STAFF ANALYSIS
TEMPORARY SPECIAL ACTION
WSA 19-02

ISSUES

Temporary Wildlife Special Action Request WSA19-02, submitted by the Southeast Alaska Subsistence Regional Advisory Council (Council), requests extending the sealing period for wolf hunting and trapping and removing language referencing a combined Federal-State harvest quota for wolves in Unit 2.

DISCUSSION

The Alaska Board of Game (BOG) recently adopted a new harvest management strategy for wolves in Unit 2, resulting in misalignment of State and Federal regulations. The proponent states that their intent is to align State and Federal regulations to facilitate coordination between State and Federal managers and to reduce confusion among users. While the initial request also changed the hunting harvest limit to "no limit," the proponent clarified this was a mistake as that change would misalign State and Federal harvest limits.

The applicable Federal regulations are found in 36 CFR 242.19(b) and 50 CFR 100.19(b) (Temporary Special Actions) and state that:

> *. . . After adequate notice and public hearing, the Board may temporarily close or open public lands for the taking of fish and wildlife for subsistence uses, or modify the requirements for subsistence take, or close public lands for the taking of fish and wildlife for nonsubsistence uses, or restrict take for nonsubsistence uses.*

Note: Wolves in Southeast Alaska are classified as a subspecies called the Alexander Archipelago wolf (*Canis lupus ligoni*) and will be referred to as Alexander Archipelago wolf/wolves throughout this analysis.

Existing Federal Regulation

Unit 2 –Wolf Hunting

5 wolves.	*Sep. 1-Mar. 31.*

Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached. Any wolf taken in Unit 2 must be sealed within 14 days of harvest

Unit 2 –Wolf Trapping

No limit.	*Nov. 15-Mar. 31.*

Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached. Any wolf taken in Unit 2 must be

sealed within 14 days of harvest

Proposed Federal Regulation

Unit 2 –Wolf Hunting

5 wolves. *Sep. 1-Mar. 31.*

~~*Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached*~~*. Any wolf taken in Unit 2 must be sealed within* ~~*14 days of harvest*~~ ***30 days of the end of the season.***

Unit 2 –Wolf Trapping

No limit. *Nov. 15-Mar. 31.*

~~*Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached*~~*. Any wolf taken in Unit 2 must be sealed within* ~~*14 days of harvest*~~ ***30 days of the end of the season.***

Existing State Regulation

Unit 2−Wolf Hunting

Residents and Non-residents—5 wolves *Dec. 1-Mar. 31*

Hides must be sealed within 30 days of kill.

Unit 2−Wolf Trapping

Residents and Non-residents—No limit. *Nov. 15-Mar. 31*

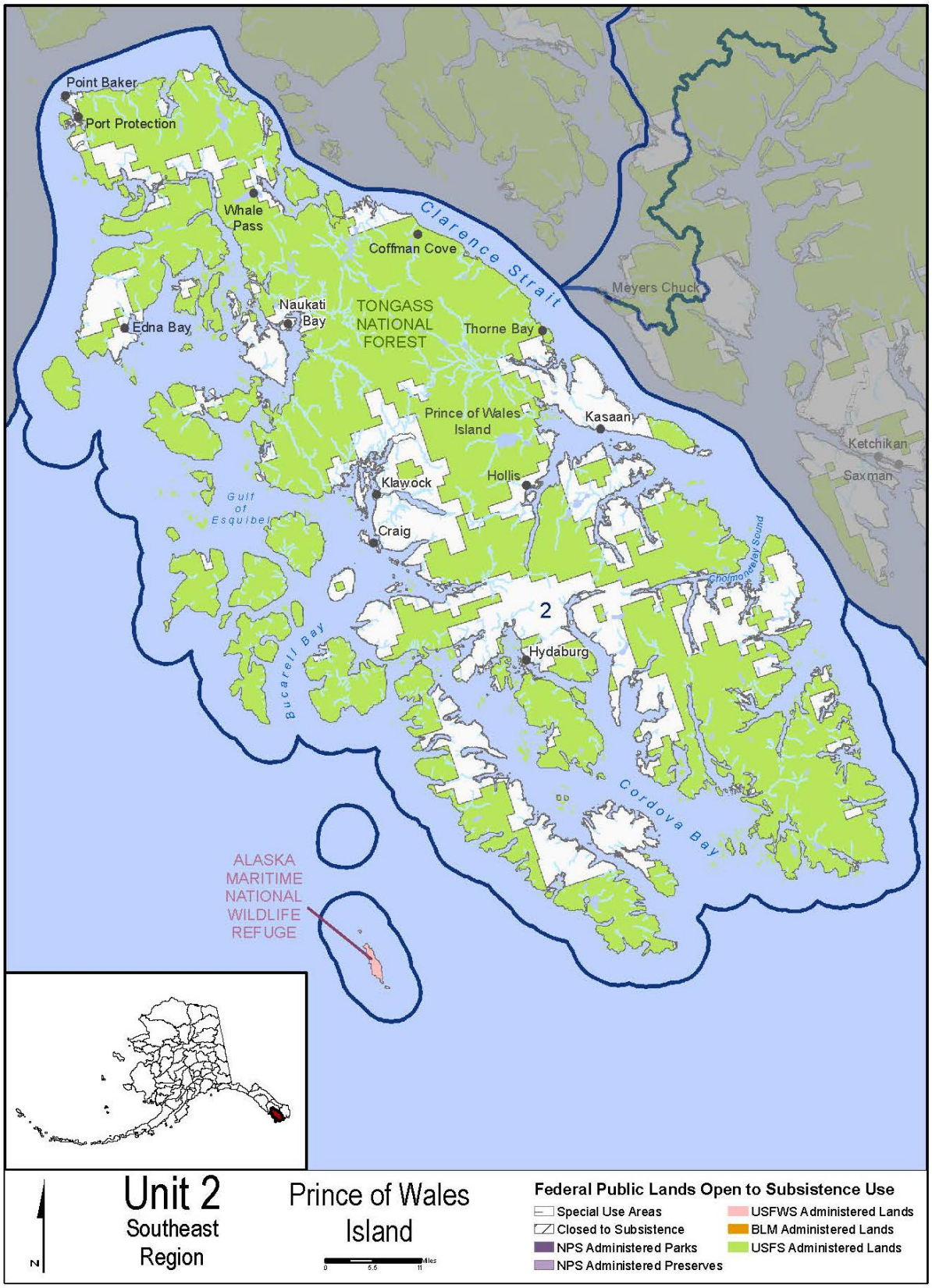
Hides must be sealed within 30 days after the close of the season.

Extent of Federal Public Lands

Unit 2 is comprised of 71.7% Federal public lands and consists of 71.6% USDA Forest Service (USFS) managed lands and 0.1% U.S. Fish and Wildlife Service (USFWS) managed lands (**Map 1**).

Customary and Traditional Use Determinations

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for wolves in Unit 2. Therefore, all Federally qualified subsistence users may harvest wolves in Unit 2.


Point Baker
Port Protection
Whale Pass
Coffman Cove
Clarence Strait
Meyers Chuck
Naukati Bay
TONGASS NATIONAL FOREST
Edna Bay
Thorne Bay
Prince of Wales Island
Kasaan
Ketchikan
Saxman
Klawock
Hollis
Gulf of Esquibel
Craig
Chomondeley Sound
2
Hydaburg
Bucarell Bay
Cordova Bay
ALASKA MARITIME NATIONAL WILDLIFE REFUGE
Unit 2
Southeast Region
Prince of Wales Island
Federal Public Lands Open to Subsistence Use
Special Use Areas
Closed to Subsistence
NPS Administered Parks
NPS Administered Preserves
USFWS Administered Lands
BLM Administered Lands
USFS Administered Lands

Map 1. Unit 2

Regulatory History

From 1915 through the early 1970s, the government paid a cash bounty for wolves in Southeast Alaska and during the 1950s, the Federal government poisoned wolves in the region to increase deer numbers (Porter 2018). Following the discontinuance of the wolf bounty program, wolf hunting and trapping regulations in Unit 2 remained the same until 1992 (Larsen 1994).

In 1990, Federal hunting and trapping regulations were adopted from State regulations. State and Federal trapping seasons were Nov. 10-Apr. 30 with no harvest limits, and State and Federal hunting seasons were year-round with no harvest limits.

Also in 1990, an interagency committee sponsored by the USFS had expressed concern about the viability of wolves in Southeast Alaska due to extensive timber harvesting on the Tongass National Forest (Porter 2018).

In 1992, the BOG restricted the State hunting season to Aug. 1-Apr. 30 and decreased the harvest limit to 5 wolves. The State hunting season has not changed since, and the State trapping season remained the same until 2019.

In 1993, the Biodiversity Legal Foundation and an independent biologist from Haines, Alaska petitioned the U.S. Fish and Wildlife Service (USFWS) to list the Alexander Archipelago wolf as a threatened subspecies pursuant to the Endangered Species Act (ESA) (Porter 2018).

In 1994, the Board adopted Proposal P94-02 to align the Federal wolf hunting season and harvest limit with the State hunting season (Aug. 1-Apr. 30 with a 5 wolf harvest limit).

