

## Wolf Management Report and Plan, Game Management Units 9 and 10:

Report Period 1 July 2015–30 June 2020, and  
Plan Period 1 July 2020–30 June 2025

**David W. Crowley**



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Plan Period 1 July 2020–30 June 2025

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This species management report and plan was reviewed and approved for publication by Todd A. Rinaldi, Management Coordinator for Region IV for the Division of Wildlife Conservation.

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**Cover Photo:** ©2013 ADF&G. Photo by Rick Swisher. The author transporting anesthetized wolf to processing site for collaring and sample collection.

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## Purpose of this Report

This report provides a record of survey and inventory management activities for wolves (*Canis lupus*) in Game Management Units 9 and 10 for the 5 regulatory years 2015–2019 and plans for survey and inventory management activities in the next 5 regulatory years, 2020–2024. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY15 = 1 July 2015–30 June 2016). This report is produced primarily to provide agency staff with data and analysis to help guide and record agency efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game’s (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to report more efficiently on trends and to describe potential changes in data collection activities over the next 5 years. It replaces the wolf management report of survey and inventory activities that was previously produced every 3 years.

## I. RY15–RY19 Management Report

### Management Area

Unit 9 (33,638 mi<sup>2</sup>) consists of the Alaska Peninsula of Southwest Alaska, bounded in the north by the drainages of Lake Clark and Tuxedni Bay on Cook Inlet, on the west by the Kvichak River drainage and the Bering Sea, and extends southwest to the Isanotski Strait near Cold Bay and Izembek National Wildlife Refuge (Fig. 1). The mountains of the Aleutian Range extend down the Pacific coast of the peninsula, providing cool, maritime conditions, alpine tundra, heavy precipitation, high winds, and active volcanoes. Boreal forest occurs over much of the northern and central portions of Unit 9 at lower elevations, and coastal plains of rolling tundra extend down the western slope of the peninsula along the Bering Sea. Many of the rivers originating in Unit 9 are spawning habitat for anadromous salmon returning through Bristol Bay, a readily available prey for wolves. Most of the Alaska Peninsula is well suited to wolves, caribou (*Rangifer tarandus*), and brown bears (*Ursus arctos*). Moose (*Alces alces*) habitat is limited to relatively narrow riparian habitat and boreal forest along river and stream corridors, extending upwards into subalpine slopes during snow-free months. Portions of 4 ecoregions are found in Unit 9, including the Alaska Range, the Lime Hills, the Bristol Bay lowlands, and the Alaska Peninsula (Nowacki et al. 2001).

Unit 10 is comprised of the Aleutian Islands, located directly southwest and west of the Alaska Peninsula (Fig. 2). Only Unimak Island (1,586 mi<sup>2</sup>) is included in this report, as it is the only island in the Aleutian Island archipelago with an endemic wolf population. The island’s habitat is a mix of active and dormant volcanoes, recent-to-ancient lava flows, treeless rolling tundra, and a few riparian corridors on the Pacific (southern) side of the island, such as the Lazaref River (Fig. 2). Salmon, seabird carcasses, and beached marine mammals provide a variety of food resources in addition to caribou (Watts et al. 2010, Stanek 2014, Watts and Newsome 2016).



