

The Status and Outlook of Southeast Alaska's Unit 2 Wolves

Division of Wildlife Conservation



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Cover Photo: Trail camera picture of a wolf in Southeast Alaska taken in 2012. ADF&G is currently using remote trail cameras and DNA hair-snaring methods to help estimate numbers of wolves in several areas and to refine current research techniques. ©2012 ADF&G.

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Introduction

For over two decades, the Alaska Department of Fish and Game (ADF&G) and the U. S. Forest Service (USFS) have cooperated on wolf research in Game Management Unit (GMU) 2 (Prince of Wales (POW) and adjacent islands). This research has enabled the collection of data concerning wolf distribution, movements, and abundance within the GMU. Among the initial research findings, Person et al. (1996) estimated the fall population of wolves in 1994 for a 8,510 km² portion of GMU 2 at 336 wolves, with a relatively wide confidence interval (95%) around the estimate (± 196 wolves). This estimate, together with other findings related to natural mortality, was subsequently used to set a harvest guideline for GMU 2 wolves. The department's recommendation to allow harvests of up to 25% of each fall's estimated wolf population was put into state regulations by the Alaska Board of Game (BOG) in 1997. That harvest guideline was increased to 30% by the BOG in 2000 based on newer findings that suggested natural mortality of GMU 2 wolves was lower than previously thought. The 30% harvest guideline was adopted into federal regulations as well. That guideline remains in effect today under both state and federal regulations.

Subsequent to initial population estimation efforts in the 1990s (Person et al. 1996), ADF&G again undertook an intensive estimation effort in the early to mid 2000s. ADF&G determined at that time that the wolf population remained nearly the same at 326 wolves (95% CL ± 147 wolves) within the same defined portion of GMU 2 as had been previously studied (Bethune 2009). In years subsequent to that estimate, ADF&G and federal staff used the estimate (though dated) to establish annual harvest levels, which remained at 90 wolves per season within GMU 2 until 2010.

In 2010, ADF&G and USFS staff believed, as did members of the public, that wolf numbers had declined in GMU 2 from earlier levels, though the magnitude of the decline was uncertain. In response, ADF&G staff worked with USFS staff and the Southeast Regional Advisory Council (RAC) to lower the annual harvest guideline from 90 to 60 wolves within the GMU. Reported wolf harvests during the ensuing 2011 and 2012 regulatory years were 28 and 52, respectively. The harvest guideline of 60 wolves remained in effect within GMU 2 during regulatory year 2013. As the 60-wolf harvest guideline was approached in late winter/early spring 2014, ADF&G issued an Emergency Closure two weeks prior to the scheduled end of the season, resulting in a total reported harvest for the regulatory year of 57 wolves.

Recent Research

During 2012 and 2013, research was reinitiated to develop a more expedient, efficient, and cost-effective technique for estimating wolf numbers, with the idea being to ultimately apply the technique more broadly across GMU 2 and eventually more of Southeast Alaska. The new research included radiocollaring wolves with advanced, downloadable GPS units (past efforts were limited to VHF units) and implementing hair-snare traps as a way to collect hair from wolves for DNA fingerprinting. DNA from collected hair has enabled researchers to identify individual wolves via genotyping and enabled the estimation of wolf densities within the study area using a state-of-the-art mark-recapture technique.

Data collected during 2012 proved insufficient to allow the application of the mark-recapture technique because of too few “recaptures.” However, data collected during 2013 proved to be sufficiently robust for a density estimate to be generated for the defined study area within the central part of POW Island (Fig. 1), in GMU 2. The technique looks promising for more broadly estimating wolf numbers across Southeast Alaska in the future, though refinement of the technique continues. The most current density estimate defined for the study area in central POW Island (Fig. 1), based on data collected during fall 2013, is 24.5 wolves/1000 km² (95% CL = 14.4–41.9/1000 km²) (ADF&G, in prep.). This compares to a previous density estimate of 39.5 wolves/1000 km² in 1994 within the same study area (Person et al. 1996).

Extrapolating the fall 2013 density estimate (24.5/1000 km²) within the study area to a larger area may be statistically warranted if wolf densities are assumed to be similar over the larger area. However, notable is the fact that wolf harvests within the study area are much higher than in the remainder of the unit.

Extrapolating the fall 2013 density estimate (24.5/1000 km²) to the whole of GMU 2 (9,069 km²; Fig. 1) results in a population estimate of 221 wolves (95% CL =130–378). Person et al. (1996) had previously estimated the wolf population within GMU 2 to be 336 and 326 (Bethune 2009); however, his estimates were based on a GMU 2 extrapolation area of 8,510 km² rather than the more up to date and accurate extrapolation area of 9,069 km². Applying Person’s earlier density estimates to the larger land area (9,069 km²) would result in estimates of 356 and 345 wolves during the 1990s and mid 2000s, respectively.