In 1995 and 1997, the USFWS responded to the 1993 petition, finding the listing not to be warranted because the Alexander Archipelago wolf population appeared to be stable and because of a 1997 Tongass National Forest Management Plan, which identified a system of old-growth forest reserves geared toward conserving deer (primary prey of wolves) and, by extension, wolves (USFWS 1995, 2016, Porter 2003).

In 1997, the BOG implemented an annual Harvest Guideline Level (HGL) of 25% of the estimated Unit 2 fall wolf population (**Table 1**). The BOG established this maximum harvest level in response to a record and possibly unsustainable wolf harvest of 132 wolves in 1996 (Porter 2018). As the estimated wolf population was 350, the harvest quota was 90 wolves (see Biological Background section for sustainable harvest rates). The BOG also shortened the State hunting and trapping seasons to Dec. 1-Mar. 31 and required sealing within 30 days of harvest (Person and Logan 2012, Porter 2003).

Also in 1997, the Board adopted Proposal P97-08 to align Federal wolf hunting and trapping seasons and sealing requirements with the new State regulations. The Board also required that wolves must have the radius and ulna of the left foreleg naturally attached to the hide until sealing. Foreleg bone measurements are used as a proxy for wolf ages (pup, yearling, adult), providing population age structure and recruitment information.

In 1999, the Alaska Department of Fish and Game (ADF&G) closed the wolf season a month early (on February 29, 1999) because the HGL was predicted to be reached before the normal closing date (Person and Logan 2012, Bethune 2012, Porter 2003). Several new trappers worked Unit 2 in 1999 with good success, whereas historically only 3-4 trappers took more than 10 wolves each (Porter 2003).

In 2000, the BOG increased the HGL to 30% based on analyses indicating Unit 2 wolves experience low natural mortality (Porter 2018). The assumed wolf population was adjusted to 300 wolves, so the quota remained 90 wolves (Porter 2018).

In 2001, the Board adopted Proposal WP01-05 to shift both the hunting and trapping seasons from Dec. 1-Mar. 31 to Nov. 15- Mar. 15. The intent was to provide better access when less snow is on the ground and to coincide seasons with when wolf pelts are the most prime.

In 2003, the Board adopted Proposal WP03-10 with modification to extend the wolf hunting season from Nov. 15-Mar. 15 to Sept. 1-Mar. 31 to provide additional subsistence harvest opportunity, particularly during the fall deer hunting season and because wolf pelts prime early in Unit 2 (OSM 2003). The Board also delegated authority to the Craig and Thorne Bay District Rangers to close the Federal hunting and trapping season in consultation with ADF&G and the Chair of the Council when the combined Federal-State harvest quota is reached.

In 2007, the Board adopted Proposal WP07-15 with modification to change the closing date of the trapping season from March 15 to March 31 to provide more subsistence opportunity and to align the closing dates of State and Federal hunting and trapping seasons. The modification eliminated the requirement that wolves must have the radius and ulna of the left foreleg naturally attached to the hide until sealing.

In 2010, the BOG and the Board reduced the harvest quota to 60 wolves in response to a perceived decline in the wolf population (Porter 2018).

In 2011, the BOG changed the sealing requirement from 30 days to 14 days after harvest to help managers make quicker in-season management decisions (Bethune 2012).

Also in 2011, the Center for Biological Diversity and Greenpeace filed a second petition to list the Alexander Archipelago wolf as a threatened or endangered species under the ESA, including a request to consider Unit 2 wolves as a distinct population segment (DPS) (Porter 2018, Toppenberg et al. 2015).

In 2012, the Board adopted Proposal WP12-19 to change Federal sealing requirements to 14 days after harvest, aligning with State regulations. The Board shortened the sealing requirement to allow more efficient tracking of harvest to avoid exceeding harvest quotas.

From 2013-2018, ADF&G closed the Unit 2 wolf season early by emergency order because harvest quotas were expected to be met (**Table 1**). In 2014, ADF&G further reduced the harvest quota to 25 wolves based on recent population estimates (Porter 2018).

In 2015, the BOG revised the HGL to 20% in response to decreased population estimates and high estimates of unreported mortality (Porter 2018). As an additional conservation measure to account for unreported harvests and to address concerns about a declining population and potential listing under the ESA, State and Federal managers reduced the harvest quota by 50% (10% HGL) in 2015 and 2016 (**Table 1**) (SERAC 2017).

Also in 2015, the Board rejected Special Action Request WSA15-13 to close the Federal wolf hunting and trapping seasons for the 2015/16 regulatory year to all users. The Board determined the closure was not

warranted for either conservation concerns or continuation of subsistence uses, but noted that ADF&G and the USFS had established a very conservative harvest quota for the year.

In January 2016, the USFWS issued another "not warranted" finding in response to the 2011 ESA petition as the Alexander Archipelago wolf appeared stable and viable across most of its range (USFWS 2016, Porter 2018). Additionally, the USFWS determined that Unit 2 wolves did not meet the criteria for a DPS designation (persisting in a unique ecological setting, marked genetic differences, comprising a significant portion of the range) (USFWS 2016, Porter 2018).

In 2018, the Board rejected WP18-04 to increase the HGL to 30% under Federal regulations. The Council had submitted the proposal because it believed previous quotas were too conservative and did not accurately reflect the Unit 2 wolf population. The Board rejected the proposal due to conservation concerns over unsustainable harvests as well as concerns about the difficulty of State and Federal managers implementing separate quotas, which would also create confusion among users (FSB 2018). However, the Board expressed desire for the USFS and ADF&G to work together to find a sustainable solution to the Unit 2 wolf issue (FSB 2018).

In October 2018, the Board issued a new delegation of authority letter to the in-season managers of Unit 2 wolves. The new letter stated that the in-season managers could close, reopen, or adjust the Federal hunting and trapping season for wolves in Unit 2. Coordination with ADF&G, OSM, and the Council Chair is required.

In 2018, the BOG received three proposals for Unit 2 wolves for the 2018/19 regulatory cycle (effective July 1, 2019). The Council submitted Proposal 42 to increase the HGL to 30%. ADF&G submitted Proposal 43 to change the harvest management strategy from using HGLs to meeting specified population objectives. Proposal 43 also proposed changing the sealing requirement for the State trapping season to 30 days after the close of the season as the new management strategy would not depend on in-season harvest management (ADF&G 2019d). The Craig Fish and Game Advisory Council (Craig AC) submitted Proposal 44 to change the opening date of the wolf trapping season from Dec. 1 to Nov. 15, which would align with the Federal trapping season opening date. The Council and ADF&G had identified the need for population objectives for Unit 2 wolves to clarify and direct management and that population objectives should be set through a transparent, public process (Porter 2018, SERAC 2017). The Council withdrew Proposal 42 in support of Proposal 43.

In January 2019, the BOG adopted Proposal 43 as amended, which had overwhelming support from five ACs and the public (SERAC 2019, ADF&G 2019d). The BOG established the population objective range for Unit 2 wolves as 150-200 wolves (see Biological Background section) (ADF&G 2019a). The BOG also adopted Proposal 44, extending the State trapping season to align with the Federal season.

Table 1. Management data for Unit 2 wolves using the Harvest Guideline Level (HGL) management strategy (Schumacher 2019, pers. comm.).

Regulatory Year	Population Estimate*	Harvest Guideline level (HGL %)	Harvest Quota	Reported Harvest	Date closed by State Emergency Order (EO)
1996				132	
1997	360	25	90	78	
1998	360	25	90	91	
1999	360	25	90	96	Feb. 29
2000	300	30	90	73	
2001	300	30	90	62	
2002	300	30	90	64	
2003	300	30	90	33	
2004	300	30	90	77	
2005	300	30	90	60	
2006	300	30	90	38	
2007	300	30	90	36	
2008	300	30	90	24	
2009	300	30	90	22	
2010	200	30	60	28	
2011	200	30	60	28	
2012	200	30	60	52	
2013	200	30	60	57	Mar. 19
2014	221	30	25	29	Feb. 22
2015	89	20	9	7	Dec. 20
2016	108	20	11	29	Dec. 21
2017	231	20	46	61	Dec. 16
2018	225	20	45	44	Dec. 18/21**

* Population estimates from 1997-2013 were assumed estimates based on harvest levels and a 1994 population estimate. Population estimates from 2014-2018 are from DNA-based spatially explicit capture-recapture studies (see Biological Background section).
** Season closed by EO on Dec. 18, but reopened to Dec. 21 because bad weather prevented trappers from recovering gear.

Current Events

The Council submitted Proposals WP20-16 to change Unit 2 wolf trapping regulations and WP20-17 to change Unit 2 wolf hunting regulations for the 2020/22 regulatory cycle. The proposed changes mirror the requests of this special action request (eliminating the quota, extending the sealing requirement) with the additional request to change the hunting harvest limit to "no limit."

Tribal and ANCSA Corporation consultations were held on June 18, 2019. The Craig Tribal Association voiced support for WSA19-02, stating that moving away from a quota system is a step in the right direction and that adopting WSA19-02 should provide better harvest opportunity. The Craig Tribal Association also stated that the Unit 2 wolf population is abundant, needs higher harvest, and is negatively impacting the

deer population. The Association hopes deer harvest will improve as a result of higher wolf harvest, and expressed concerns about the accuracy of the wolf population estimates, the effects of logging on deer and wolf populations, and the lack of credibility agency officials give to local knowledge. No other comments were received.

