ADF&G Unit 2 Wolf Harvest Strategy for RY2019-RY2021

Game Management Unit 2 (Unit 2) is a densely forested island archipelago in southern Southeast Alaska (Figure 1). The unit has a temperate, moist maritime climate and supports high numbers of deer and the highest density of wolves in Alaska. The Unit 2 wolf population is mostly isolated from other wolf populations. The most likely corridor for dispersing wolves to enter or leave Unit 2 is by relatively short swims between islands linking the northeastern end of Prince of Wales Island and Zarembo Island in Unit 3. However, since the 1990s about 60 wolves have been radiocollared in Unit 2, and although those wolves often traveled throughout the unit, none ever left Unit 2. A genetic analysis also suggested very little immigration into Unit 2, about one individual per generation. Because wolves in Unit 2 appear generally isolated from wolves in adjacent game management units, it is appropriate to manage the population using a population objective. Throughout this strategy the term "population objective" refers to the fall (September) population of wolves in Unit 2.

The Alaska Department of Fish and Game (ADF&G) manages deer and wolf populations in Unit 2, and federal subsistence regulations implemented by the U.S. Forest Service (USFS) ensure a rural priority for federally-qualified subsistence users on federal lands, which make up over 70 percent of Unit 2. Management of Unit 2 wolves has been contentious with two Endangered Species Act petitions submitted in 1994 and 2011. Both petitions were found not warranted, but management of this high-profile population remains controversial. Establishing a population objective will clarify goals for this population and provide managers with a bar by which to measure success of their management. Clarifying how management decisions are made in this written strategy will foster a common public understanding of expectations for the population and harvest management.
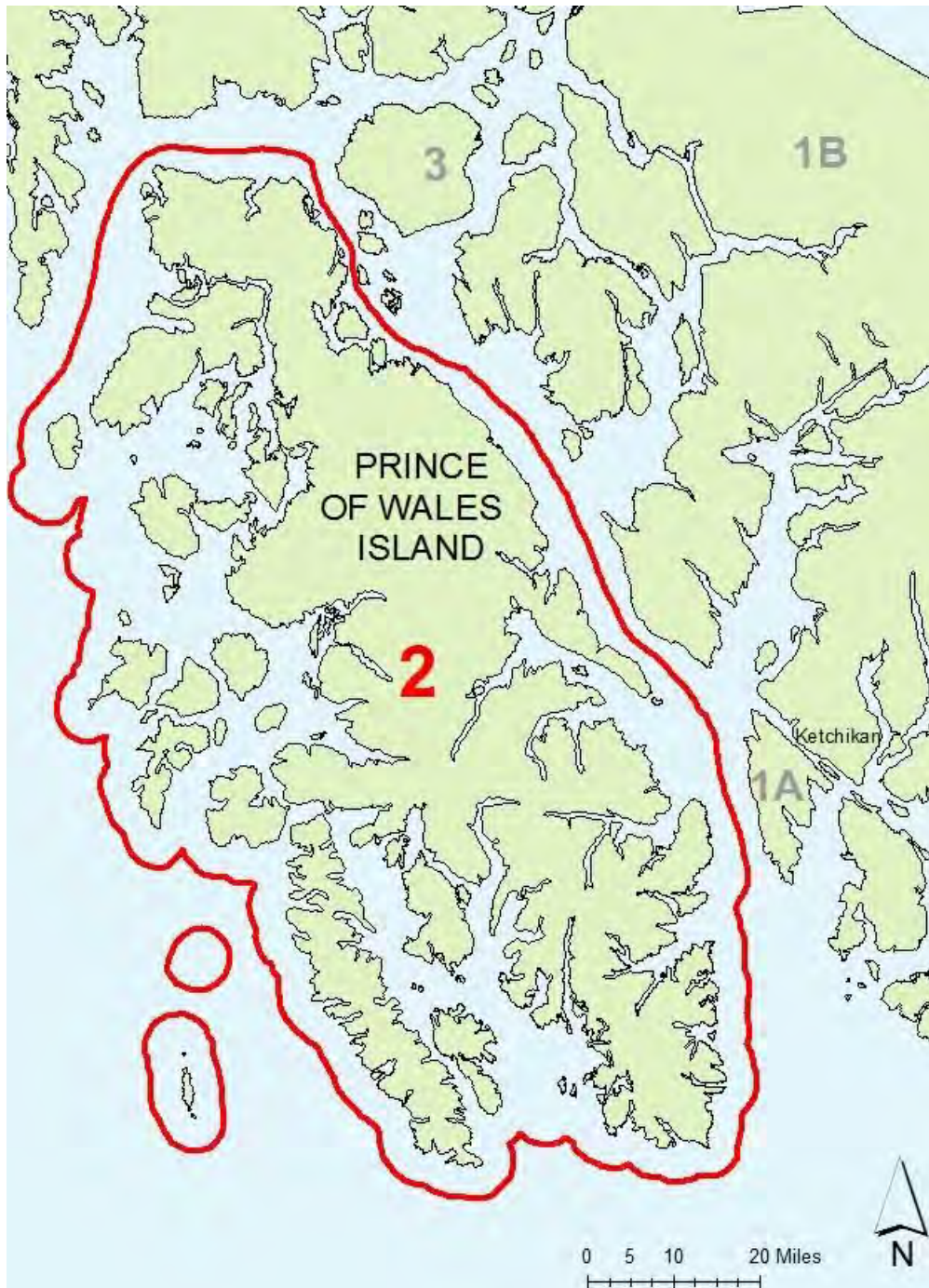
Figure 1. Game Management Unit 2 in southern Southeast Alaska. The Unit is comprised of Prince of Wales and associated islands.