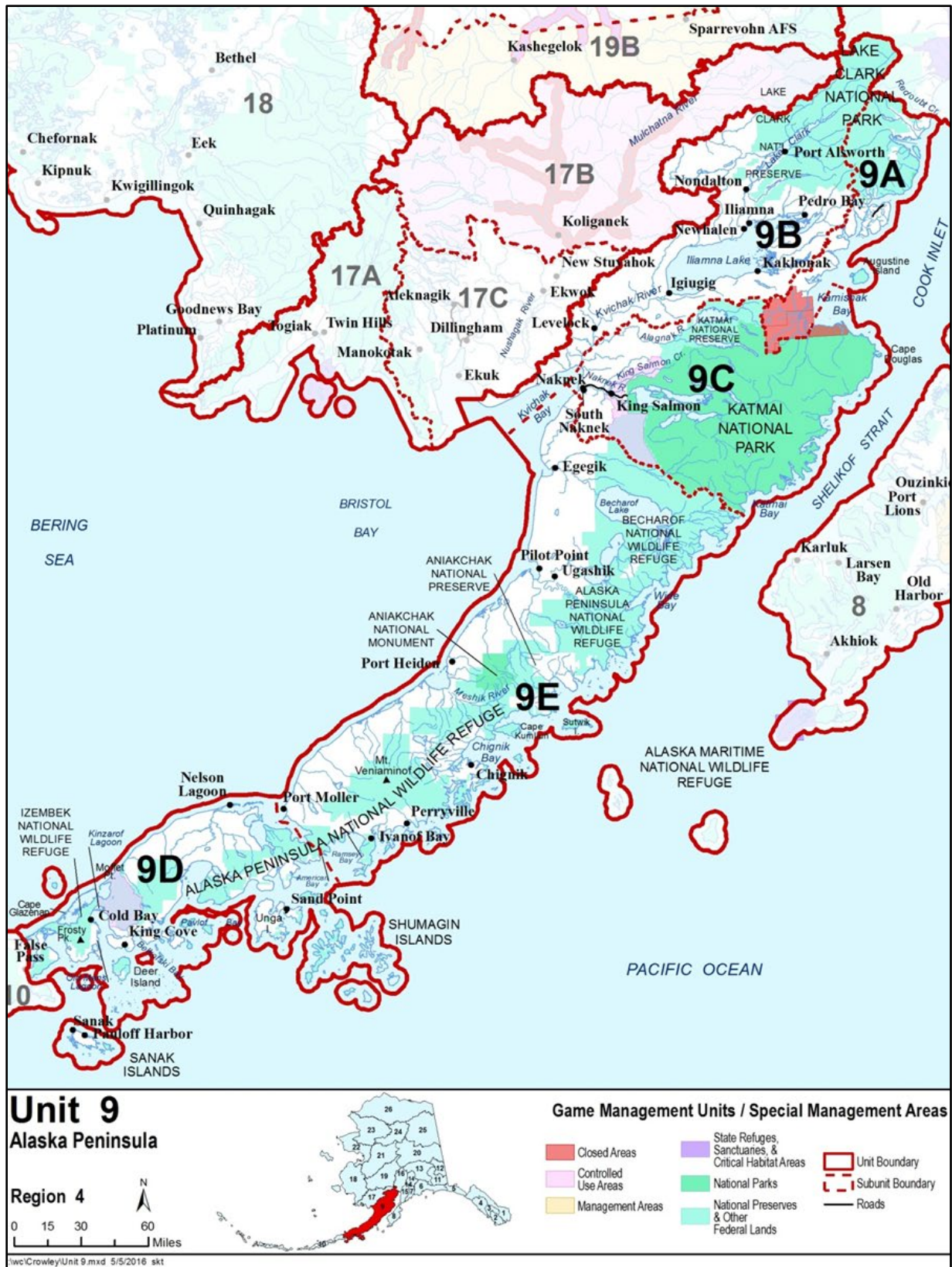
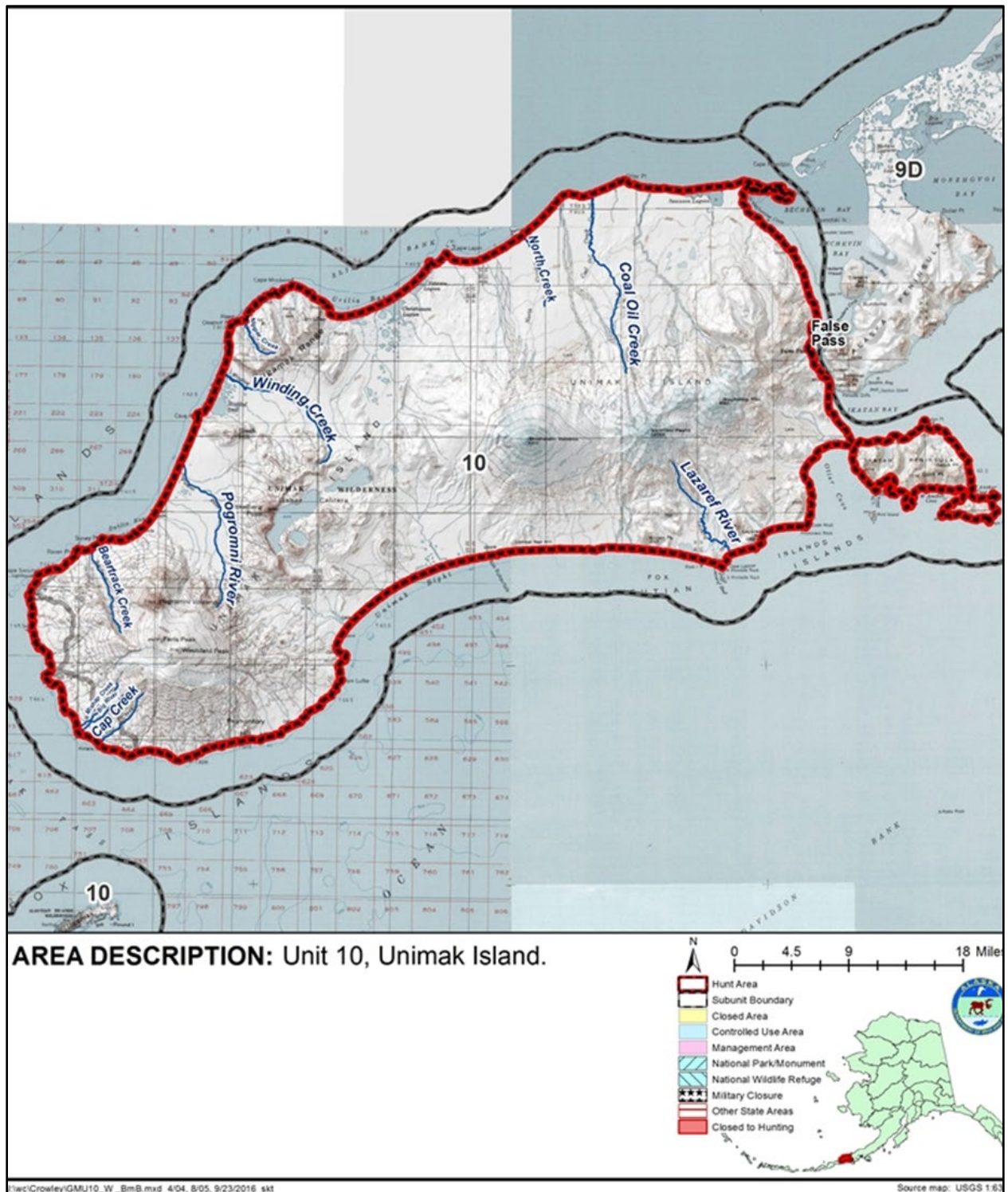