A public meeting was held on June 25, 2019 in Klawock, AK. Four testimonies in support of WSA19-02 were received. One testifier represented the Craig Tribal Association, and three testifiers represented themselves. The Craig Tribal Association commented that people are seeing lots of wolves around the island, including in town, and that WSA19-02 is a step in the right direction. The Association also expressed concern for the deer population because of wolf predation, high buck harvests, and habitat changes, including loss of winter habitat and stem exclusion.

Other testifiers commented that the wolf population is up, that maintaining better control of the wolf population is important, and that the population objective of 150-200 wolves is sustainable. Testifiers also commented that the deer population has declined due to wolf predation and decreasing habitat quality, which is due to many logged areas being in the stem exclusion stage, which can persist for decades. One testifier expressed concern over how the Unit 2 wolf hunt will be regulated, managed and evaluated in the future, and how State and Federal managers would work together to establish season lengths. Another testifier commented that coordinating State and Federal regulations would be helpful to Prince of Wales residents.

ADF&G submitted comments in support of WSA19-02 because aligning State and Federal regulations would facilitate implementation of the new harvest management strategy, eliminate regulatory conflicts, and reduce user confusion. ADF&G also commented that the requested change in the harvest limit for the Federal hunting season would not align with State regulations, but would likely have little effect on harvest (ADF&G 2019f). However, as the proponent clarified that the requested change in the harvest limit was a mistake, ADF&G's comments in this regard are extraneous.

Biological Background

Unit 2 wolves are part of the Alexander Archipelago wolf subspecies, which ranges from coastal British Colombia north to Yakutat, Alaska and includes the islands in Southeast Alaska, excluding Unit 4 (USFWS 2015). Alexander Archipelago wolves tend to be smaller with shorter hair than continental wolves and can be genetically differentiated (USFWS 2015, Porter 2018). Using the best available data and modeling, USFWS (2015, 2016) estimated that the 2013 and 2014 Unit 2 wolf population comprised 13% (130-378 wolves) and 6% (50-159 wolves) of the total Alexander Archipelago wolf population (865-2,687 wolves), respectively. Because of the relatively high density of prey available, the islands of Unit 2 have long been assumed to support the highest densities of wolves in the state (Porter 2018). Indeed, USFWS (2015) notes that even the low, 2014 wolf density estimates for Unit 2 (9.9 wolves/1,000 km^2) are not particularly low by most standards for Northern wolf populations (Fuller et al. 2003).

State management objectives for Unit 2 wolves include (Note: State objectives were updated in 2019 after the BOG adopted Proposal 43, and are not currently published in any ADF&G management reports) (Schumacher 2019, pers. comm.):

- Manage harvest to meet a population objective of 150-200 wolves.

From 1997 (when the HGL management strategy was implemented) through 2013, Unit 2 wolf abundance was uncertain, and managers based decisions (e.g. harvest quotas) on assumed population levels, sealing records, and a 1994 population estimate (SERAC 2019, ADF&G 2019b, Porter 2003). Person and Ingle (1995) used a simulation model using radio-collared wolf data collected for a graduate research project to estimate 321 wolves and 199 wolves inhabited Unit 2 in fall 1994 and spring 1995, respectively (Porter 2003). The smaller spring estimate reflects overwinter mortality, primarily from trapping (Porter 2003). Between 1998 and 2002, Porter (2003) assumed the Unit 2 wolf population had remained relatively abundant because of consistently high harvests, which provide a population index.

Since 2013, ADF&G in cooperation with the USFS, the Hydaburg Cooperative Association, and The Nature Conservancy have employed a DNA-based spatially explicit capture-recapture (SECR) method to estimate Unit 2 wolf abundance (SERAC 2019, ADF&G 2019b). This method has been found to be the most robust and least biased method of estimating wolf populations in forested habitats (Roffler et al. 2016). The study uses hair boards equipped with scent lure to attract wolves and with barbed wire to obtain hair samples that can be sent to a lab for DNA analysis. Samples are collected from mid-October through December and lab results are usually received in late July (SERAC 2019, ADF&G 2015). Thus, harvest management decisions are made with last year's wolf population estimate. While these surveys and population estimates are currently conducted annually, they are expensive and labor intensive. Therefore, ADF&G will likely transition to conducting population estimates every 2-3 years in the future (ADF&G 2019d).

Between 2013 and 2018, Unit 2 wolf population estimates have ranged from 89-231 wolves (**Table 1, Figure 1**) (Schumacher 2019, pers. comm.). While the point estimates for the first two years differ drastically, statistically, no difference exists between the two estimates due to overlapping confidence intervals. As the study progressed, more hair boards were deployed, more wolves were recaptured in subsequent years, and staff became more skilled at handling samples, resulting in tighter 95% confidence intervals. The wolf population estimate increased significantly between 2016 and 2017. In addition to SECR population estimates, local hunters and trappers have expressed seeing many more wolves in recent years (SERAC 2017, 2018).

Carroll et al. (2014) considered wolf populations <150-200 individuals as small, and USFWS (2015) notes that most minimum viable population estimates for gray wolves range between 100 and 150 wolves. However, despite the comparatively small size and insularity of the Unit 2 wolf population, inbreeding probably is not affecting it (Breed 2007, USFWS 2015).

Natural causes account for only 4% of the annual mortality of the Unit 2 wolf population, while human-caused mortality accounts for the remainder (Person and Russell 2008, Wolf Technical Committee 2017). Person and Russell (2008) studied 55 radio-collared wolves in Unit 2 from 1993-2004, and 39 wolves (71%) were killed by humans, while only 5 (9%) died from natural causes. Similarly, ADF&G collared an additional 12 wolves from 2012-2015, and 8 (67%) were killed by humans, while only 1 (8%) died from natural causes (USFWS 2015). However, these studies took place in roaded portions of Unit 2 where harvest is higher, so human-caused mortality rates may be somewhat inflated (USFWS 2015).

Wolves are remarkably resilient to high levels of harvest and human activities due to their high potential annual productivity and long dispersal abilities (USFWS 2015, Weaver et al. 1996). If sufficient prey is available, wolves can rapidly repopulate areas depleted by hunting and trapping (USFWS 2015, Ballard et al. 1987). However, due to differences in wolf population characteristics (e.g. sex/age structure), a universal, sustainable human-caused mortality rate does not exist, and the Unit 2 wolf population may be particularly vulnerable to overexploitation due to its insularity and lack of immigration (USFWS 2015, Wolf Technical Committee 2017). Person and Russell (2008) reported that a >38% total annual mortality rate for Unit 2 wolves was likely unsustainable based on past harvest rates and population estimates. The Regional Wildlife Supervisor for Southeast Alaska, ADF&G stated that other wolf research and the scientific literature indicate that a healthy wolf population can sustain 30% annual mortality (SERAC 2017). Additionally, wolf harvest records indicate neither offering a cash bounty nor poisoning wolves during the early 20th century had any lasting effects on wolf abundance or distribution on Southeast Alaska islands (Porter 2018).

Alexander Archipelago wolves start breeding at 22-34 months of age, and litter sizes range from 1-8 pups, averaging 4.1 pups (USFWS 2015, Person et al. 1996, Person and Russell 2009). Person and Russell (2008) reported survival rates for Unit 2 wolves > 4 months of age as 0.54 between 1993 and 2004 (USFWS 2015). Den use occurs from mid-April through early-July after which pups are relocated to rendezvous sites usually <1 km from their den where they remain until October (USFWS 2015, Person and Russell 2009). Pack sizes on Prince of Wales Island (POW) average 7.6 wolves in the fall and 4.0 wolves in the spring, and home range sizes average 535 km^2, which is a quarter of the size estimated for wolves on the northern mainland of southeastern Alaska (ADF&G 2015d as cited in USFWS 2015).

New Harvest Management Strategy

Unit 2 is a good place to implement population objectives because there is very little dispersal into and out of the unit (ADF&G 2019d). The new wolf management strategy consists of four zones (**Figure 2**). Zone 1 sets the minimum wolf population threshold at 100 wolves and seasons would remain closed until the wolf population recovers. Zone 2 is the conservation zone where the wolf population is estimated between 100-149 wolves, and seasons of up to six week provide limited harvest opportunity and a buffer to recover the population before it declines into Zone 1. Zone 3 sets the population objective range at 150-200 wolves. This is the desirable zone, and harvest would occur during seasons of up to eight weeks. When the population is in Zone 3, SECR population estimates would only be conducted every 2-4 years. Zone 4 is the over-objective zone where wolf numbers exceed 200, and seasons of up to 4 months would be geared toward population reduction (ADF&G 2019b). An issue with this new strategy is the one year time lag in obtaining population estimates. For example, if the wolf population was in Zone 1, an additional trapping season would occur prior to managers learning this (ADF&G 2019b, 2019c). However, the HGL management strategy also announced harvest quotas based on population estimates that were at least one year old and, prior to 2014, were assumed estimates (**Figure 1**). State and Federal managers will announce season lengths annually before November 15, which is the opening date for Federal and State trapping seasons (Schumacher 2019, pers. comm.).

