

## Wolf Management Report and Plan, Game Management Unit 1A:

Report Period 1 July 2010–30 June 2015, and  
Plan Period 1 July 2015–30 June 2020

**Boyd Porter**



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## **Wolf Management Report and Plan, Game Management Unit 1A:**

Report Period 1 July 2010–30 June 2015, and  
Plan Period 1 July 2015–30 June 2020

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This species management report and plan was reviewed and approved for publication by Thomas V. Schumacher, Management Coordinator for Region I for the Division of Wildlife Conservation.

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**Cover Photo:** Trail camera picture showing 3 wolves at a scent post camera trap site on Gravina Island. ©2014 ADF&G.

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## Purpose of this Report

This report provides a record of survey and inventory management activities for wolves in Unit 1A for the 5 regulatory years (RY) 2010–2014 and plans for survey and inventory management activities for the following 5 regulatory years, 2015–2019. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY10 = 1 July 2010–30 June 2011). 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 provide information about wildlife management activities. In 2016 the Alaska Department of Fish and Game’s (ADF&G) Division of Wildlife Conservation launched this 5-year report type to more efficiently report on trends and describe potential changes in future data collection activities. It replaces the wolf management reports of survey and inventory activities that were previously produced every 3 years.

## I. RY10–RY14 Management Report

### Management Area

Unit 1A encompasses 5,300 mi<sup>2</sup> 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 include Revillagigedo, Annette, and Gravina islands (Fig. 1). The dominant habitat type in Unit 1A below about 600 m elevation is temperate rain forest consisting of Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), red cedar (*Thuja plicata*), and Alaska cedar (*Chamaecyparis nootkatensis*). Other lower elevation habitats include muskegs and 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 clearcut logging and a few natural windthrow events. Some mainland areas above 600 m 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 Native corporation inholdings, federal Indian reservation lands including Annette Island and surrounding marine waters, and one large private mining parcel, nested inside but not included in the Misty Fjords Monument.

Sitka black-tailed deer are found in most of Unit 1A, with lower deer densities on the Cleveland Peninsula and along the mainland than on islands. Mountain goats are found from mid to high elevation throughout the mainland and on Revillagigedo Island. There is a small population of moose in northeastern Unit 1A along the Unuk River from Boroughs Bay east to the Canadian border. Moose are occasionally found in other parts of the unit but have never become established elsewhere.