Figure 1. Game Management Unit 9, Alaska Peninsula in Southwest Alaska, regulatory years 2015–2019.





**Figure 2. The Unimak Island portion of Game Management Unit 10, Southwest Alaska, regulatory years 2015–2019. Unimak is the first island in the Aleutian Island chain, and the only island in Unit 10 with wolves.**

## Summary of Status, Trend, Management Activities, and History of Wolves in Units 9 and 10.

Wolves are present throughout Unit 9 and on Unimak Island in Unit 10. Data on historic wolf abundance are lacking, but presumably the population was reduced by federal wolf control during the 1950s. Wolves increased after the end of the federal wolf control program but were considered at low density and not limiting the moose and caribou populations by the early 1980s (Sellers and McNay 1984). Wolf numbers apparently increased during the 1990s, and based on known pack sizes and territories, Sellers (2000) extrapolated a rough population size of 350 wolves for Units 9 and 10. Wolf numbers were primarily affected by prey abundance and periodic outbreaks of rabies. Although rabies is endemic to Unit 9 fox populations (Rausch 1977), outbreaks in wolves occur infrequently. The last significant outbreak occurred in 1998 (Riley 2012; Sellers 2000); state and federal biologists know of no recently verified cases of rabies in wolves or foxes on the peninsula.

