2	2	100	0	–	0	–

Note: En dashes indicate no data.

Table 6. Unit 20E river otter harvest, regulatory years 2017–2021, Interior Alaska.

Regulatory year	Reported harvest					Method of take					
	Male	(%)	Female	Unk	Total	Trap/snare	(%)	Shot	(%)	Unk	(%)
2017	0	–	0	0	0	0	–	0	–	0	–
2018	0	–	0	0	0	0	–	0	0	0	–
2019	0	–	0	1	1	1	100	0	–	0	–
2020	0	–	0	0	0	0	–	0	–	0	–
2021	0	–	0	0	0	0	–	0	–	0	–

Note: En dashes indicate no data.

AMERICAN MARTEN

Marten pelts have long been the most valuable fur for local trappers, though trapping efforts and harvests in both Units 12 and 20E are influenced by fluctuations in marten availability and fur prices. Local trappers reported limited population recruitment during the reporting period. From 2011 to 2017, the department conducted necropsies on marten carcasses to assess population productivity. Data from the Interior-wide RY17 catch revealed a low juvenile-to-adult ratio of 2.5:1 and a below-optimal pregnancy rate of 44% (Nicholson et al. 2017). Data also suggested

that marten densities, juvenile recruitment, and reproductive output were highly variable and affected by environmental stressors and the availability of food sources like microtines, squirrels, birds, and berries (Keogh et al. 2022). Harvests were moderate in Unit 20E and low in Unit 12 from RY17 to RY19, declining further by RY20 due to low abundance and lower pelt values (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022). During the reporting period, trappers also reported an increase in the harvest of ermine incidentally taken in marten sets.

OTHER FURBEARERS

During RY17–RY21, direct harvest data were not available for other furbearers in Units 12 and 20E due to the absence of sealing requirements. Instead, harvest data and relative abundance were derived from the Alaska Trapper Report (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022) and interviews with local trappers and residents. Trappers reported moderate numbers and harvests of muskrats and beavers, while mink abundance and harvest remained scarce (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022). Red fox and coyote populations increased early in the reporting period, likely in response to higher prey and snowshoe hare densities. As the reporting period progressed, however, these populations moderated as heavy snowfalls and reduced grouse densities (Merizon and Carroll 2019) limited predator success.

Hunter and Trapper Residency and Success

Throughout RY17–RY21, an average of 12 hunters and trappers in Unit 20E reported trapping an average of 6 lynx per person per year, while 37 trappers and hunters in Unit 12 reported an average of 6 lynx per person per year. Wolverine harvests were recorded by an average of 9 hunters and trappers in Unit 12, with an average of 2 wolverines per person, and by an average of 5 hunters and trappers in Unit 20E, with an average of 2 wolverines per person. River otter success remained low, with 1–5 trappers harvesting 1–2 otters annually in Unit 12 during RY18–RY21 and only 1 successful trapper in Unit 20E harvesting 1 otter (Table 7).

Trappers across the Interior exhibited some of the highest rates of effort reported in the state during the reporting period. This region also reported the highest number of sets per trapline ($\bar{x}$ = 41 sets), the second-longest traplines ($\bar{x}$ = 23 mi), and some of the longest durations spent trapping each season ($\bar{x}$ = 10.7 weeks) in the state (Spivey 2019, 2020; Bogle 2021a, 2021b, 2022). Weather conditions were consistently cited by trappers as the main factor affecting their trapping effort and participation.

Harvest Chronology

The timing and patterns of furbearer harvest are influenced by a variety of factors, including seasonal weather conditions such as temperature, snow levels, and freeze-thaw periods in bodies of water, which regulate access and the harvest season. Environmental factors such as humidity and temperatures, which affect fur quality, also play a significant role in shaping harvest timing.

During the previous reporting period (RY12–RY16), lynx harvests generally began in November and December, peaked in January and February, and tapered off by March. During RY17–RY21, harvest timing followed this same general pattern; however, higher-than-normal levels of harvest also occurred in the fringe months of November and March due to increased lynx abundance and heightened trapper effort (Tables 8 and 9). Many trappers in the Interior expressed frustration

Table 7. Units 12 and 20E average lynx, wolverine, and river otter harvest per successful hunters and trappers, regulatory years 2017–2021, Interior Alaska.