The lower 2013 estimate suggests a decline in wolf abundance within the study area over the past decade, though, with large and overlapping confidence intervals, it is not possible to provide statistical certainty that the population has declined, nor the magnitude of any decline. Regardless, these estimates constitute the best available data at this time and will be used in discussions with the USFS and RAC to establish a wolf harvest guideline for the 2014 regulatory season.

Besides the differences between methods used to estimate wolf numbers in the past and those developed more recently, there are other factors that relate to understanding the possible decline in wolf abundance. First, there is an incomplete understanding of the magnitude of the unreported harvest at the level of the Unit-wide wolf population. Second, it is uncertain whether wolves are homogeneously distributed across the GMU, which is assumed to be the case when applying the extrapolation. Understanding the distribution of wolves across the GMU remains one aspect of ongoing research efforts.

The most current wolf density estimate compares with others in various parts of North America where deer are the primary prey species, as in Minnesota (42 wolves/1000 km² (Van Ballenberghe et al. 1975); 25 wolves/1000 km² (Nelson and Mech 1986); and 39 wolves/1000 km² (Fuller 1989)). Where wolves have more varied prey, the wolf density has been estimated to be 30.5 wolves/1000 km² in Idaho (Idaho Dept. Fish and Game 2014), 38 wolves/1000 km² in Ontario (Pimlott et al. 1969), 28 wolves/1000 km² in Quebec (Potvin 1988), and 44 wolves/1000 km² on Vancouver Island (Hatter and Janz 1994). In Alaska’s Nelchina Basin, Golden (2005)

