

Furbearer Management Report and Plan, Game Management Unit 1A:

Report Period: 1 July 2012–30 June 2017, and
Plan Period: 1 July 2017–30 June 2022

Ross Dorendorf



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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 Stephen Bethune, Acting Management Coordinator for the Division of Wildlife Conservation.

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Cover Photo: A river otter pair plays and shares a grayling by the Tok River, AK. ©2019 ADF&G. Photo by Sara Germain.

Contents

Purpose of this Report.....	1
I. RY12–RY16 Management Report	1
Management Area.....	1
Summary of Status, Trend, Management Activities, and History of Furbearers in Unit 1A.....	3
Management Direction.....	4
Existing Wildlife Management Plans	4
Goals	4
Codified Objectives	4
Amounts Reasonably Necessary for Subsistence Uses	4
Intensive Management	4
Management Objectives.....	5
Management Activities	5
1. Population Status and Trend	5
2. Mortality-Harvest Monitoring and Regulations.....	6
3. Habitat Assessment-Enhancement.....	14
Nonregulatory Management Problems or Needs	15
Data Recording and Archiving	15
Agreements	15
Permitting.....	15
Conclusions and Management Recommendations	15
II. Project Review and RY17–RY21 Plan	16
Review of Management Direction	16
Management Direction.....	16
Goals	16
Codified Objectives	16
Amounts Reasonably Necessary for Subsistence Uses	16
Intensive Management	16
Management Objectives.....	16
Review of Management Activities.....	17
1. Population Status and Trend	17
2. Mortality/Harvest Monitoring and Regulations.....	17
3. Habitat Assessment-Enhancement.....	17
Nonregulatory Management Problems or Needs	18
Data Recording and Archiving	18
Agreements	18
Permitting.....	18
References Cited	18

List of Figures

Figure 1. Map of Game Management Unit 1A boundaries, Southeast Alaska.	2
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List of Tables

Table 1. Harvest and method of take for marten sealed in Unit 1A, Alaska, RY12–RY16.	8
Table 2. Average furbearer prices in U.S. dollars for RY07–RY16 based on Fur Harvesters of America auctions 2007–2016 (Fur Harvesters Auction Incorporated 2016).....	9
Table 3. Harvest and method of take for river otters sealed in Unit 1A, Alaska, RY12–RY16.	9
Table 4. Harvest and method of take for beavers sealed in Unit 1A, RY12–RY16, Alaska.	10
Table 5. Harvest and method of take for wolverine sealed in Unit 1A, RY12–RY16, Alaska.	11
Table 6. Unit 1A beaver, river otter, marten, and wolverine harvest chronology percent by month, Alaska, RY12–RY16.	13
Table 7. Unit 1A beaver, river otter, marten, and wolverine harvest percent by transportation method, RY12–RY16, Alaska.	14

Purpose of this Report

This report provides a record of survey and inventory management activities for furbearers in Unit 1A 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., RY10 = 1 July 2012–30 June 2013). 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 Division of Wildlife Conservation 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

Unit 1A encompasses 5,252 mi² (13,603 km²) of the southern mainland and adjacent islands south of Lemesurier Point, including all drainages into Behm Canal, excluding all drainages into Ernest Sound, and bounded to the east and south by the Canadian border. The unit is bounded to the west by Clarence Strait. Larger islands included in the unit are Revillagigedo, Annette, and Gravina islands (Fig. 1). The Ketchikan Gateway Borough has an estimated population of 13,865 (U.S. Census Bureau 2018). Smaller outlying communities include Metlakatla (estimated population of 1,375), Hyder (estimated population 87), and Meyers Chuck (estimated population 25). Mean temperatures range from a low of 30°F (-1°C) in January to a high of 64°F (18°C) in August with 141 inches (358 cm) of rain annually (U.S. Climate Data 2019). The dominant habitat type in Unit 1A below approximately 2,000 ft. (~600m) elevation is temperate rain forest consisting of Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), red cedar (*Thuja plicata*), and Alaska yellow cedar (*Chamaecyparis nootkatensis*). Other lower elevation habitats include muskegs, stands of red alder (*Alnus rubra*) and black cottonwood (*Populus balsamifera trichocarpa*) along major rivers and riparian areas. Old-growth forests are interspersed with a patchwork of even-aged forest stands at different successional stages resulting from extensive clear-cut logging and a few natural windthrow events. Mainland areas above 2,000 ft. (~600m) elevation are predominately rock, ice, and open alpine.

Most land in Unit 1A is administered by the U. S. Forest Service, including the 2.3 million-acre Misty Fjords National Monument. This monument is the largest wilderness area in Alaska's national forests and the second largest in the nation. There are also state lands, Alaska Mental Health Trust lands, private lands, several Alaska Native corporation inholdings, federal Indian reservation lands including Annette Island and surrounding marine waters, and one large private mining parcel, inside but not included in the Misty Fjords Monument.