Wolf numbers appear to have remained relatively stable in Units 9 and 10 during the 2000s and have since declined. Annual harvest during 1999–2011 sometimes exceeded 100 wolves, compared to an average of approximately 40 wolves since that period. However, declining harvest could also be a result of declining trapper activity in Units 9 and 10. In a cooperative effort with Becharof National Wildlife Refuge staff to estimate wolf density, pack size, and distribution in selected areas of Unit 9, biologists captured 16 wolves in RY10, including 10 in Unit 9E, 3 in Unit 9C, and 3 on Unimak Island in Unit 10. In RY11, we caught 9 wolves, including 2 on Unimak Island in Unit 10, 6 in Unit 9E, and 1 in Unit 9C. In RY13, we captured 6 wolves, including 2 in Unit 9C and 4 in Unit 9E. Wolf density in Unit 9E and the southwest portion of Unit 9C was 16–18 wolves/1,000 mi<sup>2</sup> (6–7 wolves/1,000 km<sup>2</sup>; Brna and Verbrugge 2013). During this period, 5 packs of 3–7 adult wolves, plus pups, were observed occupying very large territories of 3,089–5,405 mi<sup>2</sup> (8,000–14,000 km<sup>2</sup>) in Lake Clark National Park and Preserve (National Park Service 2016).

Ungulate prey abundance has varied during the past 70 years. Both moose and caribou populations have varied widely, and on occasion, both have declined to very low levels at the same time. Prior to the mid-1900s, moose were scarce on the Alaska Peninsula. During the 1950s and 1960s, moose densities increased greatly and spread southwestward, then decreased during the mid-1970s (Smith et al. 1979). Moose numbers were relatively stable at moderate to low densities from 1980 through the early 2000s and stable at low density (averaging <0.5 moose/mi<sup>2</sup>) after 2010 (Crowley 2014).

Caribou populations in Units 9 and 10 have fluctuated dramatically throughout recorded history. The Mulchatna caribou herd (MCH), which originates west of Unit 9 but ranges south to the Naknek River into Units 9B and 9C, has varied from about 14,000 to over 200,000 caribou. The Northern Alaska Peninsula caribou herd (NAP) has ranged from approximately 2,500 to 20,000 caribou. The Southern Alaska Peninsula caribou herd (SAP) and the Unimak caribou herd varied from 1,300 caribou to an estimated 4,200 caribou, combined.

State and federal caribou hunts were closed on SAP in RY07 because of declining herd size, and the Alaska Board of Game (BOG) authorized a predation control program to reduce wolf

predation on caribou calves. Calf survival immediately improved following the selective removal of 28 wolves from calving areas in RY07. This program continued with the selective removal of 8 wolves in RY08 and 2 wolves in RY09, after which the program was suspended. Calf recruitment increased dramatically during RY08–RY10 following selective wolf removal on the calving grounds. SAP continued to recover, and wolf harvest by the public increased after predator control.

In response to the declining NAP population, biologists evaluated intensive management (IM) options for NAP in 1999, 2004–2005, and 2007–2009, concluding on all occasions that no viable solutions existed to alter the status of this herd (Butler 2009). However, in March 2010, BOG authorized a predation control program on NAP, which became active in RY11. Only 15 wolves were taken under the IM program, compared to 179 wolves harvested under regular hunting and trapping regulations during RY11–RY14. The low harvest under the IM program was attributed to bad weather, lack of snow, formidable logistics, and prohibited access to federal lands. The NAP IM program was suspended in 2018. Wolf harvest by hunters and trappers on NAP began increasing in the late 1990s, possibly in response to the publicity of ADF&G and BOG conservation actions taken as NAP declined. Average wolf harvest during 1999–2011 ( $\bar{x} = 58$ ) was double that of the previous decade on NAP ( $\bar{x} = 28$ ). Wolf harvest increased in Unit 9D following predation control, peaked in RY11, and has since declined. Also in RY11, BOG authorized IM programs for wolf control in nearby Unit 17, which included Unit 9B, to benefit MCH. Four wolves were taken in Unit 9B under one same-day airborne program in RY18.