Setting these population objectives incorporated biological as well as social concerns as various user groups have strong and differing opinions about wolves in Unit 2 (e.g. subsistence deer hunters view wolves as competitors, ESA petitioners view wolves as threatened) (SERAC 2017, 2018, Wolf Technical Committee 2017, ADF&G 2019d). They also included traditional knowledge. The Craig Tribal Association testified that the USFS determined 150-200 wolves as a sustainable range after talking with local and traditional knowledge holders on POW (SERAC 2017). Similarly, a working group of the Council also thought the population objective range should be 150-200 wolves, which is the range the BOG adopted (SERAC 2017).

Stressors

Unit 2 wolves experience numerous stressors, including harvest, logging, road development, and climate-related events (USFWS 2015, Porter 2018). In their comprehensive status assessment for the Alexander Archipelago wolf, the USFWS (2015) determined the Unit 2 wolf population to have low resiliency due to high rates of unreported harvest, high rates of timber harvest with detrimental effects on deer, high insularity (little immigration or emigration), and high levels of boat and road access for hunters and trappers.

The presence of wolves in an area is closely linked with prey availability (USFWS 2015). While Unit 2 wolves feed on a variety of species including beavers and salmon, deer are their primary prey (USFWS 2015, Porter 2018). Both the comprehensive conservation assessment (Person et al. 1996) and the species status assessment (USFWS 2015) prepared in response to the 1993 and 2011 ESA listing petitions, respectively, identified maintaining deer populations as a primary conservation measure for Alexander Archipelago wolves (Porter 2018). Wolf abundance may be especially linked to deer abundance and availability in Unit 2 where other ungulate prey species (e.g. moose, elk, caribou) are not present (USFWS 2015).

Deer are primarily limited by habitat rather than by predation (SERAC 2017, USFWS 2015). In Unit 2, deer habitat is adversely affected by industrial-scale logging of old-growth forests, which has occurred in the unit since the 1950s and peaked in the 1980s (USFWS 2015). Clearcut logging has been the primary timber harvesting method and, as of 2015, 23% of forests in Unit 2 were logged (Shanley 2015 as cited in USFWS 2015). Albert and Schoen (2007) modeled deer habitat capability in Unit 2 for two time periods (1954 and 2002), determining it to have lost 38% and 11% of its habitat value in northern and southern POW, respectively (USFWS 2015). USFWS (2015, 2016) predict that past timber harvest in Unit 2 will result in 21-33% declines in the deer population and 8-14% declines in the wolf population over the next 30 years, with future timber harvest exacerbating these declines. However, in 2014 (most recent information available), the Unit 2 deer population appeared to be stable to slowly increasing (Bethune 2015). USFWS (2016) states the rate of future timber harvest is difficult to project.

Declines in understory vegetation correspond with decreased deer carrying capacity (USFWS 2015). Severe (deep snow) winters often result in deer population declines (e.g. Brinkman et al. 2011), and these effects are exacerbated by loss of old-growth forests. Old-growth forests have multi-layered canopies that intercept snow and moderate temperature and wind, providing shelter for and facilitating movements of deer in the winter (USFWS 2015, Porter 2018). They also maintain diverse understories that provide continuous forage for deer (USFWS 2015). Conversely, clearcuts may temporarily provide deer with winter forage, but this forage can be buried during winters with deep snow (Porter 2018). The initial flush

of forbs and shrubs in clearcuts provide deer with lower-quality forage, and regenerating trees shade out the understory vegetation after 20-35 years (Porter 2018, USFWS 2015). As Unit 2 timber harvest peaked in the 1980s, many stands are entering the successional stage that is very poor deer habitat (USFWS 2015).

In addition to altering the habitat of their primary prey species, logging also impacts Unit 2 wolves by constructing roads that provide relatively easy access for hunters and trappers into previously remote areas (Porter 2018, USFWS 2015). Person and Russell (2008) found roads clearly increased risk of death for POW wolves from hunting and trapping and contributed to unsustainable harvest rates. They also determined road density to be an important predictor of harvest up to 0.9 km of road per square kilometer (km/km^2). Above this threshold, increased road density did not correspond to increased harvest rates. Mean road density in Unit 2 is 0.62 km/km^2, ranging from 0-1.57 km/km^2 (Albert 2015 as cited in USFWS 2015). Person and Logan (2012) believe harvest from the densely roaded northcentral and central portions of POW are frequently unsustainable. The USFS aims to shift timber harvest to regenerating stands and away from old-growth stands, which also allows for the use of existing roads as opposed to constructing new ones (USFWS 2015, 2016).

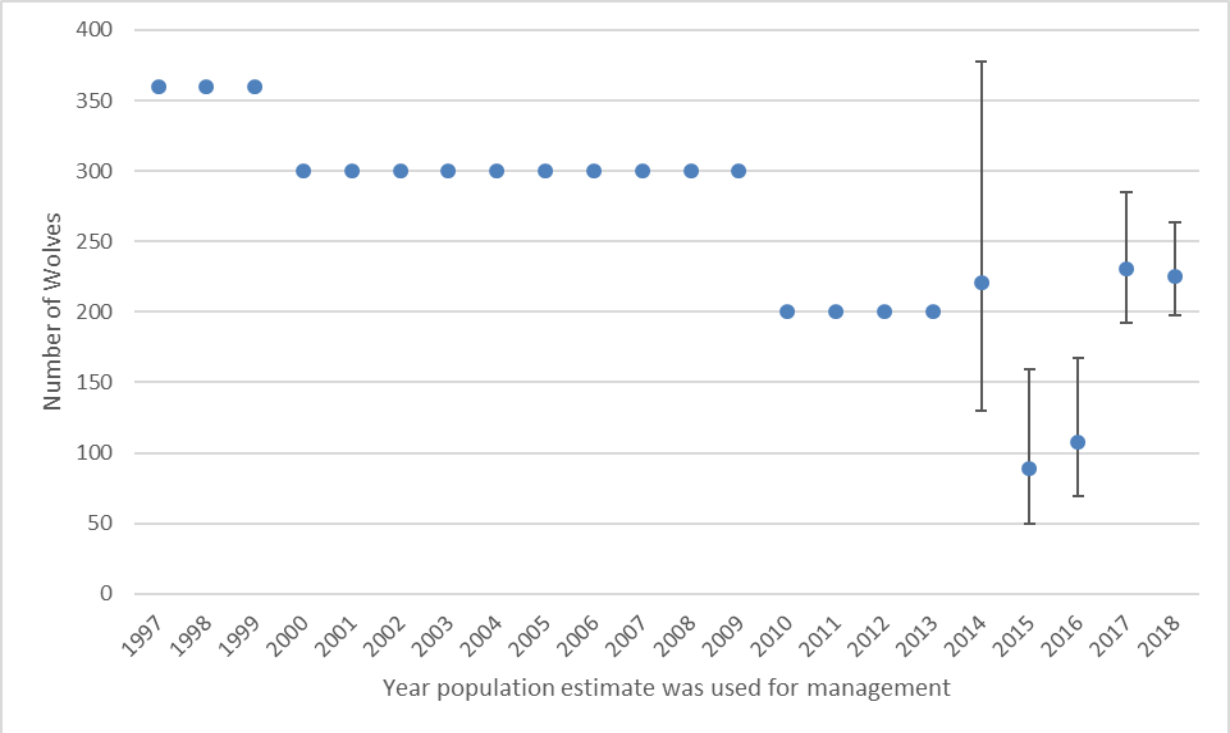


Figure 1. Unit 2 wolf population estimates, 1997-2018. Estimates from 1997-2013 are assumed from sealing records and a 1994 population estimate. Estimates from 2014-2018 are from a DNA mark/recapture study. The error bars represent 95% confidence intervals. Estimates take a year to determine; thus the population estimate for 2014 was used to set 2015 harvest quotas. The population estimates in this graph reflect the one year time lag (e.g. the 2015 population estimate actually reflects wolf numbers during fall 2014, but was used to set harvest quotas for the 2015 season) (Schumacher 2019, pers. comm.).