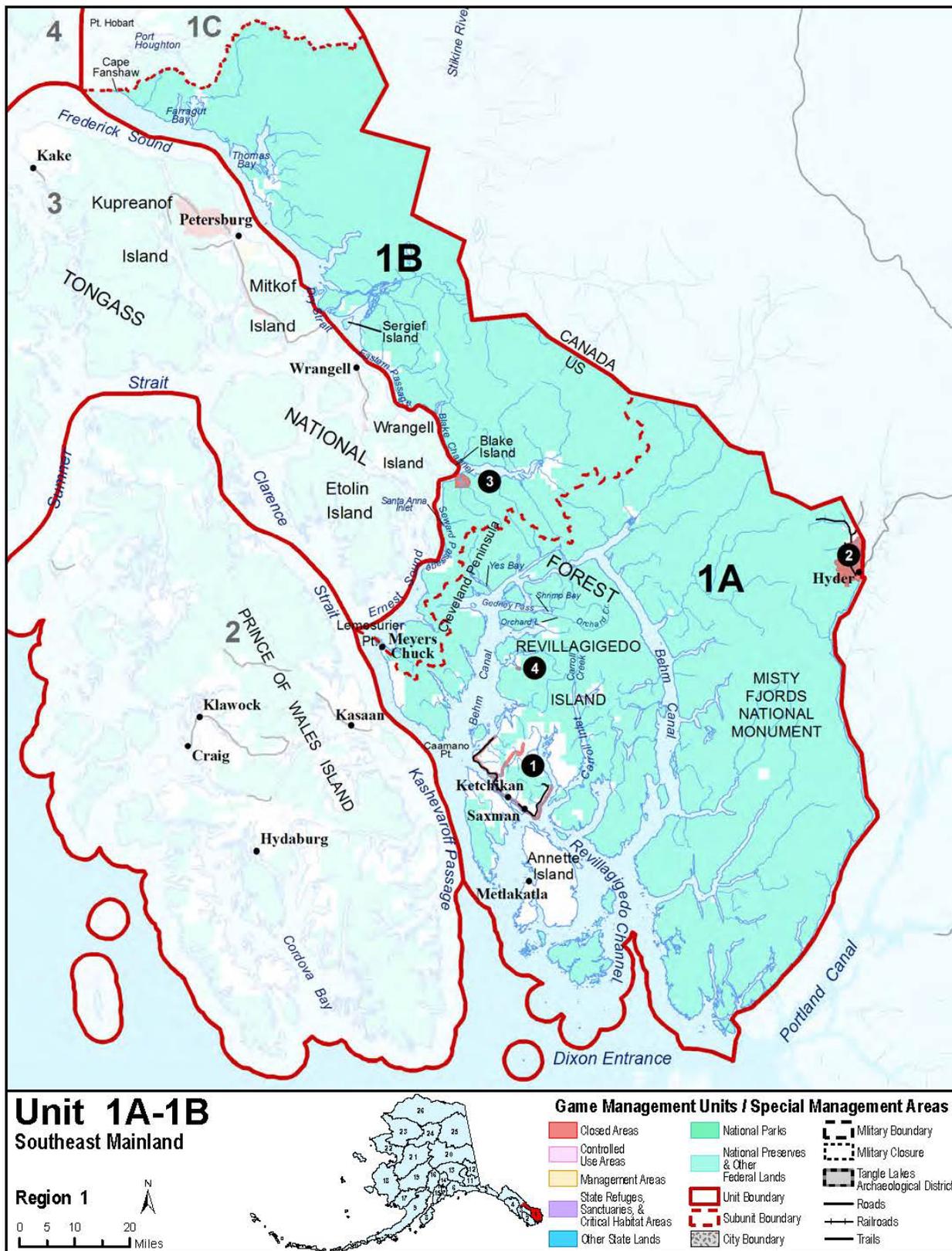


Figure 1. Map of Game Management Unit 1A boundaries, Southeast Alaska.

Summary of Status, Trend, Management Activities, and History of Furbearers in Unit 1A

Trapping effort is influenced by multiple social and external factors. Social factors include human conflict, difficulty accessing land, and low trapper recruitment (Gese 2001; Siemer et al., 1994; Zwick et al. 2002). Furbearer abundance, fur prices, fuel prices, and weather conditions are external factors that influence trapping effort annually (Parr 2017, DeVink et al. 2011, Yom-Tov et al. 2007, Gosselink et al. 2003). These factors along with life history traits, difficulty of catch, density and distribution of the species, among other factors, influence trapping effort.

American marten (*Martes Americana*; hereafter referred to as marten) are the most sought-after species for trapping in Southeast Alaska. Marten are abundant, easy to trap, their pelts are easy to process, and are valuable in the fur market. Marten research in southern Southeast Alaska has demonstrated the importance of old-growth stands for foraging, travel corridors, and shelter (Schumacher 1999). Marten also preferred larger diameter timber structures for dens and resting sites (Hauptman 1979, Simon 1980, Hargis and McCullough 1984, Wynne and Sherburne 1984, Schumacher 1999, Flynn and Schumacher 2016). Conversations with trappers validate preference by marten for old-growth stands and their avoidance of clear-cuts. Logging in Unit 1A continues to remove unevenly aged old-growth habitat required by marten. As a result, we believe the area's capacity to support current marten populations will decline over time.

Southeast Alaska provides excellent habitat for river otters (*Lutra canadensis*) and a variety of forage that supports plentiful harvest (Larsen 1984). Because river otters are difficult to trap, and pelt preparation is time consuming, prices must be high to substantially influence harvest levels.