## Management Direction

### EXISTING WILDLIFE MANAGEMENT PLANS

- Alaska Wildlife Management Plan, Southwest Alaska (ADF&G 1976).

### GOALS

1. Provide for an optimum harvest of wolves.
2. Provide the greatest sustained opportunity to participate in hunting and trapping wolves.

### CODIFIED OBJECTIVES

#### Amounts Reasonably Necessary for Subsistence Uses

The Unit 9 and Unimak Island portion of Unit 10 wolf populations have a positive customary and traditional use determination. The amounts reasonably necessary for subsistence in Unit 9 is 10–28 wolves and 0–1 wolf for Unimak Island.

#### Intensive Management

IM programs were approved by BOG in 2008 for SAP in Unit 9D and in 2010 for NAP in Units 9C and 9E. Both programs are inactive except for waiving of the nonresident tag fee for wolves. In RY11, BOG initiated an IM program to benefit MCH in which a portion of the

control area was in eastern Unit 9B; this program was still active throughout the 2015–2019 report period.

## **MANAGEMENT OBJECTIVES**

Maintain a wolf population that will sustain a 3-year average annual harvest of at least 50 wolves.

## **MANAGEMENT ACTIVITIES**

### 1. Population Status and Trend

ACTIVITY 1.1. Monitor pack number and size in Unit 9D by capturing and collaring wolves in the vicinity of SAP caribou, particularly within calving areas.

#### *Data Needs*

Monitoring wolf packs and spatial distribution on SAP would be used to evaluate the potential impact of future predation control to benefit SAP caribou, specifically those packs impacting calving areas on state lands.

#### *Methods*

Wolves were not captured due to lack of funding.

#### *Results and Discussion*

SAP caribou herd has continued to increase, making predator control unlikely in the near future.

#### *Recommendations for Activity 1.1.*

Discontinue.

### 2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor the wolf harvest through field observations, fur sealing reports, trapper questionnaires, and contact with trappers and hunters.

#### *Data Needs*

Monitoring, collecting, and analyzing harvest data is critical for sustained yield management and determining combined harvest from IM programs, hunters, and trappers. Harvest distribution also indicates a minimum distribution of wolves across the peninsula. Harvest data are used to verify that the wolf population is sufficient to sustain a 3-year average harvest of at least 50 wolves.

#### *Methods*

Hunters and trappers are required to have their wolf harvests sealed within 30 days of the season's end. Data collected during sealing includes pack size, harvest location and month,

hunter-trapper method, and transportation used. These data are compiled and stored in a wolf database on ADF&G’s Wildlife Information Network server (WinfoNet).

*Season and Bag Limit*

Resident and nonresident seasons are identical.

	Unit	Bag limit	Open season
Hunting	Unit 9 and 10	10 wolves per day	10 August–30 June
Trapping	Unit 9	No limit	10 August–30 June
	Unit 10	No limit	10 November–30 June