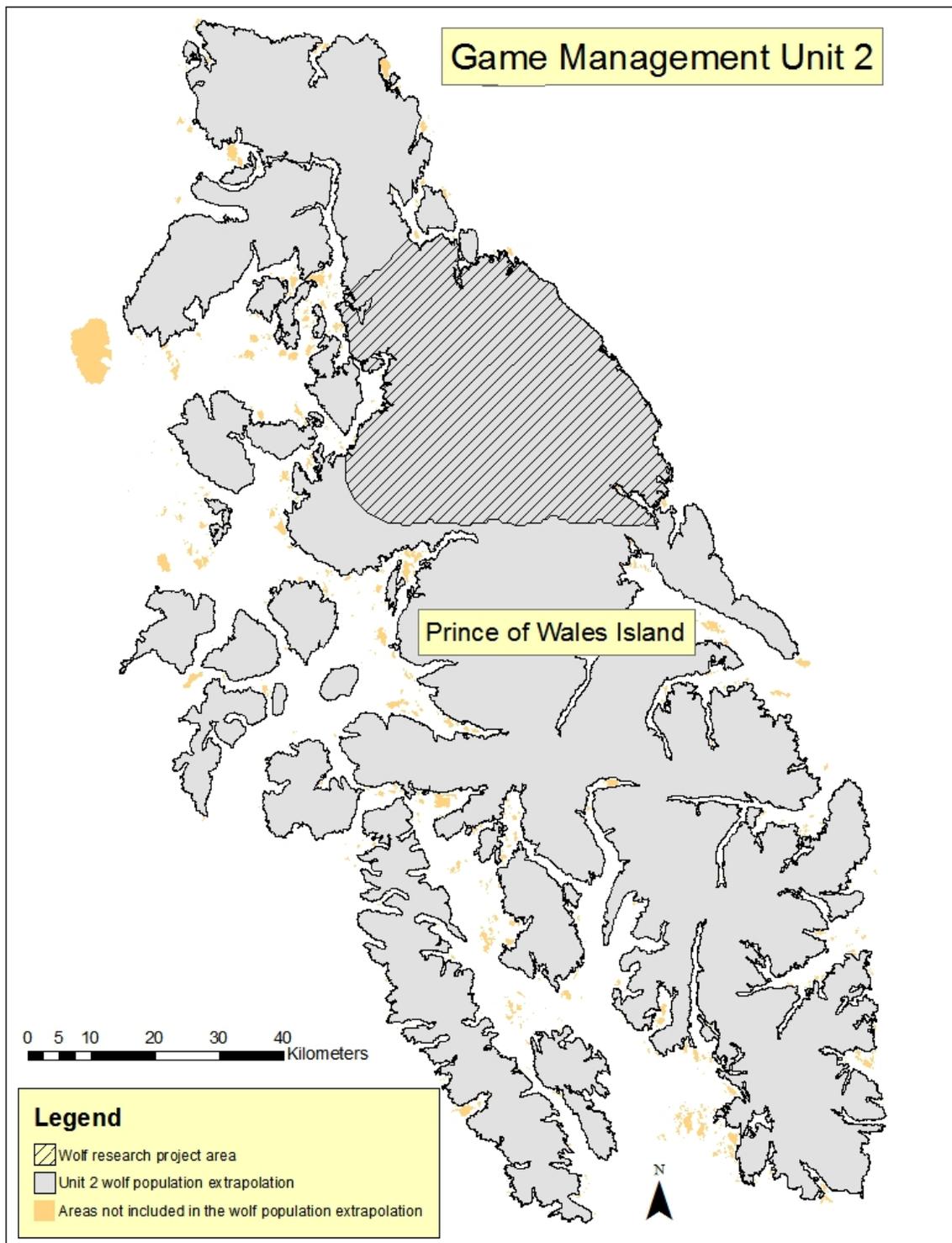


Figure 1. Game Management Unit 2, depicting the wolf population extrapolation area (9,069 km²), and the wolf research project area (1,683 km²).

reported a density estimate for wolves that ranged from 7.4 to 9.6 wolves/1000 km². All of these populations, with their associated density estimates, vary in the levels of human harvests, but all are managed sustainably.

Population Status and Harvest Guidelines

While the most current GMU 2 point estimate for the extrapolated area is lower than what was estimated previously, ADF&G has no reason to believe it is not sustainable or that it threatens wolf viability. The challenge facing ADF&G (as the wildlife manager), the USFS (as the land manager), and the state and federal regulatory bodies (e.g., BOG and Federal Subsistence Board (FSB)) is determining what level of sustainability to manage for.

Several residents of POW Island have expressed satisfaction with current wolf levels, with correspondingly higher deer encounters and deer harvesting opportunities than were experienced when wolf numbers were higher. Some have suggested that 200, rather than 300, wolves ought to be the target number to manage for in GMU 2. In the end, ADF&G must ensure that sustainable numbers of wolves are maintained, as directed by Alaska's state constitution. Data collected through ongoing wolf research will help inform the question of sustainable wolf population levels, with an associated acceptable level of risk.

Among the findings from previous GMU 2 wolf research was the recognition that not all wolves harvested in the GMU were reported each season. Person and Russell (2008) determined that 29% of their radioed wolves were killed and did not get reported; thereby excluding them from the total harvest counts. Recognizing this fact, and having discussed the matter among USFS colleagues, ADF&G submitted a regulatory proposal to the BOG for consideration at its upcoming January 2015 meeting in Juneau. That proposal asks that the existing harvest guideline of 30% of the estimated fall population be reduced to 20% in State regulation (5 AAC 92.008). Further, with support from GMU 2 wolf harvesters, ADF&G's proposal also includes a requirement that hunters report when an animal has been wounded and lost, and trappers report when they detect evidence that a wolf has escaped from a trap, or the trap is removed from a set location. These unrecovered wolves will be included as part of future mortality estimates and counted towards annual harvest guidelines.

Management and Research Plans

Beyond the regulatory actions being pursued with the BOG, ADF&G will continue working with the federal regulatory program (RAC, FSB) to implement similar regulations into federal regulation at upcoming spring 2015 meetings. Further, ADF&G is committed to continuing and expanding its ongoing cooperative wolf management and research in GMU 2 with its USFS colleagues, private landowners, and all users of the wildlife resources. Efforts will be made this fall to capture and radiocollar additional wolves in the established study area (Fig. 1) as well as in expanded areas north and south of the original study area. This project expansion is expected to enable ADF&G and its colleagues to obtain even more precise estimates of GMU 2 wolf numbers. Beyond that, ADF&G and the USFS are exploring the possibility of expanding the DNA estimation technique beyond the current study area boundaries and perhaps also engaging in future wolf research in the unroaded southern portion of POW Island. Costs, logistics, and study design will be a challenge in these difficult to access areas. Given the immediate planned

expansion of collaring and associated data collection to the north and south of the existing study area, any expansion into the southern unroaded area would not be expected to occur until summer or fall 2015, at the earliest. Wolf research efforts are expected to continue in GMU 2 through at least 2018.

By refining estimation techniques through ongoing research, by modifying the existing regulatory harvest guideline, by working with other landowners and managers to implement appropriate wildlife conservation strategies, and by working with the hunting and trapping community to foster trust and cooperation, ADF&G remains confident that wolves can continue to be sustainably maintained in GMU 2 and throughout the Southeast Alaska panhandle.

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