Beaver (*Castor canadensis*) prices for this reporting period were low, likely contributing to low harvests. Beavers are relatively easy to trap but the amount of work needed to prepare a pelt and low prices will continue trends of minimal harvest unless there is a substantial increase in pelt price. Beavers are commonly trapped for use as bait for trapping marten and wolves which helps to maintain a steady, albeit low harvest independent of fur prices. However, when certain trappers don't trap for a season, reduction in overall catch is not unusual. Most communities have individual trappers that put forth much greater effort, and catch more animals, than most other trappers from the same community combined (Dorendorf et al. 2016).

Ample opportunity exists to trap mink in Unit 1A with an expanse of suitable coastline and riverine habitat. They consistently ranked as the second most important species for trapping in Southeast Alaska during the reporting period (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018). Trappers that trap regardless of fur prices continue to trap mink, while those who wait for higher prices do not. Trappers reported mink as "common" or "abundant" during the reporting period (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018).

Wolverines (*Gulo gulo*), inhabit only the mainland portion of Unit 1A, and few are typically taken annually. Because of the low density of wolverines in the unit, trappers do not generally target them, and harvest is mostly incidental to wolf or marten trapping. Since all wolverine harvest in Unit 1A comes from the mainland, catch is limited to trappers who are willing to travel by boat. Distance and willingness to pay associated boat gas prices are limiting factors.

This, in combination with wolverines naturally residing at low densities, accounts for the “scarce” abundance finding in the trapper questionnaire (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018).

Short-tailed weasel (*Mustela erminea*) populations fluctuate annually primarily due to variation in prey availability (Erlinge 1983, Sittler 1995). Harvest continues to be mainly limited to incidental take while targeting other furbearers, primarily marten. Short-tailed weasels typically live close to bodies of water in riparian habitat and are distributed throughout the region (MacDonald and Cook 2008). The Department does not currently have information to determine why short-tailed weasels were determined as “scarce” region wide in the trapper questionnaire, despite their region wide occupancy (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018).

Similar to short-tailed weasels, red squirrels (*Tamiasciurus hudsonicus*) are rarely targeted by trappers and most commonly caught incidentally in marten sets. Red fox (*Vulpes vulpes*) and lynx (*Lynx canadensis*) are rare and coyotes (*Canis latrans*) are absent in Unit 1A. Few muskrats (*Ondatra zibethicus*) inhabit Unit 1A, and harvest is typically low and incidental to beaver trapping. Mountain lions (*Puma concolor*) are occasionally observed along the mainland and on the Cleveland Peninsula, but we currently have no open trapping or hunting season for mountain lions.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Greater Alaska Furbearer Management Plan (ADF&G 1976).

GOALS

To provide the following:

1. An optimum harvest of furbearers.
2. The greatest opportunity to participate in hunting and trapping furbearers.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game (BOG) has made a positive subsistence finding for furbearers in all units, including Unit 1A, with a harvestable surplus to be 90% of the harvestable portion (5 AAC 99.025(13)).

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

- Regulate seasons and bag limits to maintain viewable and harvestable populations of beaver, lynx, marmot, marten, mink, muskrat, river otters, short-tailed weasel, squirrel, and wolverine.
- Seal harvested beaver, lynx, marten, river otter, and wolverine pelts as they are presented for sealing.
- Contact reliable observers for general information about the status and trends of furbearer populations, including the use of an annual trapper survey.
- Necropsy beaver, lynx, marmot, marten, mink, muskrat, river otters, short-tailed weasels, squirrel, and wolverine carcasses as needed to determine disease, parasites, pregnancies, record morphometric data, and collect tissue samples.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1

Contact reliable sources for information on furbearer distribution and abundance and record occupancy during other survey efforts.

Data Needs

Observations from reliable members of the public provide insight into local trends in abundance. For example, fur trappers that have trapped the same trapline for many years can provide valuable insight. Incidental sightings of furbearers while conducting surveys or travelling to work locations help with presence-absence information on all species of furbearers.

Methods

Observations from the public are incorporated into furbearer management reports. Members of the public contact our area office via phone, e-mail, or in person to provide details on their observations. Agency sightings are recorded and reported when considered significant. The annual trapper questionnaire provides valuable information on harvest, trapping methods, and other information on trapping in the region.

Results and Discussion

Members of the U.S. Forest Service reported several sightings of red foxes in the Unuk River drainage in RY12.

Recommendations for Activity 1.1

Continue. Actively seek information from trappers and others that observe furbearers. Continue recording locations of furbearer sightings by agency staff.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1

Data Needs

Harvest must be assessed to understand impacts of harvest and trends in abundance.

Methods

The Department collected harvest data by sealing hides of beaver, lynx, marten, river otter, and wolverine taken by trappers and hunters. We recorded location and date of harvest, method of take, mode of transportation, and sex of animals caught. In the case of lynx, river otter, and beaver, hides were measured. Sealing must occur by Department staff or a State appointed sealer within 30 days of the close of the season. These data are entered into the Department's Wildlife Information Network database (Winfonet). Harvest data were summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY15 = 1 July 2015–30 June 2016).