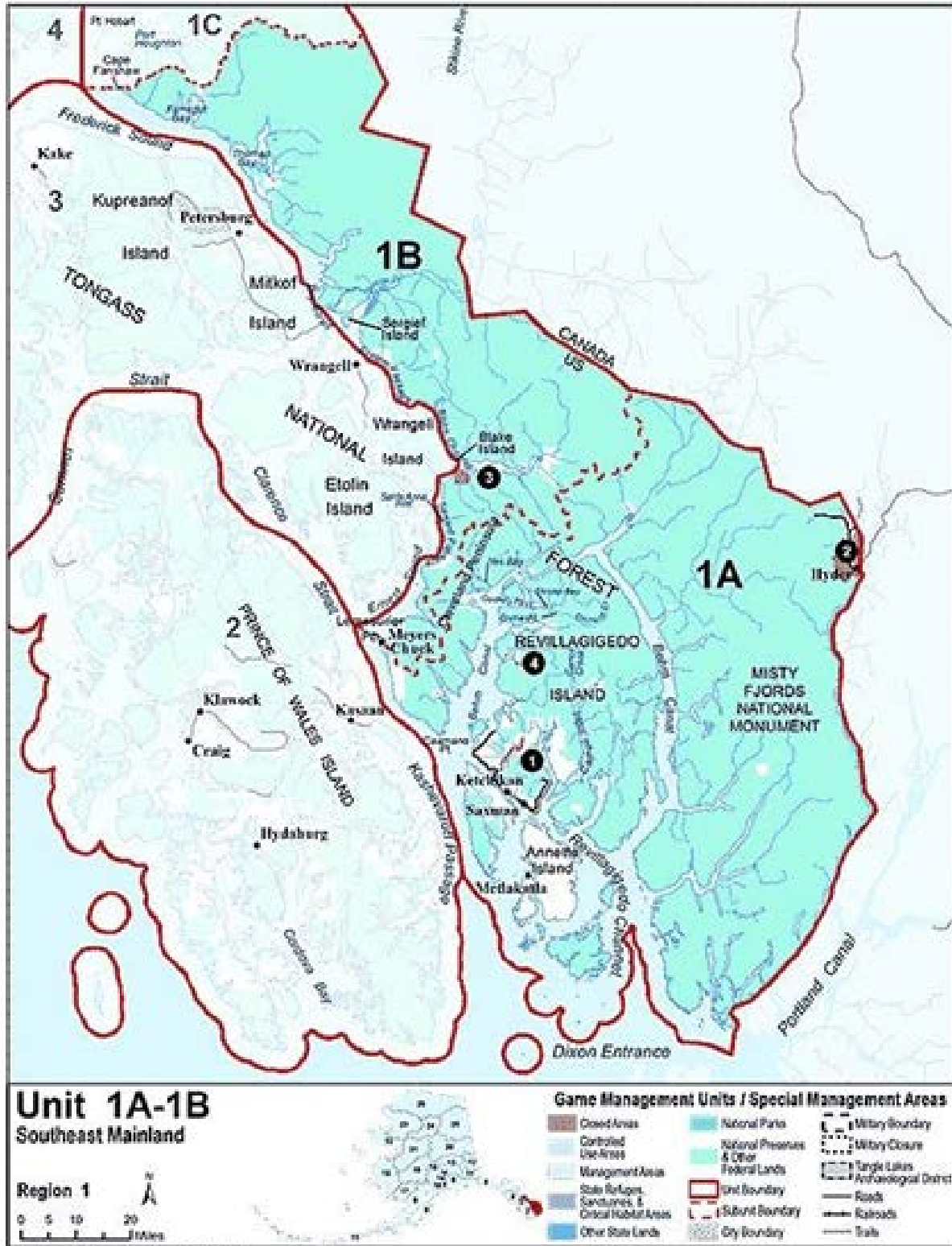


Figure 1. Map of the boundaries of Units 1A and 1B in Alaska.



## **Summary of Status, Trend, Management Activities, and History of Wolves in Unit 1A**

Wolves live throughout the islands and mainland of Unit 1A. Wolves generally occur at higher densities on the islands than on the mainland because maritime-influenced islands have less severe winters and prey are usually more abundant on islands. Wolves are capable swimmers and regularly travel among islands in search of prey.

Wolves feed primarily on deer in southern Southeast Alaska, particularly on islands where few other prey species are available. On the mainland, where deer densities are generally lower than on islands, wolves also prey on beaver, mountain goats, and moose. Marine mammals, black bears, salmon, waterfowl, and small mammals supplement the diets of Unit 1A wolves.

The coloration of Southeast wolf pelts varies; however, the brown/gray color is most common. During the past decade, white or near-white pelts have comprised less than 1% of the Unit 1A harvest while black pelts have accounted for about 20%.

From 1915 through the early 1970s, a cash bounty was paid for wolves taken in the region and in the 1950s federal agents poisoned wolves on many Southeast Alaska islands to increase or maintain deer numbers. None of those programs had long-lasting effects on wolf abundance or distribution. However, in 1990 Southeast Alaska wolves, named by some taxonomists as the Alexander Archipelago wolf, were identified by a United States Department of Agriculture (USDA) Forest Service-sponsored interagency committee as a species for which there were concerns about viability or distribution as a result of extensive timber harvesting in the Tongass National Forest. In 1993 the Biodiversity Legal Foundation (Boulder, CO) and an independent biologist from Haines, Alaska filed a petition with the U. S. Fish and Wildlife Service (USFWS) requesting that Southeast Alaska wolves be listed as a threatened subspecies pursuant to the Endangered Species Act. The USFWS ruled that listing was not warranted at the time but indicated that without significant changes to the existing Tongass Land Management Plan the long-term viability of Southeast wolves was seriously imperiled. A comprehensive conservation assessment was subsequently prepared through the USDA Forest Service (Person et al. 1996). The most important consideration identified in the assessment was the need to maintain a long-term carrying capacity for deer, the principal prey for most wolves. The authors suggested that a series of old-growth forest reserves might increase the likelihood that wolves would persist where extensive timber harvesting had occurred or was planned. Several old-growth reserves have been identified for Units 1A although the original selected locations have been shuffled and reduced in size over the years to meet timber demand and may no longer function as originally intended.

