# Furbearer Management Report and Plan, Game Management Unit 16:

Report Period 1 July 2012–30 June 2017, and

Plan Period 1 July 2017–30 June 2022

**Christopher Brockman and Tim C. Peltier**

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Alaska Department of Fish and Game Division of Wildlife Conservation

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**PREPARED BY:**

Christopher Brockman
Assistant Area Wildlife Biologist

Tim C. Peltier
Area Wildlife Biologist

**APPROVED BY:**

Todd A. Rinaldi
Management Coordinator

**REVIEWED BY**:

Meg Inokuma
Biometrician

Jeffrey B. Stetz
Research Coordinator

**PUBLISHED BY:**

Sky M. Guritz
Technical Reports Editor

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Alaska Department of Fish and Game
Division of Wildlife Conservation
PO Box 115526
Juneau, AK 99811-5526

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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 Todd Rinaldi, Management Coordinator for the Division of Wildlife Conservation.

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**Cover Photo:** Wolverine on the move. ©ADF&G 2008. Photo by Todd Rinaldi.

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## Purpose of this Report

This report provides a record of survey and inventory management activities for furbearers in Unit 16 for the 5 regulatory years 2012–2016 and plans for survey and inventory management activities in the following 5 regulatory years, 2017–2021. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY14 = 1 July 2014–30 June 2015). This report is produced primarily to provide agency staff with data and analysis to help guide and record 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 more efficiently report 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

Game Management Unit 16 (GMU) is located in Southcentral Alaska, west of Anchorage. Unit 16 consists of the drainages that flow into the western Cook Inlet including Redoubt Creek and the Susitna River; this includes the west side of the Susitna River upstream to its junction with the Chulitna River, the drainages that flow into the west side of the Chulitna River, upstream to the Tokositna River, including the drainages on the south side of the Tokositna River, up to the Tokositna Glacier.

Unit 16 is further subdivided into Units 16A and 16B. Unit 16A (1,850 $mi^2$) is east of the east bank of the Yentna River, from its mouth upstream to the Kahiltna River, east of the east bank of the Kahiltna River, and east of the Kahiltna Glacier. Unit 16B covers all portions south and west of Unit 16A (Fig. 1). Unit 16B is 10,405 $mi^2$, which is about 5½ times larger than Unit 16A.