Hunting Seasons and Bag Limits RY12–RY16

Species	Season	Bag Limit
Beaver	No open season	
Coyote	1 Sept–30 Apr	2 coyotes
Fox, Red	No open season	
Lynx	No open season	
Squirrel and Marmot	No closed season	No limit
Wolverine	1 Sep–1 Feb	1 wolverine

Trapping Seasons and Bag Limits RY12

Species	Season	Bag Limit
Beaver	10 Nov–30 Apr	No limit
Coyote	1 Dec–15 Feb	No limit
Fox, Red	1 Dec–15 Feb	No limit
Lynx	1 Dec–15 Feb	No limit
Marten	1 Dec–15 Feb	No limit
Mink and Weasel	1 Dec–15 Feb	No limit
Muskrat	1 Dec–15 Feb	No limit
River Otter	1 Dec–15 Feb	No limit
Squirrel and Marmot	No closed season	No limit
Wolverine	10 Nov–15 Feb	No limit

Trapping Seasons and Bag Limits RY13, RY14, RY15

Species	Season	Bag Limit
Beaver	10 Nov–30 Apr	No limit
Coyote ^a	1 Nov–30 Apr	No limit
Fox, Red	1 Dec–15 Feb	No limit
Lynx	1 Dec–15 Feb	No limit
Marten	1 Dec–15 Feb	No limit
Mink and Weasel	1 Dec–15 Feb	No limit
Muskrat	1 Dec–15 Feb	No limit
River Otter	1 Dec–15 Feb	No limit
Squirrel and Marmot	No closed season	No limit
Wolverine	10 Nov–15 Feb	No limit

^a Coyote season extended

Trapping Seasons and Bag Limits RY16

Species	Season	Bag Limit
Beaver	10 Nov–30 Apr	No limit
Coyote	1 Nov–30 Apr	No limit
Fox, Red	1 Dec–15 Feb	No limit
Lynx	1 Dec–15 Feb	No limit
Marten	1 Dec–15 Feb	No limit
Mink and Weasel	1 Dec–15 Feb	No limit
Muskrat	1 Dec–15 Feb	No limit
River Otter	1 Dec–15 Feb	No limit
Squirrel and Marmot	No closed season	No limit
Wolverine ^a	10 Nov–28 Feb	No limit

^a Wolverine season extended.

Results and Discussion

Harvest by Hunters-Trappers

AMERICAN MARTEN

Harvest averaged 298 (range = 220–475) during this reporting period (RY 12–RY16, Table 1). This is a slight increase compared to the 10-year average of 270 (range = 107–475). All marten were trapped or snared during the reporting period. The high harvest in RY13 coincides with high fur prices which likely increased overall trapping effort. Marten pelt value averaged \$67.35 during the reporting period from RY12–RY16 (range = \$34.47–\$123.70; Table 2) providing incentive to trap. This was higher than the 10-year (RY07–RY16) average of \$60.09 (range = \$31.31–\$123.70; Table 1). In RY13 there were 19 trappers who collectively trapped 475 marten compared to RY15 which had 20 trappers but only 243 marten harvested. This indicates a likely increase in effort during RY13 when compared to a similar number of trappers in RY15. The population may have accounted for increased catch; however, this seems unlikely without an increase in trapper effort. Respondents to the trapper questionnaire described marten as

“common” or “abundant” throughout the reporting period (RY 2012–2016; ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018).

Table 1. Harvest and method of take for marten sealed in Unit 1A, Alaska, RY12–RY16.

Regulatory Year	Total harvest	Successful Participants	Percent Males	Percent Female	Percent Unknown	Method of Take			
						Shot	Trapped	Snared	Unknown
RY12	293	17	56	36	8	0	257	31	5
RY13	475	19	63	37	0	0	469	0	6
RY14	220	14	65	25	10	0	190	0	30
RY15	243	20	67	33	0	0	242	1	0
RY16	260	10	60	37	3	0	225	0	35

RIVER OTTER

Harvest averaged 43 (range = 19–76) during this reporting period (Table 3). This is a slight increase compared to the 10-year average of 39 (range = 18–78). During the reporting period, most river otters were trapped and only a few were shot in Region I (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018). From conversations with trappers, a combination of trapping and shooting are used to take river otters, however, the majority are taken with traps. Firearms are used opportunistically rather than as the principle method for harvesting river otter.

Average price of river otters was up slightly this reporting period from RY12–RY16 at \$56.62 (range = \$21.05–\$86.17; Table 2) compared to the 10-year average of \$50.64 (range = \$21.05–\$86.17; Table 2). For example, harvest dropped from a high of 77 in RY13 to 19 in RY16 (Table 3). This is likely due to a drop in effort (16 successful trappers in RY13 compared to 6 in RY16; Table 3) because of low fur prices. Prices were high in 2013 which likely increased total trapping effort, compared to the low prices observed in 2016. Trappers described river otters as “common” or “abundant” throughout the reporting period (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018).

BEAVER

Harvest averaged 47 (range = 37–65) during this reporting period (Table 4). This is an increase compared to the 10-year average of 32 (range = 6–65). Beavers are difficult to sex until after skinned thus there is minimal information available on sex ratios in the harvest. Traps and snares were the main methods reported for taking beavers with a small percentage shot in Region I during this reporting period (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018). Traps and snares were also the most common methods used in Unit 1A. During the reporting period, 33% of harvest were kits and 67% adults (Table 4; Payne 1979). Similar to river otters, firearms are typically used for opportunistic harvest of beavers in Unit 1A. Beavers are typically easier to harvest with traps given their nocturnal activity patterns. The average price of fur for beavers during the reporting period was \$16.98 (range = \$9.40–\$24.96; Table 2) which is slightly down from the 10-year average of \$17.03 (range = \$9.40–\$24.96; Table 2). Trappers described beavers as “common” from RY12–RY14, then as “scarce”.