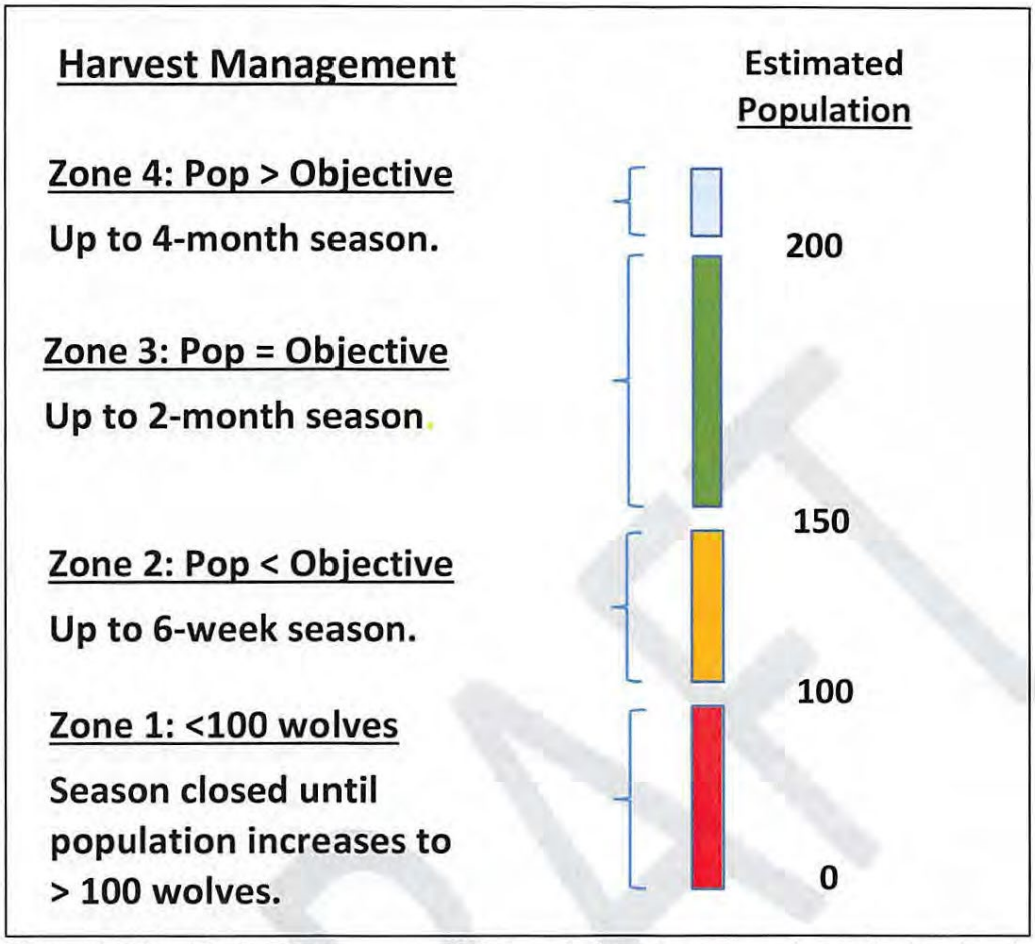


Figure 2. Population thresholds and harvest management strategies for the Unit 2 wolf population. The BOG adopted population objectives of 150-200 wolves in 2019 (figure from ADF&G 2019b).

Cultural Knowledge and Traditional Practices

Wolves were traditionally harvested for furs and hides throughout their range in Southeast Alaska (ADF&G 2008). Historically the fur of this species was used in making ceremonial masks, blankets, robes, and other articles of clothing (ADF&G 2008). The furs and hides were traded between communities and with other regions of the state (De Laguna 1972, Oberg 1973, Petroff 1884).

Wolves also occupy an important symbolic role in both Tlingit and Haida cultures. Tlingit society is divided into two moieties, which include the Raven and Eagle/Wolf (Emmons 1991). Within the moieties, several clans claim wolves as symbols or crests (Swanton 1909). Members of wolf clans ceremonially address wolves as relatives and believe the animals embody their ancestors (ADF&G 2008). These relationships are similar within the Haida culture, although the wolf is claimed by the Raven rather than the Eagle moiety (Blackman 1998).

Traditionally, wolves were harvested in the late fall and early winter because the fur was considered prime during these seasons and there was no deep snow to restrict travel (ADF&G 2008). Trapping usually started in November and continued through December, and was accomplished with snares and deadfalls set across game trails frequented by wolves (ADF&G 2003, ADF&G 2008, De Laguna 1972, Goldschmidt and

Haas n.d. [1946], Goldschmidt and Haas 1998, Oberg 1973). Families built and maintained trapping cabins in remote areas exhibiting high furbearer abundance and placed them in accordance with clan ownership rights (Goldschmidt and Haas 1998). Harvest areas were traditionally owned by clans that were inherited through family lineages (ADF&G 2008). The wolf's mythical and symbolic nature within Tlingit culture resulted in great care and respect being shown to both the living and harvested members of this species (ADF&G 2008). Wolves were not normally eaten, except as a famine food (ADF&G 2008).

Preparation of animal skins was traditionally assigned to women in both Tlingit and Haida cultural groups (Blackman 1998, Emmons 1991). The order of value among available furs within the Tlingit culture was sea otter, marten, beaver, river otter, black fox, mink, wolverine, wolf, and bear (Oberg 1973). Wolves contemporarily retain cultural value, and wolf harvest, sharing, and use have been recently documented in many areas of Southeast Alaska (ADF&G 2008). Wolf fur continues to be used in Native handicrafts such as blankets, ceremonial robes, winter coat ruffs, and art, but are also sold to commercial fur traders (ADF&G 2008).

Though wolves traditionally and contemporarily play important cultural and economic roles within Southeast Alaska, wolves are also now seen as a direct competitor for an important subsistence food source in Unit 2 – deer (Wolf Technical Committee 2017). Wolves also present other considerations for area residents including their role in both consumptive and non-consumptive tourism, as a top predator within the ecological system, and as a potential threat to humans and pets. It is believed that improving forage production within young-growth stands that are near areas preferred for human hunting of deer will help to alleviate some of the human-wolf-deer tensions in Unit 2 (Wolf Technical Committee 2017).

Harvest History

From the 1950s through the mid-1990s, wolf harvest in Unit 2 increased in conjunction with a growing human population and increased road access associated with the logging industry, peaking at 132 wolves in 1996 (**Figure 3**) (Porter 2018). Since 1996, trapper numbers in Unit 2 have generally been declining, possibly due to an aging trapper pool and a human population that is decreasing in response to fewer timber-related jobs (Bethune 2012). Between 1997 and 2018, total trapper numbers in Unit 2 ranged from 4-26 trappers per year, averaging 14.5 trappers per year (Schumacher 2019, pers. comm., Porter 2018). Over the same time period, trappers living in Unit 2 accounted for 60-100% of the annual Unit 2 wolf harvest, averaging 89% (Schumacher 2019, pers. comm., Porter 2018). Most of the non-local resident harvest is by residents of adjacent communities, including Ketchikan, Petersburg, Wrangell, and Sitka (Schumacher 2019, pers. comm.). (Note: As there is no customary and traditional use determination for wolves in Unit 2, all rural residents are Federally qualified subsistence users. Ketchikan and Juneau are the only non-rural communities in Southeast Alaska).

Between 1997 and 2018, average catch per trapper ranged from 1.8-5.5 wolves per trapper, averaging 3.4 wolves per trapper (Schumacher 2019, pers. comm., Porter 2018, Porter 2003). However, in most years, just 2-3 skilled trappers harvest most of the wolves (Schumacher 2019, pers. comm.). Between 1996 and 1998, ADF&G conducted household harvest surveys in all POW communities (ADF&G 2019e). The larger communities of Klawock and Craig accounted for 80% of the POW wolf harvest, and <.05% of the POW population attempts to harvest wolves (ADF&G 2019e).

Unit 2 wolf harvest is primarily monitored through mandatory sealing of pelts (Porter 2018). Harvest primarily occurs on non-Federal lands, including tide lands (ADF&G 2019d, SERAC 2017, Person and Logan 2012). Most wolves are harvested under a combination hunting/trapping license (Schumacher 2019, pers. comm.). The only wolves known to be taken under a hunting license are harvested from Sept. 1-Nov. 14 during the Federal hunting season, but before State and Federal trapping seasons open (Schumacher 2019, pers. comm.). In Unit 2, wolves can be harvested with a firearm under a trapping license under both State and Federal regulations.

Since 1997 when the HGL was initiated (see Regulatory History), annual reported wolf harvest has ranged from 7-96 wolves, averaging 50 wolves (**Figure 3**) (Schumacher 2019, pers. comm.). The annual harvest quota has been exceeded five times (**Table 1**). Most wolves are harvested using traps and relatively few are shot. Between 1997 and 2018, 21%, 53%, and 25% of harvested wolves were shot, trapped, and snared, respectively (Schumacher 2019, pers. comm., Porter 2018, Bethune 2012).

Most of the wolf harvest in Unit 2 occurs in January and February when pelts are most prime and fur prices are highest (Porter 2018). Since 2015, most of the wolf harvest has occurred in December because seasons have closed early by emergency order (ADF&G 2019c). Little harvest occurs before December (Porter 2018, SERAC 2017). Between 1997 and 2014, 60% of wolf harvest occurred in January and February on average (Schumacher 2019, pers. comm., Porter 2018, Bethune 2012). Over the same time period, 3% of wolves were harvested before December on average. Between 2015 and 2018, 32% of wolves were harvested before December on average due to seasons closing early (Schumacher 2019, pers. comm., Porter 2018, Bethune 2012).

Unreported human-caused mortality includes wounding loss, illegal harvest, and vehicle collisions. As part of an ADF&G research program, Person and Russell (2008) estimated unreported human-caused mortality as 47% of total human-caused mortality based on a study of 55 radio-collared wolves in which 16 of 34 human-caused wolf kills were unreported. Most of the unreported kills were either shot out of season or killed during open seasons and not reported (Person and Russell 2008). Later in the research program, ADF&G reported three of eight radio-collared wolves that died during their study were not reported, suggesting 38% of human-caused wolf kills are unreported (USFWS 2015, Schumacher 2019, pers. comm.). Thus, unreported harvest accounts for a substantial portion of wolf harvest in Unit 2, which likely resulted in unsustainable harvests in some years (**Figure 4**) (USFWS 2015, 2016). USFWS (2016) estimated mean total (reported and unreported) annual harvest as 29%, ranging from 11-53%, and concluded that harvest has impacted the Unit 2 wolf population. However, unreported harvests are implicitly accounted for with the new management strategy as management is based on population estimates and objectives rather than on harvest quotas and reported harvests.