*Results and Discussion*

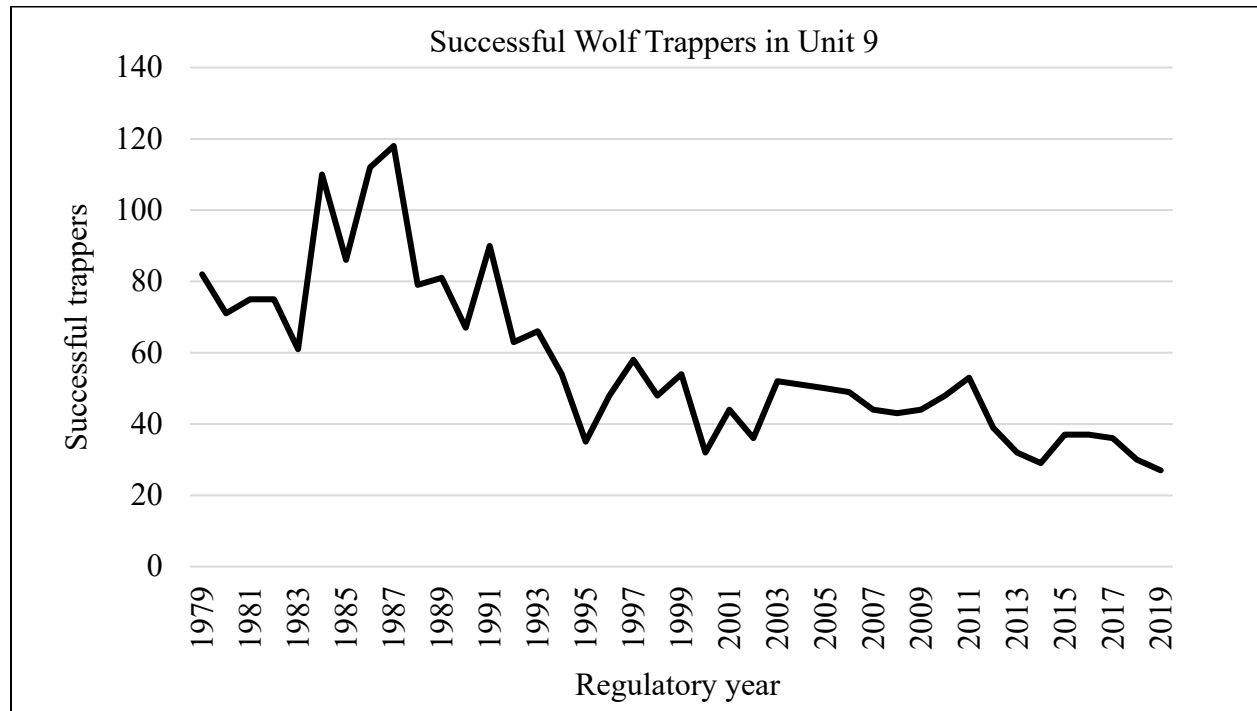
Harvest by Hunters-Trappers

During RY15–RY19, the reported wolf harvest by hunters and trappers in Unit 9 was 25–60 wolves annually; in Unit 10, it was 0–3 wolves (Table 1). Hunting and trapping harvests were affected by warming winter weather conditions that limit hunter and trapper transportation. In RY14, for the first time since 1996, the 3-year average annual harvest of wolves in Unit 9 dropped below 50 wolves, and it remained there during this reporting period. The last exceptionally cold and snowy winter occurred during RY11, when 143 wolves were taken.

The number of all trappers (not just wolf trappers) sealing hides from Unit 9 was at an all-time low of 27 in RY19 (Fig. 3). The majority of wolves harvested during the reporting period in Units 9 and 10 were shot (68%) rather than trapped (32%).