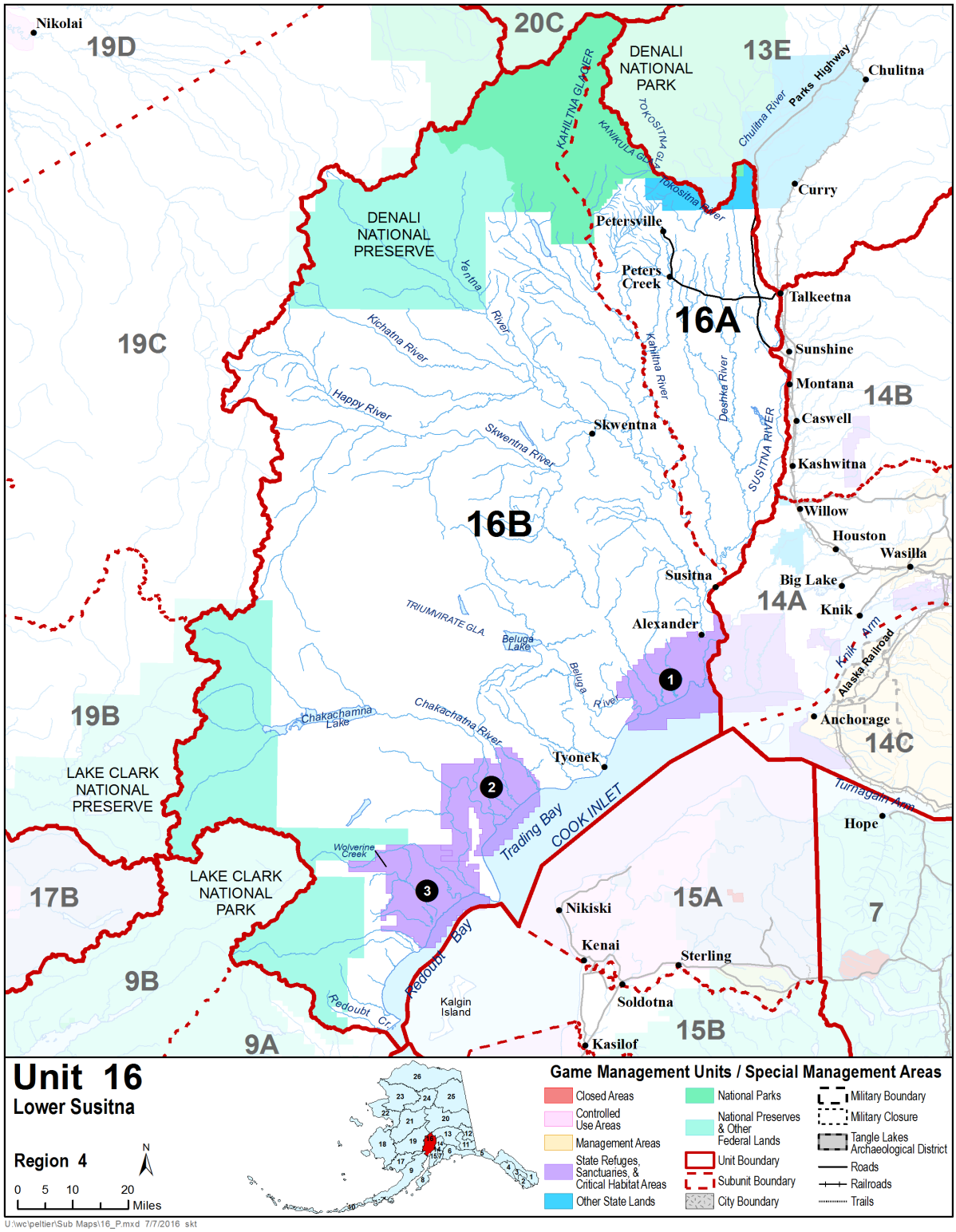


**Figure 1. Map showing Game Management Unit boundaries, Special Management Areas, and federal lands; including state refuges, sanctuaries, and critical habitat areas (black numbered circles), for Unit 16 in Southcentral Alaska as found in the Alaska Hunting Regulations.**

# Summary of Status, Trend, Management Activities, and History of Furbearers in Unit16

Game Management Unit 16 is adjacent to Unit 14; combined, these units contain more than half (more than 320,000) of the people living in Alaska. Most of Unit 16 is roadless; only a small portion of Unit 16A has road access which is along the Parks Hwy (29 road miles) and Petersville Road (20 road miles). These accessible areas are receiving increased pressure from recreational trappers. The majority of Unit 16 is accessible only by snowmachine or airplane for most of the trapping season (except boats for beaver trapping). Due to this increased difficulty of access, most of the trappers do so for subsistence purposes and to supplement their income. Conflicts with other trail users are rare. A few local residents trap full time to generate income, primarily targeting marten and beaver.

Furbearer species in Unit 16 include beaver (*Castor canadensis*), coyote (*Canis latrans*), 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 (*Ondatra zibethicus*), arctic ground squirrel *(Spermophilus parryii)*, red squirrel *(Tamiasciurus 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). Life history, range, habitat, and management of furbearers are available on our species website: http://www.adfg.alaska.gov/index.cfm?adfg=animals.listmammals.

Trappers reported that beaver, coyote, ermine, red fox, red squirrels, and wolves were common during the during RY12–RY16. Marten, mink, and muskrat were reported as scarce; lynx, river otters, and wolverine became scarce during RY12–RY16. Prey species such as grouse, hare, mice, other rodents, and ptarmigan varied throughout the reporting period (Parr 2016, 2017, 2018; Schumacher 2013).

# Management Direction

## Existing Wildlife Management Plans

- Alaska Wildlife Management Plans: Cook Inlet Furbearer Management Plan (ADF&G 1976)

- ADF&G Division of Wildlife Conservation Strategic Plan (2002).

## 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 determination for furbearers in all units, including Unit 16, with a harvestable surplus set at 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.