### **Management Direction**

No current population data are available for Unit 1A wolves. Based on the moderate harvest levels, wolves in Unit 1A appear to have been stable during this report period and no changes to seasons, bag limits, or harvest methods are anticipated.

## GOALS

No formal management goals have been established for wolves in this unit. However, our general management objectives are to regulate seasons and bag limits to maintain populations of wolves for viewing and sustainable harvest.

## CODIFIED OBJECTIVES

### Amounts Reasonably Necessary for Subsistence Uses

At its 1 July 2012 meeting, Alaska Board of Game made a positive finding of customary and traditional use of wolves in Unit 1A and set the amount necessary for subsistence uses as 90 percent of the harvestable portion of the population. The customary and traditional use determination finding for wolves in Unit 1A as set out in 5 AAC 99.025 is listed as follows: 90 percent of the harvestable portion of the population.

### Intensive Management

In 2014 the Alaska Board of Game adopted an intensive management (IM) plan for deer in Unit 1A because the annual harvest objective of 700 deer had not been achieved for more than 10 years. Several factors are thought to have coincided and led to decline of the deer population including a series of deep snow winters from 2006–2008, removal of old-growth forest deer wintering habitat by clearcut logging, predation by wolves and black bears, and human hunting.

The current population (15,000) and harvest (700) objectives for deer in Unit 1A were established by the Board of Game in fall 2000. The population objective was set using an interagency habitat capability model for deer combined with a qualitative estimate of deer abundance by ADF&G biologists based on deer-pellet counts and general range condition. The harvest objective was based on the average annual harvest during 1994–1999. Objectives for Unit 1A were set based on peak deer harvest years with mild winters and prior to many regenerating clearcuts reaching the stem exclusion stage, which shades out understory vegetation on which deer forage.

Applying an intensive management program to all of Unit 1A was determined to be infeasible. However, within this unit the Cleveland Peninsula and Gravina Island, two key areas where deer were once abundant, but have been chronically low since the late 1990s, were found to be viable for an IM program. Both areas are a short distance from Ketchikan and were once popular for deer hunting.

Gravina Island (~259 km<sup>2</sup> or 100 mi<sup>2</sup>) was selected for experimental wolf removal, but wolf control has never been activated (ADFG 2013). However, according to sealing records, six wolves were trapped or shot during RY10 and five wolves were harvested during RY11. No wolves were taken off Gravina Island during RY12, but one was taken during both RY13 and RY14.

Records indicate that deer harvest on Gravina Island was 13 to 15 bucks during RY11 to RY13 but tripled to 46 bucks in RY14. We believe the deer population is recovering because of a

nearly snow-free winter in RY14 and lower wolf predation. The IM treatment area represents only about 2% of the land area of Unit 1A, so any increase in deer abundance resulting from that program will have little effect on the unit-wide harvest objective of 700 deer per year. The continued need for intensive management in Unit 1A will be reviewed by the Board of Game in 2019.

## **MANAGEMENT OBJECTIVES**

No formal management goals have been established for wolves in this unit. However, our general management objectives are to regulate seasons and bag limits to maintain populations of wolves for viewing and sustainable harvest.

## **MANAGEMENT ACTIVITIES**

### 1. Population Status and Trend

ACTIVITY 1.1. Monitor wolf abundance using camera traps.

#### *Data Needs*

Monitoring abundance helps evaluate whether harvest is sustainable.

#### *Methods*

Wolf abundance is monitored on Gravina Island in Unit 1A using trail cameras. From 2013 to 2016 ADF&G monitored up to 12 motion-activated trail cameras placed along game trails throughout Gravina Island. For each wolf photographed we compared pelt color, body size (adult/pup), and associated wolves to identify individuals and estimate abundance. Wolf tracks on snow-covered ground are distinguishable from other animals and minimum wolf group size can be estimated after same day evaluation of all known travel routes on Gravina Island. It may be possible to estimate the larger Unit 1A population with the DNA mark-recapture technique used in Unit 2 (Brinkman et al 2011). However, that type of estimate requires substantial funding and staff time and is not currently a priority for Unit 1A.