**Table 1. Reported wolf harvest in Units 9 and 10, Southwest Alaska, regulatory years 2010–2019.**

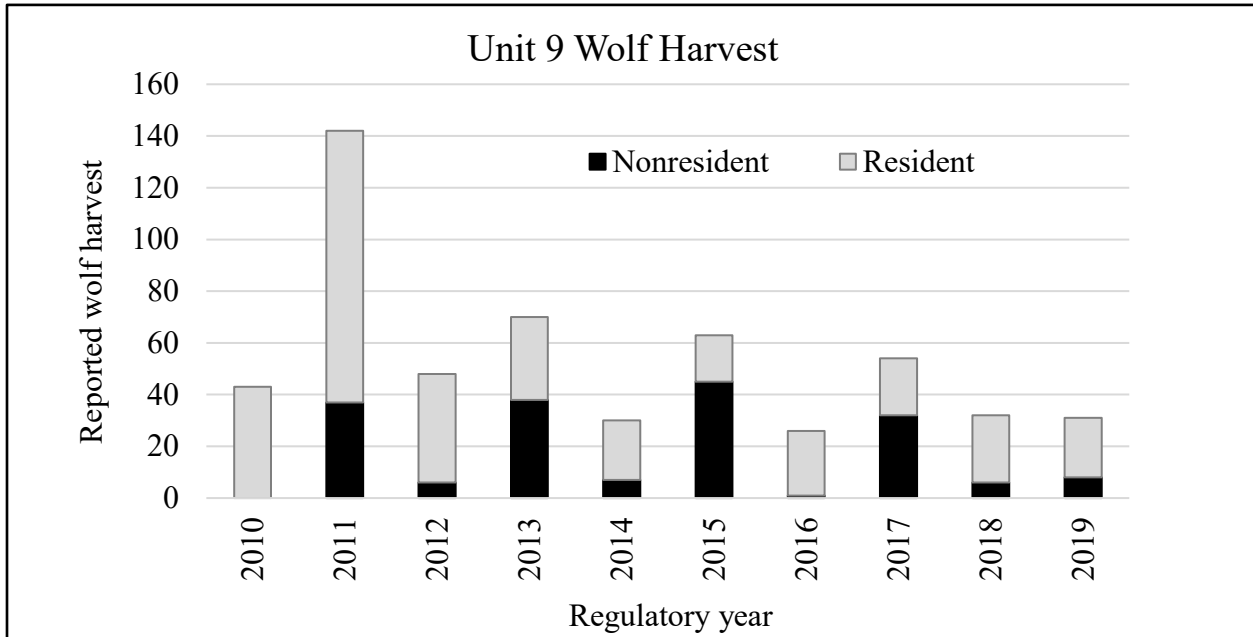
Regulatory Year	Unit					Unit 9 total	Unit 10 total	Units 9 & 10 total
	9A	9B	9C	9D	9E			
2010	–	9	18	2	14	43	–	43
2011	–	19	48	15	61	143	1	144
2012	–	16	9	5	14	44	4	48
2013	1	10	5	12	36	64	6	70
2014	–	2	6	1	18	27	7	34
2015	4	3	5	7	41	60	3	63
2016	–	2	4	–	19	25	1	26
2017	3	9	7	4	30	53	1	54
2018	–	8	6	10	6	30	2	32
2019	–	5	12	5	10	32	–	32
2010–2014 Average	0.3	11.2	17.2	7.0	28.6	64.2	3.6	67.8
2015–2019 Average	1.4	5.4	6.8	5.2	21.2	40	1.4	41.4



**Figure 3. Number of successful wolf trappers in Unit 9, Southwest Alaska, regulatory years 1979–2019.**

### Hunter Residency and Success

Wolf harvest in Unit 9 is in part driven by state biennial brown bear seasons, which are open in the fall during odd years and in the spring during even years. Nonresidents (and residents) may hunt wolves without a big game locking-tag in Units 9 and 10, and therefore hunt wolves opportunistically during their bear (or moose) hunting trips. In RY13, RY15, and RY17 wolf harvest by nonresident hunters exceeded wolf harvest by resident hunters and trappers during open bear hunts (Fig. 4). It should be noted there was no spring bear season in RY19 (spring 2020) because of pandemic travel restrictions.



**Figure 4. Wolf harvest by residency in Unit 9, Southwest Alaska, regulatory years 2010–2019.**

*Note:* RY11 had an exceptionally cold and snowy winter, creating good travelling conditions for hunters and trappers.

### Harvest Chronology

Thirty-nine percent of the wolf harvest occurred during May and October during RY15–RY19, coinciding with open bear seasons. Most of the remaining harvest occurred from January through March, and only 1 wolf was taken in June.