## MANAGEMENT ACTIVITIES

### 1. Population Status and Trend

ACTIVITY 1.1. Monitor population status and trend using sealing records, the annual Trapper Report produced by ADF&G, and incidental observations of animals and their tracks.

*Data Needs*

Population status and trends of several furbearer species may be monitored through the historical records of sealing data. For those species in which sealing is not required, feedback from a sampling of local trappers provides an indication of trends in species abundance as well as a sampling of their effort and results.

*Methods*

Sealing information is collected within 30 days of the end of the seasons for lynx, otter, marten, wolf, and wolverine. This information is compiled and available through ADF&G's Wildlife Information Network (WinfoNet). The Alaska Trapper Report is compiled each year from the results of a questionnaire sent to a sampling of trappers that have a current trapping license (Parr 2016, 2017, 2018; Schumacher 2013).

*Results and Discussion*

Furbearer population trends are assessed based primarily on information from trapper observations and incidental observations of biologists while conducting other wildlife surveys. This information gives DWC area managers an idea of the status and trend of furbearer populations. That being said, it lacks an estimate of the density or trajectory of any furbearer population. Population surveys for furbearers would be beneficial for management, but at this time are not necessary to ensure opportunity to harvest or long-term sustainability.

*Recommendations for Activity 1.1*

Continue to actively seek information from trappers and others who observe furbearers.

## 2. Mortality-Harvest Monitoring and Regulations

### ACTIVITY 2.1. Monitor harvest through sealing records.

*Data Needs*

Harvest must be assessed to determine trends in use and availability of furbearers.

*Methods*

ADF&G collected harvest data by sealing hides of marten, otter, wolverine, and lynx that were taken by trappers. Sealers recorded location, date of harvest, method of take, transportation mode, and sex. Lynx and otter hides were measured. Sealing must occur 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.

*Season and Bag Limit*

**Hunting Season and Bag Limit during regulatory years 2012–2016.**

| Species | Season | Bag limit |
|---|---|---|
| Beaver | No open season | – |
| Coyote | 10 Aug–25 May (RY12); | No limit |
| | No closed season (RY13–RY16) | No limit |
| Fox, red | 1 Sep–15 Feb | 2 fox |
| Lynx | 1 Dec–31 Jan | 2 lynx |
| Wolverine | 1 Sep–31 Jan | 1 wolverine |

**Trapping Season and Bag Limit during regulatory years 2012–2016.**

| Species | Season | Bag limit |
|---|---|---|
| Beaver | 25 Sep–31 May | No limit |
| Coyote | 15 Oct–30 Apr | No limit |
| Fox, red | 10 Nov–28 Feb (29 Feb in RY15) | No limit |
| Lynx | 15 Dec–31 Jan | No limit |
| Marten | 10 Nov–31 Jan | No limit |
| Mink | 10 Nov–31 Jan | No limit |
| Muskrat | 10 Nov-10 Jun | No limit |
| River otter | 10 Nov–31 Mar | No limit |
| Wolverine | 10 Nov–28 Feb (16B) (29 Feb in RY15) | No limit |
| | 10 Nov–31 Jan (16A) | 2 wolverine |

*Results and Discussion*

Harvest by Hunters-Trappers

BEAVER

Beaver harvest data is unavailable for RY12–RY16 because sealing was not required after regulatory year 2010.

LYNX

During RY12–RY16, lynx harvest was highest in RY12 (12 lynx). After RY12, lynx harvest decreased to just 1 animal in RY16 (Table 1, Fig. 2). The average (6 lynx) for the reporting period was higher than the previous 5 years, RY07–RY11, (average of 3 lynx with a range of 0–7 animals) and suggests that the peak of the cycle was between the 2 five-year periods. The previous high point of the lynx cycle occurred in RY01, which was a harvest of 22 lynx. Most lynx were harvested by trappers, with the majority of harvest in Unit 16B.

