WP26–46 Executive Summary	
General Description	Wildlife Proposal WP26-46 requests to increase the harvest limit for ptarmigan in Unit 18 from 15 ptarmigan per day, 30 in possession to 25 ptarmigan per day, 50 in possession. *Submitted by: Yukon Delta National Wildlife Refuge*
Proposed Regulation	**Unit 18—Ptarmigan (Rock and Willow)** *~~15~~ **25** ptarmigan per day, ~~30~~ **50** in possession* *Aug. 10—May 30*
OSM Preliminary Conclusion	**Support**
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

Draft Wildlife Analysis
WP26-46

ISSUE

Proposal WP26-46, submitted by the Yukon Delta National Wildlife Refuge (NWR) requests to increase the harvest limit for ptarmigan in Unit 18 from 15 ptarmigan per day, 30 in possession to 25 ptarmigan per day, 50 in possession.

Proponent Statement

The proponent states that the Alaska Board of Game (BOG) increased the harvest limit for ptarmigan in Unit 18 during their last regulatory cycle. This proposal would align State and Federal harvest limits.

Current Federal Regulations

Unit 18—Ptarmigan (Rock and Willow)

15 ptarmigan per day, 30 in possession	*Aug. 10—May 30*

Proposed Federal Regulations

Unit 18—Ptarmigan (Rock and Willow)

*~~15~~ **25** ptarmigan per day, ~~30~~ **50** in possession*	*Aug. 10—May 30*

Current State Regulations

Unit 18−Ptarmigan

Residents and Nonresidents:	*25 per day, 50 in possession*	*Aug. 10 – May 15*

Extent of Federal Public Lands

Unit 18 is comprised of approximately 68% Federal public lands that consist of 65% U.S. Fish and Wildlife Service (USFWS) and 3% Bureau of Land Management (BLM) managed lands.

Customary and Traditional Use Determination

The Board has not made a customary and traditional use determination for ptarmigan in Unit 18. Therefore, all rural residents have a customary and traditional use determination for ptarmigan in Unit 18.

Regulatory History

In 1990, Federal subsistence regulations for ptarmigan in Unit 18 were adopted from State regulations when the Federal subsistence management program began. Harvest limits were 20 ptarmigan per day, 40 in possession with a season from Aug. 10–Apr. 30.

In 1993, the Board adopted Proposal P93-47, extending the ptarmigan season in Unit 18 from Aug. 10–Apr. 30 to Aug. 10–May 30 to allow federally qualified subsistence users more harvest opportunity in the spring.

In 2012, the Yukon Delta NWR submitted Proposal WP12-51 to extend the season and increase the harvest limit for ptarmigan in Unit 18. The proponent stated that ptarmigan in Unit 18 are locally migratory and migrate from the interior westward and that the existing season closed before migrating ptarmigan reached coastal areas, therefore limiting federally qualified subsistence users from harvesting this resource. They also stated that daily harvest and possession limits restricted federally qualified subsistence users' ability to harvest as many ptarmigan as they needed. Due to limited data on the ptarmigan population in Unit 18, the Board adopted Proposal WP12-51 with modification to maintain the harvest season already in place and to increase the harvest limit to 50 ptarmigan per day and 100 in possession.

A similar proposal was adopted with modification at the November 2011 BOG meeting. Proposal 20 requested a harvest limit increase from 20 ptarmigan daily/40 in possession to 50 ptarmigan daily/100 in possession and a season extension from Aug. 10–Apr. 30 to Aug. 10–Jun. 15. The BOG adopted Proposal 20 as amended to include the 50 ptarmigan daily/100 in possession limit, but reduced the season extension to May 15 due to concerns about harvesting during the breeding season.

In 2018, Proposal WP18-30 was submitted to the Board to decrease the harvest limit and shorten the season for ptarmigan in Unit 18. The proponent stated that subsistence users were having to travel longer distances and seeing smaller flocks of ptarmigan. The Board adopted Proposal WP18-30 with modification to maintain the harvest season, while decreasing the harvest limit to 15 per day and 30 in possession. Federal regulations for ptarmigan in Unit 18 have not changed since.

In 2020, the BOG adopted Proposal 14, decreasing the harvest limit for ptarmigan in Unit 18 to 15 per day, 30 in possession, aligning State and Federal harvest limits (ADF&G 2020).

In 2024, the BOG adopted Proposal 13 as amended to increase the ptarmigan harvest limit to 25 per day and 50 in possession. Based on observations, the ptarmigan population appeared to have increased since the lows in 2014 and could support additional harvest without conservation concerns (ADF&G 2025a).

Biological Background

Ptarmigan abundance may fluctuate along with snowshoe hare populations, as predators use alternative food sources when hare abundance is low (Hannon et al. 1998). Similarly, specialist predator populations, such as gyrfalcons, show slight delayed population fluctuations relative to the ptarmigan abundance cycle and often accelerate the decline in ptarmigan populations during the low phase of the ptarmigan cycle (Nielson 1999). Ptarmigan experience a complete population cycle over approximately a ten year period, similar to snowshoe hares (Nielson 1999).