Deer are the primary prey of Unit 2 wolves, but deer are also an important and highly valued species for hunters. Consequently, hunters commonly view wolves as competitors for deer and seek to limit their abundance. Extensive clearcut timber harvest throughout the unit has resulted in a decline in deer habitat capability, and a widespread network of logging roads has greatly

increased access for hunters and trappers. Although ADF&G and the USFS cooperatively manage harvest opportunity, an absence of explicit goals for the Unit 2 wolf population has resulted in ADF&G determining the appropriate size of the population. The department believes it is more appropriate for the public through the Alaska Board of Game (Board) to determine the appropriate size of the population. At the Board's January 2019 meeting ADF&G submitted Proposal 43 requesting guidance on managing the Unit 2 wolf population through endorsement of a new harvest management strategy based on a numerical fall population objective established by the Board. That proposal was adopted by the Board and this harvest management strategy describes the department's plan for managing the Unit 2 wolf population under a Board-established population objective including population thresholds that will trigger changes in harvest management.

A key advance that enables this new management strategy is development of a DNA-based spatially explicit capture-recapture (SECR) method for estimating abundance of Unit 2 wolves. ADF&G has used this method to estimate Unit 2 wolf abundance from 2013 to the present and used those estimates to manage harvest. Although the accuracy of these estimates is questioned by some members of the public, the SECR method is the most objective and conceptually sound way currently available to estimate wolf abundance in a forested environment.

The department will incorporate new population estimation techniques if they are demonstrated to provide more accurate estimates and are practical to apply in Unit 2.

Population Objective

ADF&G recommends that in addition to a fall population objective range the Board also establish numerical thresholds for when the population is (1) below the objective range but can still support some harvest while growing back to the objective range, and (2) too low to support harvest. Each threshold should be accompanied by an explicit change in harvest management. Figure 2 illustrates the fall population thresholds and harvest management changes to maintain the Unit 2 wolf population within the objective range.

Harvest Management

Zone 4: Pop > Objective

Up to 4-month season.

Zone 3: Pop = Objective

Up to 2-month season.

Zone 2: Pop < Objective

Up to 6-week season.

Zone 1: <100 wolves

Season closed until
population increases to
> 100 wolves.
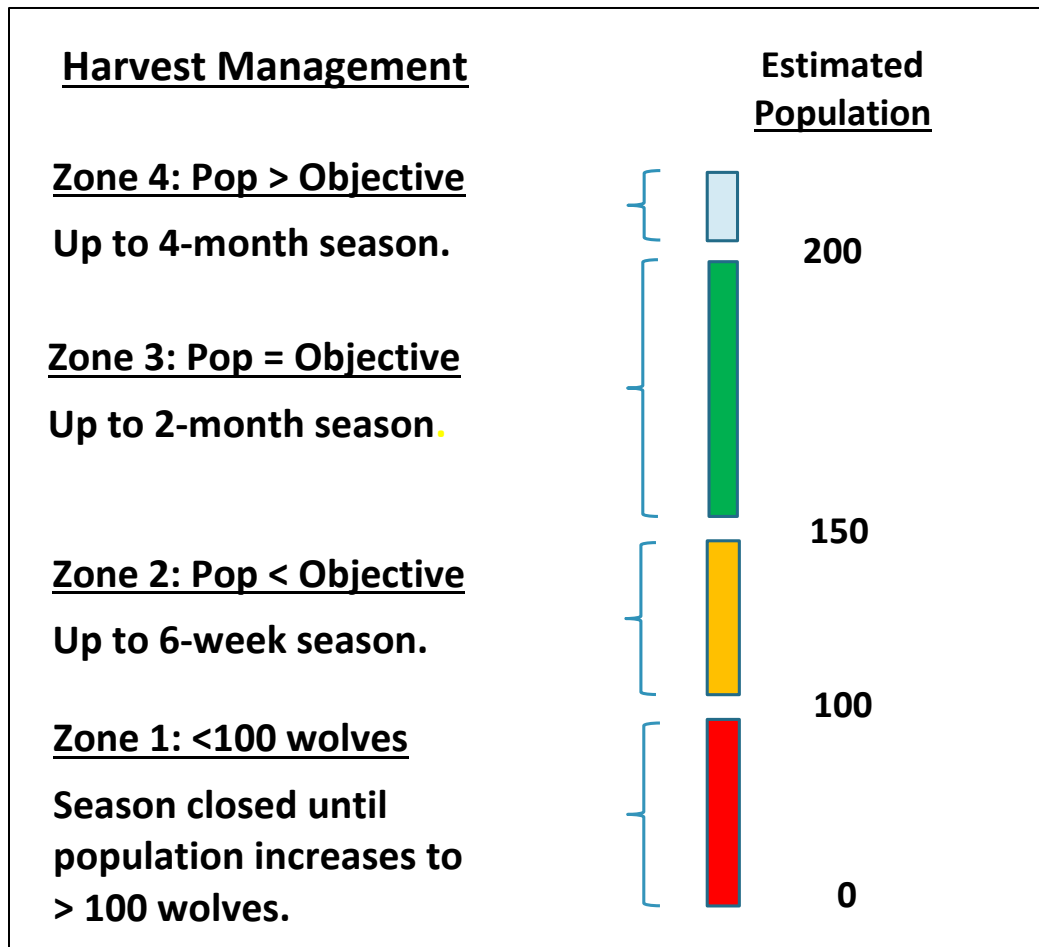
Estimated Population