**Table 1. Lynx harvest and method of take from sealing data during regulatory years 2012–2016, Units 16, Southcentral Alaska.**

| Regulatory year | Total harvest | Successful participants | Percent juveniles[a] | Method of take | | | |
|---|---|---|---|---|---|---|---|
| | | | | Shot | Trapped | Snared | Unknown |
| 2012 | 12 | 9 | 0 | 2 | 10 | 0 | 0 |
| 2013 | 6 | 6 | 0 | 1 | 4 | 1 | 0 |
| 2014 | 8 | 7 | 0 | 0 | 8 | 0 | 0 |
| 2015 | 2 | 2 | 0 | 0 | 2 | 0 | 0 |
| 2016 | 1 | 1 | 0 | 0 | 0 | 1 | 0 |

[a] Juvenile lynx measure (length) <34 inches.

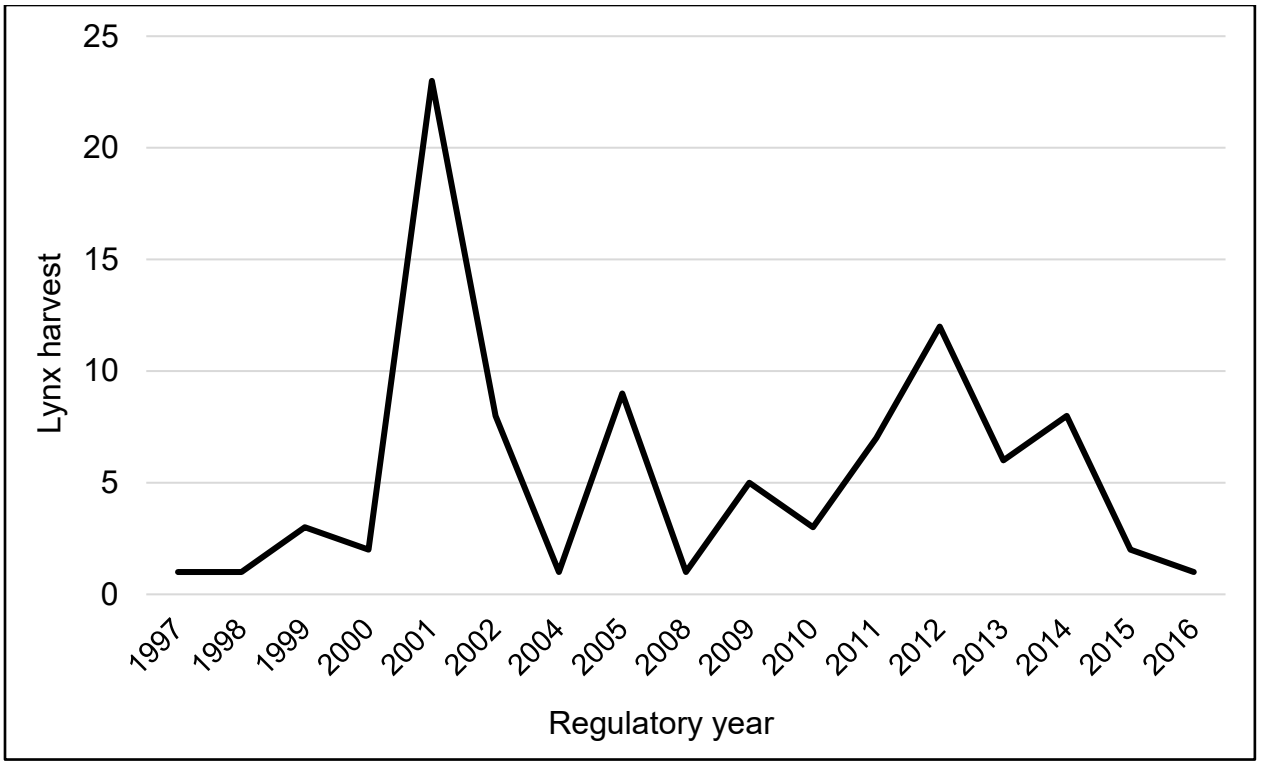


**Figure 2. Number of lynx harvested by year for regulatory years 1997–2016 in Unit 16, Southcentral Alaska.**

RIVER OTTER

Annual river otter harvest averaged 42 animals during RY12–RY16 (33–46); an increase from RY07–RY11, which had an average annual harvest of 32 otters (range of 18–64 otters). Slightly more of the average annual harvest was from Unit 16A with an average of 21 otters compared to 20 otters in Unit 16B. Trapping is the most common form of take for river otters in Unit 16 (Table 2).