USFWS (2015) notes harvest may explain most of the 2013-2014 population decline if unreported harvest is considered. Relatively easy boat and road access may contribute to high rates of unreported harvest in Unit 2, while the insularity of the population makes it more susceptible to overharvest (USFWS 2015). However, as few wolves in Unit 2 are currently radio-collared, documenting unreported human-caused mortality is difficult and accounting for it when setting harvest quotas was a contentious issue (Porter

2018). Additionally, testimony from Federally qualified subsistence users to the Council indicates high levels of illegal harvest is not occurring (SERAC 2017).

In 1999, the wolf season closed early by emergency order for the first time. Afterward, annual reported harvest declined substantially (Person and Logan 2012, Bethune 2012). Similarly, Porter (2003) notes that the number of successful trappers averaged 17 per year from 1999-2001, which was well below the 10-year average of 27 successful trappers per year. Between 2002 and 2014, the number of successful trappers averaged 12 trappers per year (Porter 2018). The threat of early season closures likely discourages hunters and trappers from reporting their harvests, and harvest data after 1999 may be less accurate than harvest data prior to 1999 (Person and Logan 2012). Prior to the public meeting, a wolf trapper from POW mentioned he would wait until the 14th day to seal his wolf pelts in an effort to extend the wolf season.

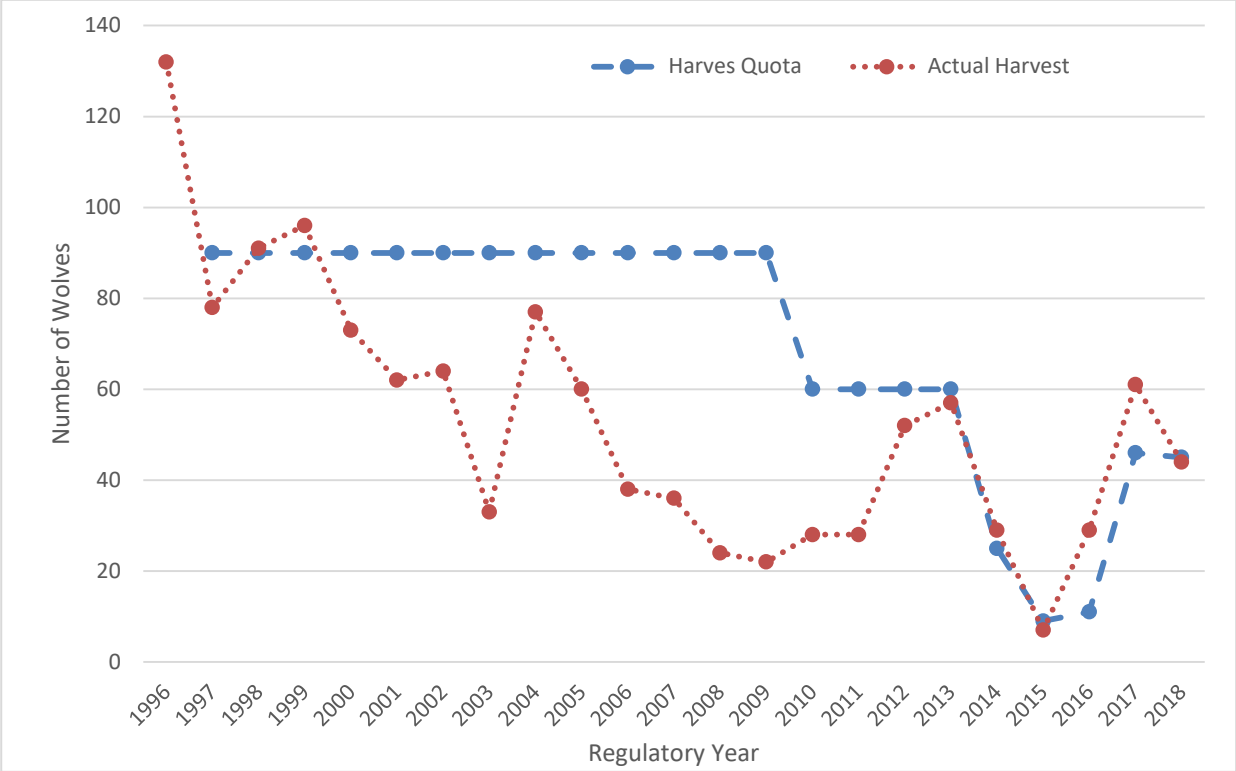


Figure 3. Unit 2 wolf harvest and harvest quotas, 1996-2018. Harvest includes reported harvest and other documented human-caused mortality (e.g. vehicle collisions) (Schumacher 2018, pers. comm., Porter 2018).

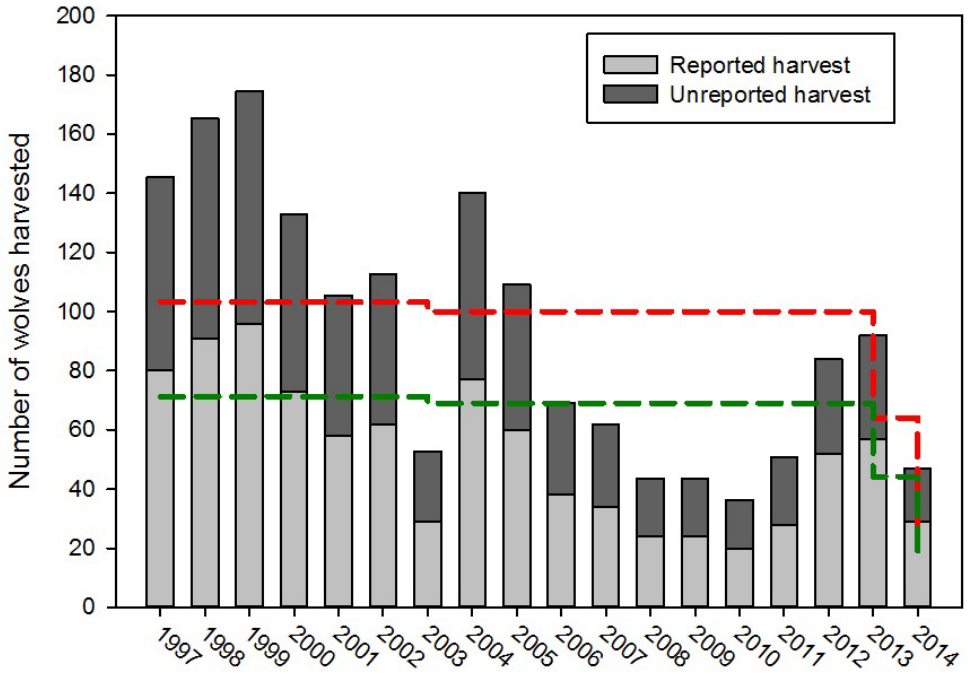


Figure 4. Estimated total number of wolves harvested by regulatory year in Unit 2, 1997-2014. Unreported harvest was estimated using a rate of 0.45 of total harvest from 1997-2011 (Person and Russell 2008) and a proportion of 0.38 of total harvest from 2012-2014 (ADF&G 2015a as cited in USFWS 2015). The green and red dotted line indicates 20% and 30% HGL, respectively (figure from USFWS 2015).

Effects

If this special action request is approved, the sealing requirement will be extended to 30 days after the end of the season, and the combined Federal-State harvest quota will be eliminated. Extending the sealing requirement will align with the new sealing requirement for the State trapping season, but does not align with the State hunting season. Also, subsistence users will be able to seal all of their wolf pelts at once rather than sealing them piece meal throughout the season. Extending the sealing requirement should have no effect on wolf harvest or abundance since the new management strategy depends on population objectives rather than on in-season harvest tracking (ADF&G 2019d).

An issue identified with the HGL management strategy was that it focused only on the percentage of wolves to harvest and not on how many wolves should be in the population. Without population objectives, State and Federal managers had to decide when the population was too low or too high, whereas population objectives determined through a public process such as BOG proposals clarifies goals, providing guidance to managers and building buy-in among stakeholders (SERAC 2019, ADF&G 2019b, 2019d). Specifically, establishing population objectives provides managers with a quantitative benchmark to gauge successful management, helps guide habitat management and regulatory planning, and mitigates disagreements between stakeholders over what is a sustainable wolf population (Wolf Technical Committee 2017, ADF&G 2019d).

Additionally, the HGL management strategy discouraged hunters and trappers from reporting harvest to prevent the season from closing early. Early season closures also created hardships for trappers who could

not plan for when they needed to pull traps. In 2018, the wolf season closed by emergency order on December 18, but was reopened until December 21 due to bad weather that prevented trappers from pulling their traps. Managing for a population objective and announcing season lengths ahead of time provides predictability, allowing trappers to plan and prepare for the season and, importantly, does not discourage reporting harvests (ADF&G 2019d). The new wolf management strategy further alleviates concerns about illegal or unreported harvests by basing management on population estimates and objectives rather than on harvest quotas (SERAC 2019).

While the new management strategy depends on year-old population estimates to determine season lengths, the HGL management strategy depended on year-old population data to announce harvest quotas (since 2014). Although the SECR population estimates may only be produced every 2-4 years at some point in the future, ADF&G may employ other monitoring techniques to assess the Unit 2 wolf population. These techniques include trail cameras to document wolf reproduction and relative abundance, and measuring the foreleg bones of harvested wolves to monitor age structure and recruitment (ADF&G 2019b).