Willow Ptarmigan

Willow ptarmigan are the primary ptarmigan species occurring in Unit 18. There are no current population surveys being conducted for willow ptarmigan in Unit 18, although numbers throughout Southwestern Alaska appear to be rebounding according to field staff reports (Carroll and Spivey 2024). Alaska Department of Fish and Game (ADF&G) staff observations near Bethel and Dillingham show that ptarmigan populations in this area may be recovering from the low in 2014 (ADF&G 2025a). In May 2022, ADF&G staff observed abundant willow ptarmigan throughout the Yukon-Kuskokwim Delta, suggesting abundance is rebounding from the previous 5-7 year low (Merizon and Carroll 2023). The decline is thought to be partially caused by warmer weather in the area and little or no snow during the 2014 and 2015 winters, which failed to camouflage these birds (ADF&G 2025a). This lack of snow may have had a larger impact on flock size and movements than harvest (ADF&G 2025a).

Willow ptarmigan are well adapted to live in treeless arctic areas that contain open shrub habitats in summer months and willow/shrub thickets with few scattered trees during the winter season (Weeden 1965). In Alaska, male and female willow ptarmigan are often segregated in separate areas during the winter season (Weeden 1965); a behavior that is also observed in Norwegian willow ptarmigan (Pederson et al. 1983). Breeding territories are located in transitional shrub habitat in or near stands of willows and occur in most subalpine and alpine habitats across the state (Carroll and Merizon 2017).

Willow ptarmigan are locally migratory, overwintering in the interior of Unit 18 and breeding closer to the coast. Males are sometimes observed on breeding grounds beginning in April, where they establish breeding territories (Carroll and Merizon 2017, Weeden 1965). Breeding ptarmigan typically do not fully arrive to the coastal areas in Unit 18 until May (Carroll and Merizon 2017, Jones 2017, pers. comm., Weeden 1965).

Willow ptarmigan migration often follows the snow line as it melts from the interior out toward the coastline (Jones 2017, pers. comm.). Ptarmigan typically have white feathers during the winter season and brown coloration in the summer months. This change in color allows the ptarmigan to blend with their surroundings in any season even when congregating in large flocks. By following the snowline, ptarmigan are better able to maintain camouflage through the spring molt. In nine of the last 12 years, snow cover has been minimal in Unit 18 which has led to ptarmigan mismatching their surroundings during winter months and has made these populations more susceptible to predation (ADF&G 2025a). Behavioral changes have been observed in conjunction with the lack of snow; ptarmigan are more spread out on the landscape, congregate in much smaller flocks, and migrate through areas at a quicker rate (Jones 2017, pers. comm.).

The diet of willow ptarmigan is highly specialized, with up to 94% of their diet consisting of the buds and twigs of willows in the winter months (Weeden 1965, West and Meng 1966). In summer months the average ptarmigan diet becomes more varied as herbaceous vegetation availability increases (Weeden 1965, West and Meng 1966). Availability of food resources is primarily based on the height of plants and the level of snow cover (West and Meng 1966). Ptarmigan often feed during daylight hours and were found to fill their crop during the minimal daylight in winter and digest when it was dark, whereas in the summer they were found to feed at more regular intervals without needing to fill their crops (West and Meng 1966).

Rock Ptarmigan

Regulations do not differentiate between willow ptarmigan and rock ptarmigan harvest. Rock ptarmigan are the second most abundant ptarmigan species in Alaska and can be found throughout the state (Carroll and Merizon 2017). Declines in rock ptarmigan numbers in interior regions of Alaska led to increased monitoring of populations in interior and southern units (Carroll and Merizon 2017). While no recent surveys of rock ptarmigan have been conducted in Unit 18, populations throughout Southwestern Alaska appear to be rebounding with several locations throughout the Yukon-Kuskokwim Delta observing more ptarmigan than in the recent past (Carroll and Spivey 2024). In May 2022, ADF&G staff observed abundant rock ptarmigan throughout the Yukon-Kuskokwim Delta, suggesting they have rebounded from the previous 5-7 year low (Merizon and Carroll 2023).

Rock ptarmigan typically inhabit more exposed slopes and higher elevation ridges with abundant dwarf birch (Carroll and Merizon 2017, Weeden 1965). Male breeding territories occur above tree-line and tend to have a higher proportion of open habitat area with little shrub cover (Weeden 1964, 1965) as compared to willow ptarmigan. Similar to willow ptarmigan, male and female rock ptarmigan often separate into different flocks and/or habitat types in the winter, often wintering just below tree-line (Weeden 1964, 1965). Although rock ptarmigan are not typically as migratory as willow ptarmigan, they have been observed migrating 10-50 miles from breeding sites to over-wintering sites in portions of interior Alaska (Weeden 1965).

Similar to willow ptarmigan, male rock ptarmigan begin defending breeding territories in April (Carroll and Merizon 2017). Currently, there are no population estimates for rock ptarmigan in Unit

18, but staff observations suggest that numbers appear to be quite low near Bethel and Dillingham (Carroll and Merizon 2017).