**Table 2. River otter harvest and method of take from sealing data during regulatory years 2012–2016, Unit 16, Southcentral Alaska.**

| Regulatory year | Total harvest | Successful participants | Percent males | Percent juveniles[a] | Method of take | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Shot | Trapped | Snared | Unknown |
| 2012 | 43 | 15 | 54 | 29 | 0 | 36 | 7 | 0 |
| 2013 | 33 | 17 | 48 | 32 | 0 | 32 | 1 | 0 |
| 2014 | 41 | 15 | 55 | 32 | 0 | 40 | 0 | 1 |
| 2015 | 45 | 20 | 57 | 29 | 0 | 44 | 1 | 0 |
| 2016 | 46 | 16 | 49 | 33 | 0 | 45 | 0 | 1 |

[a] Juvenile otters measure <42 inches in length.

MARTEN

Annual marten harvest averaged 395 animals during RY12–RY16 (Table 3). This is considerably more than the previous 5-year (RY07–RY11) average of 156. Like other areas of the state, Unit 16 experienced an increase in harvest in RY12 concurrent with the high prices paid for marten fur for that year. Trapping marten is less time consuming and less difficult than trapping other species. Harvest data for this species are probably more useful as an indicator of population abundance than for other species. In addition, harvests reflect productivity/survival of marten in response to prey species that fluctuate in abundance across years. Unit 16 is generally considered good marten habitat with contiguous coniferous forests.

**Table 3. Marten harvest and method of take from sealing data during regulatory years 2012–2016, Unit 16B, Alaska.**

| Regulatory year | Total harvest | Successful participants | % Males | Method of take | | | |
|---|---|---|---|---|---|---|---|
| | | | | Shot | Trapped | Snared | Unknown |
| 2012 | 495 | 46 | 58 | 0 | 489 | 0 | 6 |
| 2013 | 488 | 32 | 70 | 0 | 479 | 0 | 9 |
| 2014 | 259 | 23 | 63 | 0 | 212 | 2 | 45 |
| 2015 | 590 | 29 | 65 | 8 | 582 | 0 | 0 |
| 2016 | 143 | 15 | 70 | 0 | 113 | 0 | 30 |

WOLVERINE

Annual harvest averaged 27 wolverine during RY12–RY16 (range of 16–39 wolverine; Table 4). This is a decrease from RY07–RY11 when the annual harvest was 30 wolverine annually (range of 19–46 wolverine). Most wolverine are trapped, and few individual trappers take more than 3 wolverine each year.

**Table 4. Wolverine harvest and method of take from sealing data during regulatory years 2012–2016, Unit 16B, Alaska.**

| Regulatory year | Total harvest | Successful participants | Percent male | Method of take | | | |
|---|---|---|---|---|---|---|---|
| | | | | Shot | Trapped | Snared | Unknown |
| 2012 | 32 | 19 | 68 | 3 | 28 | 1 | 0 |
| 2013 | 39 | 19 | 63 | 1 | 38 | 0 | 0 |
| 2014 | 22 | 16 | 74 | 5 | 13 | 4 | 0 |
| 2015 | 25 | 18 | 76 | 4 | 20 | 1 | 0 |
| 2016 | 16 | 10 | 55 | 0 | 14 | 2 | 0 |

Harvest Chronology

Marten, river otter, and lynx harvest primarily occurs in December and January. Harvest can be variable and weather dependent (Table 5). Wolverine harvest also occurs primarily in December.

Beaver harvest varies seasonally and is influenced by weather conditions each year with early break up years resulting in more harvest in the spring.