Table 2. Average furbearer prices in U.S. dollars for RY07–RY16 based on Fur Harvesters of America auctions 2007–2016 (Fur Harvesters Auction Incorporated 2016).

Species	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Beaver	21.24	22.00	13.56	12.03	16.54	20.76	24.96	16.63	13.15	9.40
Weasel ^a	5.92	6.12	4.25	4.86	3.77	4.50	3.80	4.74	4.74	2.72
Fisher	76.37	64.33	37.84	56.00	41.16	83.47	121.60	78.35	67.83	30.37
Marten	63.11	91.67	33.33	31.31	44.71	74.48	123.70	57.33	46.77	34.47
Mink	14.34	12.19	7.90	12.93	18.00	21.72	24.07	9.83	8.75	7.33
Muskrat	3.94	2.68	3.80	5.85	9.27	9.05	12.15	10.15	4.25	2.07
Squirrel ^b	1.34	1.67	1.23	N/A	1.06	1.03	0.94	0.66	0.38	0.70
River otter	49.50	42.58	36.48	30.50	64.22	83.80	86.17	50.34	41.72	21.05
Wolf	127.62	200.25	151.15	197.95	180.96	198.46	260.45	190.98	108.50	169.04
Wolverine	246.23	293.95	192.29	246.31	250.47	266.74	260.60	259.23	230.43	218.36

^a Long-tailed (*Mustela frenata*), short-tailed (*Mustela erminea*) and least weasel (*Mustela nivalis*).

^b North American Sciuridae spp. (Baker et al. 2003).

Table 3. Harvest and method of take for river otters sealed in Unit 1A, Alaska, RY12–RY16.

Regulatory Year	Total harvest	Successful Participants	Percent Males	Percent Female	Percent Unknown Sex	Percent Juvenile ^b	Percent Adult ^a	Percent Unknown Age	Method of Take			
									Shot	Trapped	Snared	Unknown
RY12	47	13	62	36	2	28	44	28	2	45	0	0
RY13	77	16	45	35	20	51	48	1	3	74	0	0
RY14	43	13	53	35	12	44	42	14	0	43	0	0
RY15	30	11	47	43	10	57	40	3	0	23	7	0
RY16	19	6	47	53	0	47	37	16	0	19	0	0

^a Juvenile river otters measure (length) <42", adults = ≥4

Table 4. Harvest and method of take for beavers sealed in Unit 1A, RY12–RY16, Alaska.

Regulatory Year	Total harvest	Successful Participants	Percent Kits ^a	Percent Adults ^b	Percent Unknown	Method of Take			
						Shot	Trapped	Snared	Unknown
RY12	37	10	11	78	11	0	32	5	0
RY13	38	5	42	56	2	0	38	0	0
RY14	65	12	14	86	0	0	63	2	0
RY15	56	6	32	66	2	1	54	1	0
RY16	41	8	59	37	5	0	36	5	0

^a Beavers measuring (length + width) \leq 52" = Kit

^b Beavers measuring (length + width) $>$ 52" = Adult

from RY15–RY16 which happened when the survey changed from a portion of Region I (Units 1A and 2) to all of Region I (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018). However, populations of beaver in Unit 1A appear stable as the number of beavers caught per trapper remains stable (Table 4). RY16 saw a reduction in catch per successful trapper from the previous two regulatory years (RY14 and RY15).

WOLVERINE

Harvest was similar between the 10-year reporting period and this reporting period. The average for both time periods was 2 wolverines (Table 5; RY12–16 range = 1–7; 10-year range 1–7). All wolverines were trapped except for one shot in RY12. Fur prices for wolverines remained steady and high with a 10-year average of \$246.46 (Table 2). Trappers reported wolverines as “scarce” throughout the reporting period (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018).

FISHER

There was no reported fisher harvested for this reporting period.

LYNX

There was no reported lynx harvested for this reporting period.

Table 5. Harvest and method of take for wolverine sealed in Unit 1A, RY12–RY16, Alaska.

Regulatory Year	Total Harvest	Successful Participants	Percent Males	Percent Female	Percent Unknown	Method of Take			
						Shot	Trapped	Snared	Unknown
RY12	1	1	100	0	0	1	0	0	0
RY13	7	2	14	86	0	0	7	0	0
RY14	1	1	0	0	100	0	1	0	0
RY15	0	0	0	0	0	0	0	0	0
RY16	1	1	0	100	0	0	1	0	0

OTHER SPECIES

There are no harvest data for coyote, red fox, red squirrel, mink, muskrat, or short-tailed weasel since sealing is not required. Based on conversations with trappers and the limited data we receive from the trapper questionnaire, no coyote or red fox were captured during the reporting period. Squirrel and short-tailed weasel were caught as bycatch while targeting marten. Few muskrats were taken. Mink (*Mustela vison*) pelt prices have remained low and stable over the past decade. The average price of \$14.34 (range = \$7.33–\$24.07) during this reporting period from RY12–RY16 was higher than the average price of \$13.71 (range \$7.33–\$24.07) over the past 10 years (Table 2). Fur prices for short-tailed weasel remained steady and low with a 10-year average of \$4.54. Trappers reported short-tailed weasels as “common” from RY12–RY14, then as “scarce” from RY15–16, when reporting changed from a portion of Region I Units 1A and 2) to all of Region I (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018). Fur

prices for red squirrels remain steady and low with a 10-year average of \$1.00. Trappers reported red squirrels as “common” throughout the reporting period (ADF&G 2013a, ADF&G 2013b, Parr 2016, Parr 2017, Parr 2018). Conversations with trappers did not yield concerns over the abundance of these species.