200

150

100

0

Figure 2. Fall population thresholds and harvest management changes to maintain the Unit 2 wolf population within the Board-established objective range.

Rationales for population thresholds:

Zone 1: Closed Season – When the point estimate (the value most likely to be correct given the data collected) for the most recent fall population estimate is fewer than 100 wolves, hunting and trapping seasons will be closed to encourage growth toward the objective range. Considering the 1-year lag between when data are collected and a population estimate produced (i.e. when managers would learn the population is <100 wolves) that includes an additional trapping season, the department recommends the threshold for closing the trapping season be no lower than 100 wolves. In fall 2014 the department estimated the population at 89 wolves and in fall 2015 it was estimated at 108 wolves. Through conservative harvest management the population rebounded to an estimated 231 wolves within two years. Fall population estimates will be done annually until the population has grown to the Objective Range.

> **Harvest Management** – No harvest. Hunting and trapping seasons closed by emergency order.

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Zone 2: **Conservation** – When the fall population is estimated at 100-149 wolves, the department proposes reducing season length to offer some harvest opportunity while allowing the population to grow back to the objective range. The department believes it is important to include this management zone to account for the 1-year lag to produce a population estimate. By adjusting harvest opportunity when the population is within this range managers can prevent the population from declining into the closure range (Zone 1) and allow it to grow back to the objective range (Zone 3). In RY2015 and RY2016 shortened seasons that still offered some harvest opportunity were effective at increasing wolf abundance. Population estimates will be done annually until the population has grown to the objective range.

> **Harvest Management:** Hunting and trapping seasons will open on dates in current regulation. Trapping season will be open for up to 6 weeks. Hunting and trapping season will be simultaneously closed by emergency order. The length of the trapping season will be based on the most recent population estimate and other indicators of trend and abundance. The goal will be for a minimal harvest, less than 20 percent of the estimated population. Trapping season length will be announced by news release prior to the season.

Zone 3: Normal Season – The department recommends a fall population objective of 150-200 wolves for Unit 2. We believe that range will allow ample sustainable harvest and viewing opportunity while limiting effects of predation on deer harvest. When the population is within the objective range population estimates will be conducted as the department determines they are needed.

> **Harvest Management:** Hunting and trapping seasons will open on dates in current regulation. Trapping season will be open for up to two months. Hunting and trapping season will be simultaneously closed by emergency order. The length of the trapping season will be based on the most recent population estimate and other indicators of trend and abundance. The goal will be to allow adequate harvest to maintain the wolf population within the objective range. Trapping season length will be announced by news release prior to the season.

Zone 4: Extended season – When a fall population estimate indicates the population exceeds the objective range (>200 wolves) the department may extend the trapping season to up to 4 months.

> **Harvest Management:** Hunting and trapping seasons will open on dates in current regulation. Trapping season will be open for up to four months. Hunting and trapping season will be simultaneously closed by emergency order. The goal of an extended

season will be to reduce the wolf population to the objective range by offering additional harvest opportunity. Trapping season length will be announced by news release prior to the season.

Monitoring Abundance and Trend of the Unit 2 Wolf Population

The department will estimate Unit 2 wolf abundance using the SECR method developed by Roffler et al. (2016) (or a new technique) as often as deemed necessary to ensure the fall population remains within the objective range and harvest is sustainable. However, as Unit 2 hunters and trappers and department staff develop a better sense of what the objective abundance of wolves looks like on the ground, we anticipate being able to use other less intensive methods of monitoring trend, abundance and distribution of wolves in the unit. We believe one key indicator will be confirming that new animals are being recruited into the population.

Other population monitoring techniques that the department may employ include:

- Arrays of trail cameras to confirm presence, reproduction, and relative abundance of wolves around the unit.
- Collecting foreleg bones to monitor ages (pup, yearling, adult) of harvested wolves.
- Local expert opinion.

Literature Cited

Roffler, G. H., J. N. Waite, R. W. Flynn, K. R. Larson, and B. D. Logan. 2016. Wolf population estimation on Prince of Wales Island, Southeast Alaska: a comparison of methods. Alaska Department of Fish and Game, Final Wildlife Research Report ADF&G/DWC/WRR-2016-1, Juneau.