#### *Results and Discussion*

Cameras were deployed for a total of 3,029 camera-days. A total of 44 pictures of wolves were captured resulting in 68.8 days per wolf picture. ADF&G believe as many as 8 to 10 wolves may have inhabited Gravina Island during RY10-RY11, and harvest was relatively high in both years at six and five wolves, respectively. Since then the population and harvest have been low. ADF&G believe the fall population has ranged from two to six wolves, and only two wolves were harvested during the final 3 years of the reporting period. We do not know why the Gravina Island wolf population has remained low despite the apparent recovery of the deer population. However, since ADF&G began monitoring the population with trail cameras, we have never documented pups or any evidence of reproduction.

Despite cameras being active during the spring and summer, we never detected wolf pups and have no recent evidence of denning or reproduction on the island. Based on trail camera photos, snow track surveys, and anecdotal information, ADF&G believes that in recent years fall wolf

numbers on Gravina Island have been low and stable at two to six animals. Based on wolf research from nearby Prince of Wales Island (Person 2001) and measures of wolf home ranges elsewhere in southern Southeast Alaska, ADF&G believes Gravina Island can support 1 breeding wolf pack and a few dispersing wolves.

*Recommendations for Activity 1.1*

Continue with no changes recommended.

2. Mortality–Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor and document hunter and trapper harvest to assess trends in abundance.

*Data Need*

Data on harvest and other causes of mortality are needed to inform management decisions to maintain sustainable population and harvest objectives

*Methods*

All wolves harvested in Alaska are required to be sealed. During the sealing process ADF&G collects a variety of data. Information collected from hunters and trappers includes the number and sex of wolves harvested, date and location of harvest, method of take, transportation used, pelt color and an estimate of how many wolves the trapper thought were in the pack or group. Anecdotal information about wolves was obtained from hunters, trappers, and department staff. Additional information was obtained from trappers through an annual mail-out survey and summarized in the annual trapper questionnaire report.

*Season and Bag Limit*

Season and bag limits	Residents and nonresidents
<u>Unit 1A</u>	
<u>RY10</u>	
Trapping: No limit	1 November–30 April
Hunting: 5 wolves (General hunt only)	1 August–30 April
<u>RY11–RY14</u>	
Trapping: No limit	1 November–30 April
Hunting: 5 wolves (General hunt only)	1 August–31 May

*Results and Discussion*

Harvest by Hunters and Trappers

Total wolves harvested each year by trapping and hunting has ranged 10 to 48 since 2000, and 14 to 42 during RY10 to RY14, with an annual average during this report period of 26 wolves

(Table 1). During RY10 to RY14, the met our management objective of harvesting 20 wolves annually was met in all years except RY12, when only 15 wolves were harvested. Annual variation in wolf harvest is more likely related to weather and boating conditions during the trapping season than wolf abundance.

### Harvest Chronology

March has historically seen the peak of Unit 1A wolf harvest, with the second highest month in February. During the past 3 years the harvest was spread over the open season, with slightly more taken during December, January, and February when pelts are prime and pelt prices the highest (Table 2).

### Transport Methods

Boats and off-road vehicles continue to be the transport methods most used by successful Unit 1A wolf hunters and trappers. (Table 3).

### Hunter and Trapper Success

The number of successful trappers varies each year and during RY10 to RY14 ranged 7 to 15. Average catch per successful trapper/ hunter was 2 wolves during this report period (Table 4).

Southeast wolf trappers consistently report using traps as their primary method. They also use snaring and ground shooting (Schumacher 2013).

### *Other Mortality*

Mortality from natural causes (starvation, accidents, disease, fighting) in exploited populations is low, typically averaging 5 to 10% per year (Fuller 1989). Wolves are occasionally killed by vehicle collision near Ketchikan, and there probably is some illegal harvest.

### *Alaska Board of Game Actions and Emergency Orders*

None.

### *Recommendations for Activity 2.1.*

Continue with no change recommended.

## 3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Continue to provide comments to the U.S. Forest Service regarding habitat alteration plans.

### *Data Needs*

Future research looking into the nature of the relationship between different vegetative treatments and habitat use of Sitka black-tailed deer could provide useful insight into the impacts of proposed treatments.

### *Methods*

None.

### *Results and Discussion*

The U.S. Forest Service continues to allow large scale clear-cut logging of old-growth forest which reduces critical winter habitat for Sitka black-tailed deer (Gilbert et al. 2017). By reducing old-growth habitat, carrying capacity for Sitka black-tailed deer is also reduced. Sitka Black-tailed deer are the most important prey species for wolves, and by reducing the number of deer, the wolf population also decreases (Darimont et al. 2004, Roffler et al. 2018). The creation of roads for access to timber increases road densities. Roads provide increased access for wolf hunters and trappers which positively correlates with wolf mortality except when road densities are  $>0.9 \text{ km/km}^2$  (Person and Russell 2008).