Hunter Residency and Success

The majority of harvest came from local residents (90%). Resident Alaskans from other areas of the state made up 9.9% of harvest, and nonresidents <1% of total harvest. Trapping pressure from other Alaska residents mainly comes from neighboring Unit 2 which is only a short boat ride for some residents of that unit.

Harvest Chronology

Marten and river otter harvest steadily dropped throughout the season (1 December–15 February; Table 6). December is the peak of harvest for marten, river otter, and wolverine. Wolverine harvest is typically just a few animals each season (Table 6). Wolverines are harvested when targeted and when trappers are pursuing other species such as marten and wolves. Beaver harvest peaked in December and March when water is typically open, and beavers are easily accessible (Table 6).

Transport Methods

Marten and river otter were trapped mainly with the use of a boat (Table 7). The road system is limited so boats are a popular way to get away from the concentration of trappers that trap from the road system. The most common form of transportation while taking beavers was a highway vehicle or boat during the reporting period (Table 7). Beavers are typically trapped for use as bait for other furbearers. Beavers are commonly trapped with body-gripping traps which are heavy and most easily transported with aid of a vehicle or boat (Parr 2017). Boating is the only way to access Unit 1A mainland to trap wolverines.

Alaska Board of Game Actions and Emergency Orders

In 2013 the Board of Game received several proposals for changes to furbearer trapping regulations. One proposal suggested lengthening the trapping season for coyotes from 1 December–15 February to 1 November–30 April, which passed. Another proposal that passed allowed trappers to take beavers with a firearm in Southeast. A proposal also passed in 2013 to allow the take of beavers with a firearm. In 2015 the Alaska Board of Game changed the wolverine trapping season from 10 November–15 February to 10 November–28 February. At the March 2016 Statewide Board of Game meeting the board rescinded the requirement for all traps and snares to be marked with a trapper’s permanent identification or to post a sign nearby with the same information.

No emergency orders were issued during this reporting period.

Recommendations for Activity 2.1

Continue sealing beaver, lynx, marten, river otter and wolverine for critical information on harvest, furbearer demographics, and harvest locations. This enables us to determine trends in

Table 6. Unit 1A beaver, river otter, marten, and wolverine harvest chronology percent by month, Alaska, RY12–RY16.

Regulatory Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Unknown	<i>n</i>
<i>Beaver</i>										
RY12	0	16	8	3	19	49	5	0	0	37
RY13	8	11	63	0	0	18	0	0	0	38
RY14	0	2	28	15	15	29	11	0	0	65
RY15	0	4	18	5	29	7	38	0	0	56
RY16	0	5	15	2	22	32	24	0	0	41
<i>River otter</i>										
RY12	0	0	45	43	13	0	0	0	0	47
RY13	0	0	32	36	21	0	0	0	10	77
RY14	0	0	33	48	19	0	0	0	0	43
RY15	0	0	47	43	10	0	0	0	0	30
RY16	0	0	63	26	11	0	0	0	0	19
<i>Marten</i>										
RY12	0	0	57	41	0	0	0	0	2	293
RY13	0	0	49	44	8	0	0	0	0	475
RY14	0	0	63	37	0	0	0	0	0	220
RY15	0	0	42	39	19	0	0	0	0	243
RY16	0	0	51	33	16	0	0	0	0	260
<i>Wolverine</i>										
RY12	100	0	0	0	0	0	0	0	0	1
RY13	0	0	29	57	0	14	0	0	0	7
RY14	0	0	100	0	0	0	0	0	0	1
RY15	0	0	0	0	0	0	0	0	0	0
RY16	0	0	0	0	100	0	0	0	0	1

Table 7. Unit 1A beaver, river otter, marten, and wolverine harvest percent by transportation method, RY12–RY16, Alaska.

Regulatory Year	Airplane	Horse/Dog Team	Ski/Foot/Snowshoe	Boat	3 or 4-wheeler	Snow-machine	Highway Vehicle	Unknown	<i>n</i>
<i>Beaver</i>									
RY12	0	0	3	32	3	0	62	0	37
RY13	0	0	0	37	0	0	63	0	38
RY14	17	0	6	39	32	0	6	0	65
RY15	0	0	11	29	0	0	60	0	56
RY16	0	0	0	22	0	0	78	0	41
<i>River otter</i>									
RY12	0	0	0	94	2	0	2	2	47
RY13	0	0	1	91	0	0	8	0	77
RY14	2	0	2	94	0	0	2	0	43
RY15	0	0	0	54	0	0	43	3	30
RY16	0	0	0	27	5	0	68	0	19
<i>Marten</i>									
RY12	0	0	10	76	1	10	1	2	293
RY13	0	0	3	91	1	0	4	1	475
RY14	0	0	11	60	0	15	0	14	220
RY15	0	0	0	66	0	5	28	1	243
RY16	0	0	0	48	3	21	15	13	260
<i>Wolverine</i>									
RY12	0	0	0	0	0	0	100	0	1
RY13	0	0	0	86	14	0	0	0	7
RY14	0	0	100	0	0	0	0	0	1
RY15	0	0	0	0	0	0	0	0	0
RY16	0	0	0	0	0	100	0	0	1

abundance for these species. We will continue to rely on the public for trends in abundance of other furbearers along with information they provide in the Alaska Trapper Questionnaire.