Species	Regulatory year	Unit 12		Unit 20E	
		$\bar{x}$ harvest per trapper	Successful hunters and trappers	$\bar{x}$ harvest per trapper	Successful hunters and trappers
Lynx	2017	9.7	55	7.1	15
	2018	9.2	44	7.0	13
	2019	4.2	33	6.9	17
	2020	3.1	40	6.2	13
	2021	2.7	11	5.0	3
Wolverine	2017	1.9	7	2.4	5
	2018	2.0	14	1.8	6
	2019	1.9	8	1.9	8
	2020	1.7	10	2.0	5
	2021	1.6	8	1.3	3
River otter	2017	0.0	0	0.0	0
	2018	1.0	5	0.0	0
	2019	2.0	1	1.0	1
	2020	1.3	3	0.0	0
	2021	1.0	1	0.0	0

Table 8. Unit 12 lynx, wolverine, and river otter harvest chronology percent by month, regulatory years 2017–2021, Interior Alaska.

Species	Regulatory year									<i>n</i>
		Sep/Oct	Nov	Dec	Jan	Feb	Mar	Apr	Unk	
Lynx	2017	0	12	24	22	24	13	0	5	531
	2018	0	8	27	37	19	7	0	2	403
	2019	0	9	40	17	24	5	0	5	138
	2020	0	12	21	28	28	11	0	0	125
	2021	0	37	23	27	7	7	0	0	30
Wolverine	2017	0	0	23	8	31	38	0	0	13
	2018	0	0	29	39	32	0	0	0	28
	2019	0	0	13	27	27	33	0	0	15
	2020	6	0	12	24	47	12	0	0	17
	2021	8	0	46	8	15	23	0	0	13
River otter	2017	0	0	0	0	0	0	0	0	0
	2018	20	0	40	20	0	20	0	0	5
	2019	0	0	100	0	0	0	0	0	2
	2020	0	25	50	25	0	0	0	0	4
	2021	0	0	50	0	50	0	0	0	2

Table 9. Unit 20E lynx, wolverine, and river otter reported harvest chronology percent by month, regulatory years 2017–2021, Interior Alaska.

Species	Regulatory year	Sep/Oct	Nov	Dec	Jan	Feb	Mar	Apr	<i>n</i>
Lynx	2017	2	9	17	35	22	16	0	96
	2018	0	23	30	31	12	4	0	109
	2019	0	25	33	14	18	8	1	67
	2020	1	1	30	41	19	9	0	110
	2021	0	7	67	20	0	7	0	182
Wolverine	2017	8	17	25	17	33	0	0	10
	2018	9	0	0	9	73	9	0	21
	2019	7	33	20	13	7	20	0	16
	2020	10	10	10	50	20	0	0	19
	2021	0	0	25	50	25	0	0	17
River otter	2017	0	0	0	0	0	0	0	0
	2018	0	0	0	0	0	0	0	0
	2019	0	1	0	0	0	0	0	1
	2020	0	0	0	0	0	0	0	0
	2021	0	0	0	0	0	0	0	0

over other trappers setting lines during the early and late parts of the season when pelts were not prime (Spivey 2019, 2020). Additionally, some trappers in Unit 20E delayed setting traplines near road-accessible areas to avoid the increased numbers of Fortymile caribou hunters (Bogle 2021b).

In Unit 12, wolverine harvests occurred from December through March, with a higher percentage in February (Table 8). In Unit 20E, wolverine harvests started early in November but mostly increased from December to February before leveling off in March (Table 9). Trappers noted that prime wolverine pelts generally extended into March. Any harvest occurring in September is typically under hunting regulations and is incidental during moose and caribou hunting seasons. Periods for marten, ermine, mink, river otter, and red fox harvests typically occur in late fall to early winter when furs are in their best condition. Muskrat hunting and trapping generally extends into the spring season.

Transport Methods

From RY17 to RY21, most trappers (69%) in Units 12 and 20E primarily relied on snowmachines to access their traplines. In both units, highway vehicles were the second-most common method for lynx harvest (Tables 10 and 11). Off-road access in Unit 12 is supported by the Alaska Highway and Tok-Cut-off Highway, while in Unit 20E, access is primarily concentrated around the community of Eagle and the southern portion of the unit, due to limited winter road maintenance on the Taylor Highway. Compared to the previous reporting period (RY12–RY16), the use of airplanes decreased in both units, with more reliance on ground-based methods such as dog sleds, skis, and, in areas closer to roads, snowshoes.