### *Recommendations for Activity 3.1*

Though we have no habitat enhancement projects for wolves in Unit 1A, we will continue to provide comments on U.S. Forest Service projects.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

### Data Recording and Archiving

Wolf sealing data are electronically archived in the ADF&G WinfoNet database (<http://winfonet.alaska.gov/index.cfm>).

Hard copies of wolf sealing forms are stored in 3-ring binders by regulatory year in the Ketchikan Area file cabinets.

Electronic copies of written reports are archived on the hard drive of the Ketchikan Area Biologist at H:\Users\bporter\Documents\Wildlife Progress Reports & Research Papers\Wolf, and the Region I server S:\Region1Shared-DWC\Offices\Ketchikan\Boyd Porter\Wildlife Progress Reports & Research Papers\Wolf.

### Agreements

None.

### Permitting

None.

**Table 1. Unit 1A, Alaska wolf harvest, regulatory years<sup>a</sup> (RY) 2000–2014.**

RY	Unit 1A wolf harvest				Method of Take					Pelt Color			
	Female	Male	Unk	Total	Shot	Trapped	Snared	Unk	Total	Black	Gray	White	Total
2000	24	24	0	49	8	28	13	0	49	6	43	0	49
2001	25	18	0	43	11	22	10	0	43	7	33	1	41
2002	16	8	1	25	9	10	6	0	25	0	14	0	14
2003	13	19	1	33	13	13	7	0	33	5	28	0	33
2004	3	6	1	10	1	7	2	0	10	1	1	0	2
2005	5	5	0	10	6	2	2	0	10	3	7	0	10
2006	13	13	0	26	7	15	4	0	26	3	23	0	26
2007	18	10	0	28	7	20	1	0	28	4	12	2	18
2008	24	24	0	49	13	32	4	0	49	12	36	0	48
2009	17	20	0	37	10	24	3	0	37	4	19	0	23
2010	17	25	0	42	4	26	12	0	42	10	30	0	40
2011	9	15	0	24	4	17	3	0	24	5	13	0	18
2012	7	8	0	15	2	13	0	0	15	3	12	0	15
2013	10	16	0	26	5	15	6	0	26	8	11	0	19
2014	15	10	0	25	5	15	6	0	26	6	15	0	21

<sup>a</sup> A regulatory year (RY) begins 1 July and ends 30 June, e.g., regulatory year 2010=1 July 2010–30 June 2011.

**Table 2. Unit 1A, Alaska wolf harvest chronology, regulatory years<sup>a</sup> 2000–2014.**

Unit 1A wolf harvest chronology 2000–2014											
Regulatory Year	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
2000	0	2	2	2	8	12	10	8	4	1	49
2001	2	2	3	5	6	13	8	2	3	0	44
2002	0	5	1	4	2	1	4	4	4	0	25
2003	2	6	1	4	5	7	6	2	0	0	33
2004	0	1	0	0	3	2	1	1	1	1	10
2005	1	1	1	0	2	1	2	1	0	1	10
2006	0	1	2	0	5	4	8	5	1	0	26
2007	2	3	0	1	1	2	7	6	6	0	28
2008	0	5	0	4	3	1	12	15	9	0	49
2009	1	1	0	3	2	8	6	10	6	0	37
2010	0	0	1	0	10	9	6	6	9	1	42
2011	0	2	0	1	3	9	4	3	1	1	24
2012	0	1	0	0	2	2	5	4	0	1	15
2013	0	1	1	2	3	8	2	8	1	0	26
2014	0	4	0	0	0	5	12	3	1	1	26

<sup>a</sup> A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010=1 July 2010–30 June 2011.