3. Habitat Assessment-Enhancement

Not applicable. The Department has not engaged in habitat assessment or enhancement for furbearers during the reporting period.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Data sheets are scanned and stored on the Ketchikan server.
- Original datasheets are stored in file folders located in the Ketchikan Area Biologist's office.
- Historical survey notes and data sheets are being digitized and scanned for permanent storage on the file server.
- Wildlife management reports and plans and the management operational plan for Furbearer – Unit 1A will be stored online at <http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifemanagement>.
- Memos, data forms, and additional hard copies will be stored in the Ketchikan Area Biologist files in Ketchikan.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

Quantifiable management objectives need to be established for beavers, marten, river otters, and wolverines. Harvest information is available for all these species from sealing records, and application of existing and emerging methodologies may provide opportunities to monitor population trends.

Harvests of furbearers appear to be within sustainable limits, and no changes in seasons or bag limits are recommended.

II. Project Review and RY17–RY21 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The existing management direction and goals appropriately direct management of furbearers in Unit 1A. The management direction for Unit 1A ensures that furbearers will persist as part of the natural ecosystem and ensures continued hunting (on applicable species), trapping, and viewing opportunities. There is no indication that the long-term sustainability of the furbearer populations or that statewide goals for human uses cannot be met; therefore, the Unit 1A management direction should continue to be that furbearers will be managed in a manner that complements the statewide furbearer management goals.

GOALS

To provide the following:

1. An optimum harvest of furbearers.
2. The greatest opportunity to participate in hunting and trapping 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 1A, with a harvestable surplus to be 90% of the harvestable portion (5 AAC 99.025(13)).

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

- Regulate seasons and bag limits to maintain viewable and harvestable populations of beaver, lynx, marmot, marten, mink, muskrat, short-tailed weasel, river otters, squirrel, and wolverine.
- Seal harvested beaver, lynx, marten, river otter, and wolverine pelts as they are presented for sealing.
- Contact reliable observers for general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

- Necropsy beaver, lynx, marmot, marten, mink, muskrat, short-tailed weasel, river otters, squirrel, and wolverine carcasses as needed to determine disease, parasites, pregnancies, record morphometric data, and collect tissue samples.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

Contact reputable members of the public for insights on local trends in abundance. Record incidental sightings of furbearers for presence-absence data.

Data Needs

Observations from reliable members of the public provide insight into local trends in abundance. For example, fur trappers that have trapped the same trapline for many years can provide valuable insight into trends in abundance. Incidental sightings of furbearers while conducting surveys or travelling to work locations help with presence absence information on all species of furbearers.

Methods

Observations from the public incorporated into furbearer reports. Members of the public contact our area office via phone, e-mail, or in person to provide details on their observations. Agency sightings are recorded and reported when considered significant. The annual trapper report provides valuable information on harvest, trapping methods, and other information on trapping in the region.

2. Mortality/Harvest Monitoring and Regulations

ACTIVITY 2.1

Data Needs

Harvest must be assessed to understand impacts of harvest and trends in abundance.

Methods

Harvest data will be collected by sealing hides of beaver, marten, river otter, lynx, and wolverine taken by trappers and hunters. We record location and date of harvest, method of take, transportation mode, sex, and in the case of lynx, river otters and beavers, hides are measured. Sealing must occur by ADF&G staff or a State appointed sealer within 30 days of the close of the season. These data are entered into an ADF&G's Wildlife Information Network database (Winfonet). Harvest data are summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY15 = 1 July 2015–30 June 2016).

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement is planned.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Data collected during surveys will be recorded on datasheets and transcribed into the furbearer observations spreadsheet located on the Ketchikan server. Species wildlife management reports and plans and the management operational plan for furbearers in Unit 1A will be stored online at <http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifemanagement>. Memos, data forms, and additional hard copies will be stored in the area biologist files in Ketchikan.

Agreements

None.

Permitting

None.

References Cited

- Alaska Department of Fish and Game. 1976. Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Southeastern Alaska. Draft proposal subsequently approved by the Alaska Board of Game. Division of Game, Federal Aid in Wildlife Restoration Project W-17-R, Juneau.
- Baker, R. J., L. C. Bradley, R. D. Bradley, J. W. Dragoo, M. D. Engstrom, R. S. Hoffmann, C. A. Jones, F. Reid, D. W. Rice, and C. Jones. 2003. Revised checklist of North American mammals north of Mexico. Occasional Papers, Texas Tech University, Lubbock. <http://www.nsr.ttu.edu/publications/opapers/index.htm> (Accessed 19 September 2019)
- DeVink, J. M., D. Berezanski, and D. Imrie. 2011. Comments on Brodie and Post: harvest effort: the missing covariate in analyses of furbearer harvest data. *Population Ecology* 53(1):261–262.
- Dorendorf, R. R., P. J. Fix, and L. R. Prugh. 2016. Motivations of fur trappers in Interior Alaska. *Human Dimensions of Wildlife* 21(6):522–537.
- Erlinge, S. 1983. Demography and dynamics of the stoat *Mustela erminea* population in a diverse community of vertebrates. *Journal of Animal Ecology* 52(3):705–726.
- Flynn, R. W., and T. V. Schumacher. 2016. Habitat selection of American martens in northeast Chichagof Island, Southeast Alaska, 1991-1997. Wildlife Research Report, Alaska Department of Fish and Game, Division of Wildlife Conservation, WRR-2016-6, Juneau.
- Fur Harvesters Auction Incorporated. 2016. Auction Results. North Bay, Ontario, CA. <http://furharvesters.com/auctionresults.html> (Accessed 12 June 2018).