**Table 5. Percent of total harvest by month for river otter, lynx, marten, and wolverine during regulatory years 2012–2016, Unit 16, Alaska.**

| Species | Regulatory year | Month | | | | | | | | | *n* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | |
| River otter | | | | | | | | | | | |
| | 2012 | 0 | 0 | 14 | 23 | 35 | 16 | 12 | 0 | 0 | 43 |
| | 2013 | 0 | 0 | 6 | 30 | 40 | 6 | 18 | 0 | 0 | 33 |
| | 2014 | 0 | 0 | 20 | 32 | 36 | 10 | 2 | 0 | 0 | 41 |
| | 2015 | 0 | 0 | 9 | 41 | 27 | 7 | 16 | 0 | 0 | 45 |
| | 2016 | 0 | 0 | 13 | 65 | 11 | 9 | 2 | 0 | 0 | 46 |
| Lynx | | | | | | | | | | | |
| | 2012 | 0 | 0 | 8 | 42 | 50 | 0 | 0 | 0 | 0 | 12 |
| | 2013 | 0 | 0 | 0 | 50 | 50 | 0 | 0 | 0 | 0 | 6 |
| | 2014 | 0 | 0 | 0 | 75 | 25 | 0 | 0 | 0 | 0 | 8 |
| | 2015 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 2016 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 1 |
| Marten | | | | | | | | | | | |
| | 2012 | 0 | 0 | 12 | 40 | 48 | 0 | 0 | 0 | 0 | 495 |
| | 2013 | 0 | 0 | 14 | 59 | 27 | 0 | 0 | 0 | 0 | 488 |
| | 2014 | 0 | 0 | 8 | 69 | 18 | 0 | 0 | 0 | 0 | 259[a] |
| | 2015 | 0 | 0 | 24 | 60 | 16 | 0 | 0 | 0 | 0 | 590 |
| | 2016 | 0 | 0 | 3 | 58 | 33 | 0 | 0 | 0 | 0 | 143[a] |
| Wolverine | | | | | | | | | | | |
| | 2012 | 0 | 0 | 3 | 9 | 47 | 35 | 6 | 0 | 0 | 32 |
| | 2013 | 0 | 0 | 3 | 13 | 33 | 48 | 3 | 0 | 0 | 39 |
| | 2014 | 5 | 5 | 5 | 9 | 44 | 23 | 9 | 0 | 0 | 22 |
| | 2015 | 4 | 0 | 16 | 20 | 32 | 20 | 8 | 0 | 0 | 25 |
| | 2016 | 0 | 0 | 0 | 24 | 38 | 38 | 0 | 0 | 0 | 16 |

[a] Total includes unknown month of take.

## Transport Methods

The most common form of transportation used by trappers is snowmachine. Many trappers access their trapping grounds by airplane as most of the unit is remote. River otter are commonly targeted by highway vehicle as the Parks Hwy parallels the Susitna River which is the boundary of Unit 16 (Table 6).

**Table 6. River otter, lynx, marten, and wolverine percent of harvest by transport method, regulatory years 2012–2016, Unit 16, Alaska.**

| | | Percent of harvest | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | Regulatory year | Airplane | Horse/dog team | Boat | 3- or 4-Wheeler | Snow-machine | ORV | Highway vehicle | Ski/snowshoe | Unknown | *n* |
| River otter | | | | | | | | | | | |
| | 2012 | 19 | 0 | 0 | 2 | 65 | 0 | 14 | 0 | 0 | 43 |
| | 2013 | 7 | 0 | 18 | 0 | 45 | 0 | 12 | 18 | 0 | 33 |
| | 2014 | 10 | 0 | 0 | 15 | 29 | 5 | 34 | 7 | 2 | 41 |
| | 2015 | 11 | 0 | 2 | 0 | 65 | 0 | 2 | 20 | 0 | 45 |
| | 2016 | 7 | 0 | 0 | 0 | 47 | 0 | 20 | 26 | 0 | 46 |
| Lynx | | | | | | | | | | | |
| | 2012 | 8 | 0 | 0 | 0 | 42 | 0 | 50 | 0 | 0 | 12 |
| | 2013 | 50 | 0 | 17 | 0 | 33 | 0 | 0 | 0 | 0 | 6 |
| | 2014 | 13 | 0 | 0 | 0 | 36 | 13 | 25 | 13 | 0 | 8 |
| | 2015 | 50 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 2 |
| | 2016 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Marten | | | | | | | | | | | |
| | 2012 | 13 | 0 | 0 | 0 | 80 | 0 | 4 | 2 | 1 | 495 |
| | 2013 | 16 | 0 | 1 | 0 | 70 | 0 | 5 | 6 | 2 | 488 |
| | 2014 | 7 | 0 | 0 | 0 | 61 | 0 | 6 | 8 | 18 | 259 |
| | 2015 | 1 | 0 | 2 | 0 | 64 | 0 | 5 | 28 | 0 | 590 |
| | 2016 | 28 | 0 | 0 | 0 | 46 | 0 | 0 | 15 | 11 | 143 |
| Wolverine | | | | | | | | | | | |
| | 2012 | 34 | 0 | 0 | 0 | 66 | 0 | 0 | 0 | 0 | 32 |
| | 2013 | 33 | 0 | 0 | 8 | 56 | 0 | 0 | 3 | 0 | 39 |
| | 2014 | 31 | 0 | 0 | 0 | 55 | 5 | 9 | 0 | 0 | 22 |
| | 2015 | 28 | 0 | 0 | 4 | 56 | 0 | 4 | 8 | 0 | 25 |
| | 2016 | 50 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 16 |