### Transport Methods

Airplanes were the most common method of transportation used to harvest wolves (42%), followed by 4-wheelers (26%) and snowmachines (12%).

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

None occurred during the reporting period.



*Recommendations for Activity 2.1.*

Continue monitoring harvest.

### 3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities occurred in Units 9 and 10 during RY15–RY19.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

### Data Recording and Archiving

- Digital data were backed up daily on an inhouse server (O:\WC-DIV).
- Paper records were stored in file cabinets and shelves in area biologist and assistant area biologist's offices.
- Archived records were stored in indexed and labeled boxes on the second floor of the new warehouse (O:\WC-DIV\Admin King Salmon Area Office\Filing system\archived filing system index).

### Agreements

None.

### Permitting

None required.

## **Conclusions and Management Recommendations**

The average annual wolf harvest during the reporting period was 40 wolves in Unit 9 and 1.4 wolves in Unit 10. Wolf harvest was at the lowest level in about 3 decades in RY19, continuing a long-term decline since the mid-2000s. Nonresident hunters have taken advantage of the big game tag fee exemption and are taking approximately 50% of the annual wolf harvest during open bear seasons.

## **II. Project Review and RY20–RY24 Plan**

### **Review of Management Direction**

#### **MANAGEMENT DIRECTION**

Manage wolves on the sustained yield principle for the benefit of the resource and the people of Alaska.

## **GOALS**

1. Provide for an optimum harvest of wolves.
2. Provide the greatest sustained opportunity to participate in hunting and trapping wolves.

No changes are recommended.

## **CODIFIED OBJECTIVES**

### Amounts Reasonably Necessary for Subsistence Uses

The Unit 9 and Unimak Island portion of Unit 10 wolf populations have a positive customary and traditional use determination. The amount necessary for subsistence in Unit 9 is 10–28 wolves and 0–1 wolf for Unimak Island.

### Intensive Management

IM programs were approved by BOG in 2008 for SAP in Unit 9D and in 2010 for NAP in Units 9C and 9E. Both programs are inactive except for waiving of the nonresident tag fee for wolves. In RY11, BOG initiated an IM program to benefit MCH in which a portion of the control area is in eastern Unit 9B; this program is active through 2024 and will be reevaluated at the next Region IV BOG meeting.

No changes are recommended.

## **MANAGEMENT OBJECTIVES**

Maintain a wolf population that will sustain a 3-year average annual harvest of at least 50 wolves.

No changes are recommended.

## **REVIEW OF MANAGEMENT ACTIVITIES**

### 1. Population Status and Trend

There are no population status and trend activities planned for RY20–RY24.

### 2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor the wolf harvest through field observations, fur sealing reports, trapper questionnaires, and contact with trappers and hunters.

#### *Data Needs*

Monitoring, collecting, and analyzing harvest data are critical for sustained yield management and determining combined harvest from IM programs, hunters, and trappers. Harvest distribution also indicates a minimum distribution of wolves across the peninsula. Harvest data are used to

verify that the wolf population is sufficient to sustain a 3-year average harvest of at least 50 wolves.

### *Methods*

Hunters and trappers will continue to be required to have their wolf harvests sealed within 30 days of the season's end. Data collected during sealing includes pack size, harvest location and month, hunter-trapper method, and transportation used. This data will be compiled and stored in a wolf database on ADF&G's Wildlife Information Network server (WinfoNet).

### 3. Habitat Assessment-Enhancement

No activities for wolf habitat assessment or enhancement are expected in Units 9 and 10 during RY20–RY24.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

### Data Recording and Archiving

- Digital data will be backed up daily on an in-house server (O:\WC-DIV).
- Paper records will be stored in file cabinets and shelves in area biologist and assistant area biologist's offices.
- Archived records will be stored in indexed and labeled boxes on the second floor of the new warehouse (O:\WC-DIV\Admin King Salmon Area Office\Filing system\archived filing system index).

### Agreements

None.

### Permitting

None.

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