One of the reasons a species can be listed under the ESA is inadequacy of existing regulatory mechanisms. In response to the 2011 ESA listing petition, USFWS (2016) found wolf harvest regulations in Unit 2 to be inadequate to avoid exceeding sustainable harvests (although their inadequacy would not impact the rangewide population). In 2016 and 2017, actual harvest well exceeded the harvest quota, suggesting that the HGL management strategy does not work (SERAC 2017) and reaffirming USFWS' (2016) assessment of inadequate regulations. Even the relatively short sealing requirement resulted in a two week time lag, making it difficult to monitor harvest and to project when quotas would be met (SERAC 2017, 2018). Establishing population objectives through a public process reduces the likelihood of future litigation (Wolf Technical Committee 2017).

The Southeast Regional Supervisor of the Wildlife Division of ADF&G stated at the fall 2017 Council meeting, "Monitoring harvest using sealing records didn't work, so what's a better idea?" (SERAC 2017, p. 189). Council members stated establishing population goals would constitute "something better" (p. 249) and encouraged State and Federal staff to work toward setting population goals for Unit 2 wolves, "so that we're not bouncing around endlessly on is it 20% [or] is it 30%?" (SERAC 2017, p. 442).

While managing harvest through season length may initially result in more or less wolves harvested than expected, State and Federal managers can fine tune season lengths over time once patterns between season length and harvest are better established (SERAC 2019). Past experiences indicate mixed results when using season length as a means for limiting harvest. After the BOG shortened State trapping and hunting seasons in 1997, wolf harvest declined by 12% (Porter 2003). However, since 1997, wolf harvest has varied considerably in years not closed by emergency order (22-96 wolves per year), although State seasons have not changed. Every season since 2013 has been closed by emergency order, and harvest in these years has also varied considerably (7-61 wolves per year). In 2015, seven wolves were harvested during a five week Federal and three week State season. In 2017, 61 wolves were harvested during a 4.5 week Federal and 2.5 week State season (**Table 1**). This suggests harvest is more a function of abundance rather than season length. Additionally, wolves exhibit high resiliency to human harvest and population declines

as evidenced by their population rebound under conservative management since 2014 and high reproductive potential (SERAC 2017, USFWS 2015).

The Federal in-season manager (Craig District Ranger) currently has delegated authority to close, reopen, or adjust the Federal hunting and trapping seasons for wolves in Unit 2. Previously, the Federal in-season manager decided when to close the season based on harvest quotas. If this request is approved, this individual would determine season lengths in cooperation with State managers based on the new harvest management strategy, although maintains the flexibility to close/re-open/adjust Federal seasons at his/her discretion. However, the State will not announce its season length until fall 2019 after the 2018 population estimate is available. While the Federal hunting season opens three months earlier than the State hunting season, the proponent's intent was to maintain the Sept. 1 opening date regardless of the new management strategy to provide subsistence opportunity for wolf harvest while deer hunting.

OSM CONCLUSION

Support Special Action Request WSA19-02.

Justification

Effective wolf management in Unit 2 depends upon coordination between State and Federal regulations, in-season managers, and users. Approving this special action request aligns Federal and State wolf management strategies, facilitating management and reducing user confusion, which is the desired objective of the proponent. Eliminating the combined State-Federal harvest quota under Federal regulations clarifies in-season management as the State no longer uses harvest quotas. Extending the sealing requirement decreases the regulatory burden on Federally qualified subsistence users and aligns Federal hunting and trapping sealing requirements with State trapping requirements, reducing regulatory complexity.

LITERATURE CITED

ADF&G. 2003. Wolf management report of survey and inventory activities 1 July 1999-30 June 2002. C. Healy, ed. Juneau, AK.

ADF&G. 2008. Customary and Traditional Use Worksheet, Wolves, Game Management Units 1, 3, 4, and 5, Southeast Alaska. Special Publication No. BOG 2008-09.

ADF&G. 2019a. Preliminary action taken. Alaska Board of Game. Southeast Region Meeting. January 11-15, 2019. Petersburg, Alaska. http://www.adfg.alaska.gov/static/applications/web/nocache/regulations/regprocess/gameboard/pdfs/2018-2019/se/prelim_soa.pdf40B0F4D9C9C4D5EF233B2BE4E7517895/prelim_soa.pdf. Accessed April 29, 2019.

ADF&G. 2019b. Draft Unit 2 Wolf harvest management strategy. RC011. Alaska Department of Fish and Game. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2018-2019/se/rcs/rc011_ADF&G_Draft_Unit_2_Wolf_management.pdf. Accessed April 30, 2019.

ADF&G. 2019c. Department reports and recommendations. RC4, Tab 6.2. Alaska Department of Fish and Game. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2018-2019/se/rc4_tab6.2_ktn_pow_props.pdf. Accessed May 1, 2019.

ADF&G. 2019d. Meeting audio. Alaska Board of Game. Southeast Region Meeting. January 11-15, 2019. Petersburg, Alaska. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/swf/2018-2019/20190111_janse/index.html?mediaBasePath=/Meeting%2001-14-19%20BOG%20%28Jan-18-19%209-58-54%20AM%29#. Accessed May 2, 2019.

ADF&G. 2019e. Community Subsistence Information System. Alaska Department of Fish and Game. http://www.adfg.alaska.gov/sb/CSIS/. Accessed May 9, 2019.

ADF&G. 2019f. Memorandum from B. Mulligan, Deputy Commissioner to A. Christianson, Chair, Federal Subsistence Board on Wildlife Special Action Request 19-02. May 23, 2019. Alaska Department of Fish and Game. Juneau, AK.

Albert, D.M., and J.W. Schoen. 2007. A conservation assessment for the coastal forests and mountains ecoregion of southeastern Alaska and the Tongass National Forest. Chapter 2 *in* J.W. Schoen, and E. Dovichin, editors. The Coastal Forests and Mountains Ecoregion of Southeastern Alaska and the Tongass National Forest: A Conservation Assessment and Resource Synthesis. https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/alaska/seak/era/cfm/Documents/2_Chapter_2.pdf. Accessed May 6, 2019.

Bethune, S. 2012. Unit 2 wolf management report. Pages 28-38 [*In*] P. Harper, editor. Wolf management report of survey and inventory activities 1 July 2008-30 June 2011, Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2012-4, Juneau.

Ballard, W.B., J.S. Whitman, C.L. Gardner. 1987. Ecology of an exploited wolf population in South-central Alaska. Wildlife Monographs 98. Pp. 3-54. https://www.jstor.org/stable/3830566. Accessed May 6, 2019.

Blackman, M.B. 1998. Haida: Traditional Culture. Pages 240-260 *in* W.C. Sturtevant and W. Suttles, eds. Handbook of North American Indians, Northwest Coast. Smithsonian Institution. Washington, D.C. 777 pp.

Breed, M. 2007. The tale of the dire effects of hunting on wolves in coastal southeast Alaska: loss of genetic diversity, fragmentation, and a regional sink. M.Sc. Thesis. Uppsala University, Norbyvagen, Sweden. 56 pp.

Brinkman, T.J., D.K. Person, F.S. Chapin, W. Smith, K.J. Hundertmark. 2011. Estimating abundance of Sitka black-tailed deer using DNA from fecal pellets. Journal of Wildlife Management 75:232-242. https://www.fs.usda.gov/treesearch/pubs/39610. Accessed May 6, 2019.

Carrol, C.R., J. Fredrickson, and R.C. Lacy. 2014. Developing metapopulation connectivity criteria from genetic and habitat data to recover the endangered Mexican wolf. Conservation Biology 28: 76-86.

De Laguna, F. 1972. Under Mount St. Elias: The history and culture of the Yakutat Tlingit. Smithsonian Contributions to Anthropology Vol. 7. U.S. Government Printing Office. Washington, D.C.

Emmons, G.T. 1991. The Tlingit Indians. Edited with additions by F. de Laguna. The University of Washington Press. Seattle, WA and the American Museum of Natural History, New York, New York.

FSB. 2018. Transcripts of Federal Subsistence Board proceedings. April 12, 2018. Office of Subsistence Management, USFWS. Anchorage, AK.

Fuller, T.K., L.D. Mech, and J.F. Cochrane. 2003. Wolf population dynamics. Pp. 161-191 *in* Mech, L.D. and L. Boitani, editors. Wolves, behavior, ecology, and conservation. University of Chicago Press, Chicago and London.

Goldschmidt, W.R. and T.H. Haas. 1998. *Haa Aani*, Our Land: Tlingit and Haida land rights and use. T.F. Thornton, ed. University of Washington Press, Seattle, WA and Sealaska Heritage Institute, Juneau, AK.

Goldschmidt, W.R. and T.H. Haas. N.d. [1946]. Possessory rights of the natives of southeastern Alaska: a detailed analysis of the early and present territory used and occupied by the natives of southeastern Alaska, except the natives of the village of Kake (partially treated), Hydaburg, and Klawock. A report to the Commissioner of Indian Affairs. Bureau of Indian Affairs. Washington, D.C.