*Alaska Board of Game Actions and Emergency Orders*

The Board of Game met in the spring of 2013 and 2015 to discuss regional hunting and trapping regulations; however, no changes were made to the trapping regulations for Unit 16.

Emergency Orders in Unit 16 were issued annually during RY12–RY16 to provide continuity with the lynx trapping and hunting seasons of RY07–RY11. In addition, this allowed for shorter hunting and trapping seasons during times of low lynx population abundance (i.e., low in lynx population cycle).

*Recommendations for Activity 2.2.*

Continue.

3. Habitat Assessment-Enhancement

There were no habitat-related activities to benefit furbearers in Unit 16 during this reporting period.

### NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Harvest data and copies of sealing forms are stored in ADF&G's Wildlife Information Network (WinfoNet, http://winfonet.alaska.gov/index.cfm).

Field data sheets are scanned and housed on the network server (O:\WC\Palmer Area Office Folder\Species\Furbearer). Hard copies are stored in the Palmer Area Biologist office.

Agreements

None.

Permitting

None.

## Conclusions and Management Recommendations

Harvests of furbearers appear to be within sustainable limits, and no changes in seasons or bag limits are recommended. Quantifiable management objectives for beaver, river otter, lynx, marten, and wolverine may not be warranted as harvest and effort are relatively low compared to historical data. Harvest information is available for these species, except for beaver, from sealing records. Methods like track surveys could provide insight into population trend. However, funding is currently not available for conducting these surveys and the need is not great given 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 management of furbearers in Unit 16. Under the current trajectory, furbearers will persist as part of the natural ecosystem; and hunting (of applicable species), trapping, and viewing opportunities are expected to continue. Long-term sustainability of the furbearer populations and statewide furbearer goals (ADF&G 1976) for human uses have been met. Therefore, furbearers in Unit 16 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 at a unitwide or larger scale.

### GOALS

To provide optimum harvests and maximum opportunities to participate in the hunting and trapping of furbearers (no change from RY12–RY16).

### 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 16, 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 necessary to understand changes in the furbearer population and harvest pressure.

*Methods*

Locations, group size (if applicable), and characteristics will be recorded during aerial survey flights for moose. Most observations occur during moose surveys when sightability is ideal. Anecdotal reports will be recorded to the maximum level of detail available.

### 2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor harvest through sealing records.

*Data Needs*

Harvest must be assessed to understand the potential impact of furbearer harvest which may indicate trends in the population that warrant further investigation.

*Methods*

We will collect harvest data when sealing hides taken by trappers and hunters. We will record location, date of harvest, method of take, transportation mode, and sex. Measurements will be taken for beaver, lynx, wolverine, marten, and river otter. These data will be entered into an ADF&G's Wildlife Information Network (WinfoNet).

### 3. Habitat Assessment-Enhancement

There are no habitat-related activities planned in Unit 16 for furbearers in RY17–RY21.

## NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

### Data Recording and Archiving

Harvest data and copies of sealing forms will be stored in WinfoNet (http://winfonet.alaska.gov/index.cfm). Hard copies of field data sheets will be stored in the Palmer area biologist's office. Scanned copies will be stored on the network server (O:\WC\Palmer Area Office Folder\Species\Furbearer).

### Agreements

None.

### Permitting

None.

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