- Gese, E. M. 2001. Monitoring of terrestrial carnivore populations. Fort Collins, Colorado, USA: National Wildlife Research Center. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1572&context=icwdm_usdanwrc (Accessed 16 February 2019).
- Gosselink, T. E., T. R. Van Deelen, R. E. Warner, and M. G. Joselyn. 2003. Temporal habitat partitioning and spatial use of coyotes and red foxes in east-central Illinois. *The Journal of Wildlife Management* 67(1):90–103.
- Hargis, C. D., and D. R. McCullough. 1984. Winter diet and habitat selection of marten in Yosemite National Park. *Journal of Wildlife Management* 48(1):140–146.
- Hauptman, T. N. 1979. Spatial and temporal distribution and feeding ecology of pine marten. Doctoral dissertation, Idaho State University, Pocatello.
- Larsen, D. 1984. Feeding habits of river otters in coastal southeastern Alaska. *Journal of Wildlife Management* 48 (4):1446–1452.
- MacDonald, S. O., and J. A. Cook. 2008. *Recent mammals of Alaska*. University of Alaska Press, Fairbanks, Alaska.
- Parr, B. L. 2016. 2015 Alaska trapper report: 1 July 2015–30 June 2016. Alaska Department of Fish and Game, Division of Wildlife Conservation, Wildlife Management Report ADF&G/DWC/WMR-2016-1, Juneau.
- Parr, B. L. 2017. 2016 Alaska trapper report: 1 July 2016–30 June 2017. Alaska Department of Fish and Game, Division of Wildlife Conservation, Wildlife Management Report ADF&G/DWC/WMR-2017-3, Juneau.
- Parr, B. L. 2018. 2013 Alaska trapper report: 1 July 2013–30 June 2014. Alaska Department of Fish and Game, Division of Wildlife Conservation, Wildlife Management Report ADF&G/DWC/WMR-2018-1, Juneau.
- Payne, N. F. 1979. Relationship of pelt size, weight, and age for beaver. *Journal of Wildlife Management* 43(3):804–806.
- Schumacher, T. V. 1999. A multi-scale analysis of habitat selection at dens and resting sites of American martens in Southeast Alaska. Master's Thesis, University of Wyoming, Laramie.
- Schumacher, T. 2013. Trapper questionnaire statewide annual report: 1 July 2011–30 June 2012. Alaska Department of Fish and Game, Wildlife Management Report, ADF&G/DWC/WMR-2013-4, Juneau.
- Schumacher, T. 2013. Trapper questionnaire statewide annual report: 1 July 2012–30 June 2013. Alaska Department of Fish and Game, Wildlife Management Report, ADF&G/DWC/WMR-2013-5, Juneau.

- Siemer, W. F., G. R. Batcheller, R. J. Glass, and T. L. Brown. 1994. Characteristics of trappers and trapping participation in New York. *Wildlife Society Bulletin* 22(1):100–111.
- Simon, T. L. 1980. An ecological study of the marten in the Tahoe National Forest, California. Master's thesis, California State University, Sacramento.
- Sittler, B. 1995. Response of stoats (*Mustela erminea*) to a fluctuating lemming (*Dicrostonyx groenlandicus*) population in north east Greenland: preliminary results from a long-term study. *Annales Zoologici Fennici* 32:79–92.
- U.S. Census Bureau. 2018. QuickFacts Ketchikan Gateway Borough, Alaska. <https://www.census.gov/quickfacts/ketchikangatewayboroughalaska> (Accessed 16 February 2019).
- U.S. Climate Data. 2019. Climate data for Ketchikan, Alaska. <https://www.usclimatedata.com/climate/ketchikan/alaska/united-states/usak0125> (Accessed 16 February 2019).
- Wynne, K. M., and J. A. Sherburne. 1984. Summer home range use by adult marten in northwestern Maine. *Canadian Journal of Zoology* 62(5) 941-943.
- Yom-Tov, Y., S. Yom-Tov, D. MacDonald, and E. Yom-Tov. 2007. Population cycles and changes in body size of the lynx in Alaska. *Oecologia* 152(2):239–244.
- Zwick, R. R., R. J. Glass, K. Royar, and T. Decker. 2001. Sociocultural perspectives of trapping revisited: A comparative analysis of activities and motives 1994 and 2000. Proceedings of the 2001 Northeast Recreation Research Symposium. https://www.nrs.fs.fed.us/pubs/gtr/gtr_ne289/gtr_ne289.pdf#page=118 (Accessed 16 February 2019).