Larsen, D.N. 1994. Units 1A & 2 Wolves. Pp. 1-8. i*n* Hicks, M., editors. Wolf management report of survey-inventory activities 1 July 1999-30 June 2002. Alaska Department of Fish and Game. Juneau, AK.

Oberg, K. 1973. The social economy of the Tlingit Indians. University of Washington Press. Seattle, WA. 144 pp.

OSM. 2003. Staff analysis WP03-10. Proposal database. Office of Subsistence Management, USFWS. Anchorage, AK. https://subsistence.fws.gov/apex/f?p=MENU:101::::. Accessed May 2, 2019.

Person, D.K. and M.A. Ingle. 1995. Ecology of the Alexander Archipelago wolf and responses to habitat change. Unpubl. Prog. Rep. 3. Alaska Department of Fish and Game. Douglas, AK. http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/95_wo_hab_eco_person_ingle.pdf. Accessed May 6, 2019.

Person, D.K., M. Kirchhoff, V. Van Ballenberghe, G.C. Iverson, and E. Grossman. 1996. The Alexander Archipelago wolf: A conservation assessment. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-384, Portland, Oregon.

Person, D.K., B.D. Logan. 2012. A spatial analysis of wolf harvest and harvest risk on Prince of Wales and associated islands, Southeast Alaska. Final wildlife research report, ADF&G/DWC/WRR-2012-06. Alaska Department of Fish and Game, Juneau, AK. USA.

Person, D.K., A.L. Russell. 2008. Correlates of mortality in an exploited wolf population. Journal of Wildlife Management. 72(7). 1540-1549.

Person, D.K., A.L. Russell. 2009. Reproduction and den site selection by wolves in a disturbed landscape. Northwest Science 83:211-224.

Petroff, I. 1884. Report on the population, industries, and resources of Alaska. Government Printing Office. Washington, D.C. 189 pp.

Porter, B. 2003. Unit 2 wolf management report. Pages 28-38 *in* C. Healy, editor. Wolf management report of survey and inventory activities 1 July 1999-30 June 2002. Alaska Department of Fish and Game. Juneau, Alaska.

Porter, B. 2018. Wolf management report and plan, Game Management Unit 2: Report period 1 July 2010-30 June 2015, and plan period 1 July 2015-30 June 2020. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2018-10, Juneau.

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, AK. 58 pp.

Schumacher, T. 2019. Southeast Regional Supervisor. Personal communication: e-mail. ADF&G, Division of Wildlife Conservation. Douglas, AK.

SERAC. 2017. Transcripts of the Southeast Alaska Regional Advisory Council proceedings. November 1, 2017. Office of Subsistence Management, USFWS. Anchorage, AK.

SERAC. 2018. Transcripts of the Southeast Alaska Regional Advisory Council proceedings. February 13-14, 2018. Office of Subsistence Management, USFWS. Anchorage, AK.

SERAC. 2019. Transcripts of the Southeast Alaska Regional Advisory Council proceedings. March 19, 2019. Office of Subsistence Management, USFWS. Anchorage, AK.

Swanton, J.R. 1909. Tlingit myths and texts. Government Printing Office. Washington, D.C. 460 pp.

Toppenberg, J., G. Scott, R. Noblin, D. Beebe, L. Edwards, J. Hanson. 2015. Petition to List on an Emergency Basis the Alexander Archipelago Wolf (Canis Lupus Ligoni) as Threatened or Endangered Under the Endangered Species Act. Center for Biological Diversity. https://www.biologicaldiversity.org/species/mammals/Alexander_Archipelago_wolf/pdfs/Emergency_ESA_petition_for_AA_wolf__14Sep15.pdf. Accessed April 29, 2019.

USFWS. 2015. Species status assessment for the Alexander Archipelago wolf (*Canis lupus ligoni*). Version 1.0., December 2015. Alaska Region. U.S. Fish and Wildlife Service. Anchorage, Alaska. 162 pp.

Weaver, J.L., P.C. Paquet, and L.F. Ruggiero. 1996. Resilience and conservation of large carnivores in the Rocky Mountains. Conservation Biology 10:964-976.

Wolf Technical Committee. 2017. Interagency wolf habitat management program: Recommendations for Game Management Unit 2. Management Bulletin R10-MB-822. USDA Forest Service, USDI Fish and Wildlife Service, and Alaska Department of Fish and Game.

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MEMORANDUM

TO:	Anthony Christensen, Chair, Federal Subsistence Board	DATE:	May 23, 2019
		PHONE:	267-2190
FROM	Ben Mulligan BSM Deputy Commissioner	SUBJECT:	Wildlife Special Action Request 19-02

The Alaska Department of Fish and Game (ADF&G) submits the following comments on Federal Subsistence Wildlife Special Action Request 19-02 (WSA19-02). WSA19-02 was submitted by the Southeast Alaska Subsistence Regional Advisory Council and proposes to align federal subsistence hunting and trapping regulations for wolves in Game Management Unit 2 (Unit 2) with changes made by the Alaska Board of Game (Board) to State of Alaska hunting and trapping regulations at the Board's January 2019 meeting.

WSA 19-02 would:

1) Increase the annual bag limit for wolves taken under a hunting license in Unit 2 from 5 to unlimited,

2) Eliminate the reference to the hunting and trapping seasons in Unit 2 being closed when the combined Federal-State harvest quota is reached,

3) Change the sealing requirement for wolves taken under a hunting license in Unit 2 from within 14 days of harvest to within 30 days of the end of the season, and

4) Change the sealing requirement for wolves taken under a trapping license in Unit 2 from within 14 days of harvest to within 30 days of the end of the season.

Background:

In January 2019 the Board adopted changes to state wolf harvest regulations in Game Management Unit 2 (Unit 2). Those changes implemented ADF&G's proposal to change the Unit 2 wolf harvest management strategy from one based on a harvest guideline level to one based on a population objective. That change in management strategy required the following changes to state hunting and trapping regulations; eliminating references to the harvest guideline level, establishing a fall population objective of 150-200 wolves, and amending the sealing requirement for wolves taken under hunting or trapping licenses from within 14 days of harvest to within 30 days of the end of the season. Under a separate proposal the Board changed the opening date for the state wolf trapping season in Unit 2 from December 1 to November 15, which aligns with the current opening date under federal subsistence regulations. Those regulatory changes will take effect July 1, 2019.

One difference between state regulations that will take effect in July 2019 and the proposed changes to federal regulations is the change in federal bag limit for wolves taken under a hunting license from 5 wolves per year to unlimited. State hunting regulations for wolves in Unit 2 provides for a 5-wolf bag limit. In most years few wolves are taken during the federal hunting season prior to the opening of trapping season. Over the last ten years more than 90% of wolves taken in Unit 2 were taken under combination (hunting & trapping) or trapping licenses. Because wolves may be taken under a trapping license with a firearm and because the state and federal in-season manager will simultaneously close state and federal hunting and trapping seasons, we believe this change will have little effect on harvest.

WSA 19-02 seeks to align federal regulations with recent changes to state regulations prior to the opening of the fall 2019 Unit 2 wolf hunting and trapping seasons. ADF&G supports these changes because they will help implement the new harvest management strategy, eliminate regulatory conflicts, and reduce confusion among users.

Thank you for considering our comments.

cc: Eddie Grasser, Director, ADF&G, Division of Wildlife Conservation
Lisa Olson, Assistant Director, ADF&G, Subsistence
Cheryl Brooking, Assistant Attorney General, Department of Law
George Pappas, State Liaison, Office of Subsistence Management

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee recommendation is to **Support** Temporary Special Action Request WSA19-02.

Justification

Past management of wolves in Unit 2 focused on harvest through the setting of harvest quotas based on a population estimate and not on how many wolves should remain in the population. This strategy had varying degrees of success.

In January of 2019, The Alaska Board of Game removed regulatory language regarding the percentage of wolves to be harvested in Unit 2 and replaced the quota management system with a strategy that maintains a population objective of 150-200 wolves via setting annual season lengths. This new strategy, was which was developed by the Alaska Department of Fish and Game, U.S. Forest Service, Southeast Alaska Subsistence Regional Advisory Council and local users, was designed to ensure a sustainable population and encourage better harvest reporting.

Adoption of this request will not align State and Federal hunting season dates or sealing requirements; however, the trapping season dates and sealing requirement would be aligned. The vast majority of wolves are taken by Federally qualified users during trapping season.

The Federal in-season manager (Craig District Ranger) currently has delegated authority to close, reopen, or adjust the Federal hunting and trapping seasons for wolves in Unit 2. If this request is approved, the in-season manager would determine season lengths annually in cooperation with State managers based on population estimates. Early closures of seasons would likely not happen as harvest reports would not be known until post season.

Wolf populations in Unit 2 are primarily influenced by harvest. The success of this new management strategy will depend upon coordination of State and Federal management, regular communication between State and Federal managers, active involvement of user groups, accurate harvest reporting, and regular monitoring of wolf populations.

Managing for a population objective and announcing pre-determined season lengths ahead of time provides predictability, which allows trappers to plan and prepare for the season and may improve harvest reporting. While managing harvest through season length may initially result in more or less wolves harvested than expected, State and Federal managers can fine tune season lengths over time once relationships between season length, harvest and population estimates are better established. Shifting the strategy of managing by harvest quotas to predetermined season lengths based on a population objective makes the requirement for in-season sealing unnecessary.

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