Other Mortality

Rates of natural mortality are unknown for furbearers in Units 12 and 20E.

Table 10. Unit 12 percent harvest by transport method, regulatory years 2017–2021, Interior Alaska.

Species	Regulatory year	Airplane	Boat	ATV ^a	Snow-machine	ORV ^b	Highway vehicle	Dog sled/skis/snowshoes	Unk	<i>n</i>
Lynx	2017	1	<1	1	71	0	23	1	2	531
	2018	5	0	1	66	0	28	0	0	403
	2019	3	0	0	39	0	45	8	5	138
	2020	0	0	2	44	0	44	9	2	125
	2021	0	0	0	27	0	60	13	0	30
Wolverine	2017	8	0	0	92	0	0	0	0	13
	2018	0	0	0	93	0	4	0	4	28
	2019	0	0	0	67	0	7	27	0	15
	2020	12	0	6	71	0	0	12	0	17
	2021	15	8	0	46	0	8	23	0	13
River otter	2017	0	0	0	0	0	0	0	0	0
	2018	0	0	0	80	0	20	0	0	5
	2019	0	0	0	100	0	0	0	0	2
	2020	25	0	0	50	0	0	25	0	4
	2021	0	0	0	0	0	50	50	0	2

^a ATV refers to all-terrain vehicles.

^b ORV refers to off-road vehicles.

Table 11. Unit 20E percent harvest by transport method, regulatory years 2017–2021, Interior Alaska.

Species	Regulatory year	Airplane	Boat	ATV ^a	Snow-machine	ORV ^b	Highway vehicle	Dog sled/skis/snowshoes	Unknown	<i>n</i>
Lynx	2017	0	0	1	90	0	9	0	0	96
	2018	0	0	1	97	0	0	2	0	109
	2019	0	0	5	88	0	6	1	0	67
	2020	0	0	0	91	0	7	0	1	110
	2021	0	0	0	87	0	7	7	0	182
Wolverine	2017	17	0	8	58	0	0	0	17	10
	2018	27	0	0	55	0	0	18	0	21
	2019	7	0	0	53	0	40	0	0	16
	2020	10	0	0	60	0	30	0	0	19
	2021	0	0	0	100	0	0	0	0	17
River otter	2017	0	0	0	0	0	0	0	0	0
	2018	0	0	0	0	0	0	0	0	0
	2019	0	0	1	0	0	0	0	0	1
	2020	0	0	0	0	0	0	0	0	0
	2021	0	0	0	0	0	0	0	0	0

^a ATV refers to all-terrain vehicles.

^b ORV refers to off-road vehicles.

Alaska Board of Game Actions and Emergency Orders

During RY17–RY21, there were no applicable Alaska Board of Game actions or emergency orders concerning furbearer management in Units 12 and 20E.

Recommendations for Activity 2.1

The department will continue to seal lynx, wolverine, and river otter as mandated by 5 AAC 92.170, and will continue to collect harvest and population data for furbearer species using the Alaska Trapper Questionnaire, interviews, and other sources.

3. Habitat Assessment-Enhancement

Activities to assess or enhance habitat specifically for furbearers are currently not necessary to achieve the management goals or to evaluate codified objectives. The primary strategy to restore habitat diversity and productivity for all species in Units 12 and 20E is to maintain a near-natural fire regime as per the *Alaska Interagency Fire Management Plan: Fortymile Area* (Alaska Wildland Fire Coordinating Group 2016). Fire, used as a management tool, promotes a variety of vegetative successional stages and supports prey species which, in turn, influence habitat use by many furbearer species (Stephenson 1984, Paragai et al. 1996).

During RY17–RY21, the landscape of Units 12 and 20E exhibited a range of fire-driven successional stages, from early seral to late-successional forest stands. Between 2011 and 2021, wildfires burned approximately 2,656 mi² across the units, converting less than 10% of the landscape into an early successional stage. Historic wildfire records indicate that most burned stands (46%) were between 10 and 20 years old and were predominantly located in Unit 20E. Stands aged between 20 and 50 years accounted for 16%, while those older than 50 years represented 28% (Barnes et al. [n.d.]).