**Table 3. Wolf trapper transport methods, Unit 1A, Alaska, regulatory years<sup>a</sup> 2000–2014.**

Number of wolves harvested in Unit 1A by transport method							
Regulatory year	Aircraft	Boat	4-wheeler	Off-road vehicle	Highway vehicle	Foot	Total
2000	0	45	0	0	4	0	49
2001	0	35	6	0	2	0	43
2002	1	19	0	4	1	0	25
2003	0	26	1	0	6	0	33
2004	1	5	2	0	2	0	10
2005	0	6	2	0	2	0	10
2006	1	23	1	0	1	0	26
2007	2	22	1	0	3	0	28
2008	3	43	1	0	1	0	48
2009	0	34	0	0	2	1	37
2010	0	37	3	0	0	2	42
2011	0	19	2	0	1	2	24
2012	0	15	0	0	0	0	15
2013	0	22	2	0	1	1	26
2014	0	21	3	2	0	0	26

<sup>a</sup> A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010=1 July 2010–30 June 2011.



**Table 4. Number of trappers who caught wolves and average catch per trapper, regulatory years<sup>a</sup> 2000–2014.**

Number of people that harvested wolves			
Regulatory year	Harvesters GMU 1A	Average catch per person 1A	Total harvest
2000	21	2.3	49
2001	20	2.2	43
2002	17	1.5	25
2003	15	2.2	33
2004	7	1.4	10
2005	7	1.4	10
2006	12	2.2	26
2007	12	2.3	28
2008	18	2.7	48
2009	16	2.3	37
2010	15	2.8	42
2011	11	2.2	24
2012	7	2.1	15
2013	11	2.4	26
2014	11	2.4	26

<sup>a</sup> A regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.

## Conclusions and Management Recommendations

Ongoing changes in habitat and access related to logging, particularly on Revillagigedo and Gravina Islands, will continue to challenge wildlife managers. Logging roads have greatly increased human access for hunting and trapping, but previous and ongoing clearcutting of old-growth forest has resulted in declining carrying capacity for deer. Many hunters believe they are increasingly competing with wolves for deer and call for reducing the number of wolves. As habitat conditions continue to change managers will need to carefully monitor populations of wolves and their primary prey, deer, to ensure both species are sustainably harvested while allowing for the greatest hunter harvest of deer.

Current trapping and hunting regulations appear adequate for sustainably managing wolves in Unit 1A, and we do not anticipate any need for changes in the near future. We will continue to monitor the IM area on Gravina Island with camera traps and field observations to estimate wolf numbers each year.

## II. Project Review and RY15–RY19 Plan

### Review of Management Direction

#### MANAGEMENT DIRECTION

The department will continue to manage for both sustainable harvest and non-consumptive uses of wolves in Unit 1A.

#### GOALS

Regulate seasons and bag limits to maintain sustainable harvest.

#### CODIFIED OBJECTIVES

##### Amount Reasonably Necessary for Subsistence Uses (ANS)

At its 7/1/2012 meeting, Alaska Board of Game made a positive finding of customary and traditional use of wolves in Unit 1A and set the amount necessary for subsistence uses as 90 percent of the harvestable portion of the population. The Customary and Traditional Use Determination finding for wolves in Unit 1A as set out in 5 AAC 99.025 is listed as follows: 90 percent of the harvestable portion of the population.

##### Intensive Management

The Alaska Board of Game has made a positive finding for Intensive Management for wolves in a portion of Unit 1A on Gravina Island and will revisit its need in 2019.

#### MANAGEMENT OBJECTIVES

No formal population objectives have been established for Unit 1A wolves. General management objectives are to maintain populations that support sustainable harvest and viewing through regulation of hunting and trapping seasons and bag limits.

#### REVIEW OF MANAGEMENT ACTIVITIES

##### 1. Population Status and Trend

ACTIVITY 1.1. Monitor wolf abundance using camera traps and aerial track surveys.

##### *Data Needs*

Monitoring abundance helps evaluate whether harvest is sustainable.

##### *Methods*

No change.

## 2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor and document hunter and trapper harvest to assess trends in abundance.

### *Data Needs*

Data on harvest and other causes of mortality are needed to inform management decisions to maintain sustainable population and harvest objectives

### *Methods*

No change.

### *Season and Bag Limit*

No change from FY11-14 seasons and bag limits mentioned above.

## 3. Habitat Assessment-Enhancement

ACTIVITY 3.1.

Continue to provide comments to US Forest Service regarding habitat alteration plans.

### *Data Needs*

Future research looking into the nature of the relationship between different vegetative treatments and habitat use of Sitka black-tailed deer could provide useful insight into the impacts of proposed treatments.

### *Methods*

No change.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

### Data Recording and Archiving

No change.

### Agreements

None.

### Permitting

None.

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