Early seral habitats (between 0 and 10 years post-fire) support increased densities of prey, such as microtines, which in turn attract mesopredators like red fox and eventually marten. Similarly, as seral habitats age, they foster snowshoe hare numbers due to well-developed understory growth, providing foraging opportunities for lynx in older-aged stands (Stephenson 1984, Gardner 2001, Fisher and Wilkinson 2005). Lynx radiocollared by Arnold et al. (2024) on Tetlin National Wildlife Refuge in Unit 12 during RY17–RY21 consistently favored burns of an intermediate age (between 30 and 50 years old).

Along with the impacts of wildfires, past logging operations have also shaped habitat structure in Unit 12. Since 2008, a cooperative timber harvest project between ADF&G and the Alaska Department of Natural Resources developed for the Tok river valley has created over 1,000 acres of pocketed timber clearcuts, managed with post-logging treatments to encourage hardwood regeneration that mimics natural forest succession. During RY22–RY26, an additional 800 acres of land within the Tok river valley are planned for similar harvest and reforestation practices. These coordinated habitat management efforts are designed to enhance and sustain a productive landscape that supports the habitat needs of all species, including furbearers.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

There were no nonregulatory problems for furbearer management in Units 12 or 20E during RY17–RY21.

Data Recording and Archiving

Harvest data is stored on WinfoNet (ADF&G's Wildlife Information Network). Original sealing records are stored in file folders located in the Tok area office.

Agreements

There were no agreements pertaining to the department's management of furbearers in Units 12 or 20E during RY17–RY21.

Permitting

No permits were needed for furbearer management in Units 12 or 20E during RY17–RY21.

Conclusions and Management Recommendations

The department met the furbearer management objective (M1) during the reporting period (RY17–RY21). While abundance estimates for individual furbearer species were not obtained and sustainable harvest rates remain undetermined, there were no indications that any populations were adversely impacted by current harvest levels. Hunting and trapping opportunities continue to be supported by viable furbearer populations (G1).

The department recommends that furbearer harvest levels be continually monitored and used as a coarse index to infer population trends. Although overall trapping effort was not directly measured during the reporting period, sealing data and input from area trappers indicated that trapping effort and harvest fluctuated in response to cyclical population highs and lows, particularly for lynx. Harvest data for wolverine and river otter suggest stable populations for these species. We recommend ongoing monitoring of trapper-reported marten and lynx harvest for the duration of the current population low to assist the department in tracking population trends and identifying challenges that may affect sustainable harvest levels.

The department will continue to support hunting and trapping opportunities by sealing furs, collecting harvest data, and gathering public input to assess both past and current trends in furbearer availability and use.

II. Project Review and RY22–RY26 Plan

Review of Management Direction

MANAGEMENT DIRECTION

There are no changes to the management direction for furbearers in Units 12 and 20E for RY22–RY26. The department will continue to report the harvest of lynx, river otter, and wolverine, and

to collect information on other furbearers from the Alaska Trapper Questionnaire and interviews as these data may be useful for trappers, advisory committees, and the Board of Game.

GOALS

G1. Provide the greatest opportunity to participate in hunting and trapping furbearers.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

C1. Units 12 and 20E have a positive finding for customary and traditional use of furbearers. The amount reasonably necessary for subsistence uses is 90% of the harvestable portion for each furbearer species (5 AAC 99.025(13)).

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

M1. Maintain viable populations of furbearers that will support annual hunting and trapping harvest.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

There are no activities for population status or trend management of furbearers in Units 12 and 20E planned for RY22–RY26.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor furbearer harvest trends.

Data Needs

No change from RY17–RY21.

Methods

No change from RY17–RY21.

3. Habitat Assessment-Enhancement

No activities are planned for furbearer habitat assessment or enhancement in Units 12 or 20E during RY22–RY26.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

No nonregulatory problems are expected for furbearer management in Units 12 or 20E during RY22–RY26.

Data Recording and Archiving

No change from RY17–RY21.

Agreements

No change from RY17–RY21.

Permitting

No change from RY17–RY21.

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