The diet of rock ptarmigan often consists of dwarf birch and willow buds in winter months, but becomes more varied in summer months as they begin to consume new growth vegetation, insects, berries, and seeds (Weeden 1965).

Cultural Knowledge and Traditional Practices

Subsistence users residing in Unit 18 distinguish between the two species of ptarmigan found in the unit: willow ptarmigan *aqesgiq* (Yukon delta), *qangqiiq* (coastal and lower Kuskokwim areas), and rock ptarmigan *ellciayuli* (Andrews 1989, Andrews and Peterson 1983, Pete 1986). Residents of inland communities, such as Russian Mission, Kwethluk, Akiachak, and Tuluksak, harvest both species throughout winter (Andrews and Peterson 1983, Coffing 1991, Coffing et al. 2001, Pete 1986). For residents of coastal communities, such as Kwigillingok, Hooper Bay, Nunam Iqua, Scammon Bay, and Alakanuk, willow ptarmigan are scarce near the villages for most of the winter (Stickney 1983, Fienup-Riodan 1986). Then in late winter or spring, willow ptarmigan flock up and large numbers return to coastal areas to forage in newly-exposed tundra. The timing of return is variable depending on snow cover and weather and is expected any time in late winter or spring.

During household harvest surveys conducted in ten Unit 18 communities in the 1980s and 1990s, at least 48% of households in each community reported harvesting ptarmigan during a 12-month study period (ADF&G 2011). The range was from a low of 48% in Kwethluk in 1986 to a high of 93%in Kotlik in 1980. Estimated harvests ranged from a high of 5,450 ptarmigan in Akiachak in 1998 to a low of 578 ptarmigan in Nunam Iqua (formally Sheldon's Point) in 1980 (**Table 1**). Snow cover that lasts later in the spring is more conducive for users to travel, and more ptarmigan are likely harvested under these conditions (OSM 2012). Ptarmigan are often harvested opportunistically as they are encountered in Unit 18 (OSM 2012), so higher harvest levels may be associated with higher ptarmigan abundance or more suitable travel conditions.

Harvest seasons and methods for ptarmigan in Unit 18 are variable and based on the location of individual villages. For example, coastal areas such as the area between Kwigillingok and Hooper Bay have sparse willow patches and ptarmigan migrate inland in winter to take advantage of more abundant food in large clusters of willow trees. Inland and along rivers, ptarmigan may be abundant during winter months. Coastal areas experience an influx of flocks of ptarmigan in spring as ptarmigan migrate to the coast to forage in newly-exposed tundra (Stickney 1983).

Once seasonally nomadic, by about 1950 most people were living in permanent communities while visiting seasonal camps (Andrews 1989). Shotguns and .22-caliber rifles had become more common and the majority of ptarmigan are now harvested with these methods (Andrews 1989, Stickney 1983). Some people continue to snare ptarmigan (Wolfe and Ellana1983). In the 1980s, based on research mentioned above, ptarmigan were sometimes preserved in freezers, but many continued to dry ptarmigan for later consumption (Coffing et al. 2001, Stickney 1983).

Before 1930, .22-caliber rifles were not in common use in the Yukon Kuskokwim Delta area (Andrews 1989). Residents herded molting, flightless migratory waterfowl and took them with specially-designed, pronged spears (Andrews 1989). Upland birds, such as ptarmigan, were harvested with snares, bow and arrow, and spears (Andrew 1989). Snares were set by older women and boys and girls (Fienup-Riordan 1989, Oswalt 1990, Pete 1986). For the majority of villages, ptarmigan figured prominently in the spring as food stores were running low and animals such as ptarmigan and hares became available in large numbers (Fienup-Riordan 1986, Stickney 1983). Of the smaller wildlife, ptarmigan were most likely to be dried (Coffing et al. 2001, Pete 1986). Ptarmigan were eaten fresh in soups or dried for later consumption (Stickney 1983). The birds were skinned and the breasts and wings removed and hung outside on horizontal poles where the meat dried. Once dried, the meat was eaten without further preparation and was a favorite food at summer fish camps (Coffing et al. 2001, Fienup-Riordan 1986).

Table 1. The use and harvest of ptarmigan based on household surveys, Unit 18 communities (ADF&G 2011 and 2025b).

		Percentage of Households Ptarmigan Harvest								
Community	**Study Year**	**Using Ptarm (%)**	**Hunting Ptarm (%)**	**Harvesting Ptarm (%)**	**Giving Ptarm (%)**	**Receiving Ptarm (%)**	**Reported (Number)**	**Expanded to House-holds Not Surveyed (Number)**	**Lower Estimate (Number)**	**Higher Estimate (Number)**
Akiachak	1998	93	84	84	54	35	3741	5450	4825	6074
Alakanuk	1980			81			1078	4620		
Emmonak	1980			56			194	1078		
	2008	64	58	55	30	24	1737	2778	2539	3218
Kotlik	1980			93			384	1536		
Kwethluk	1986		55	48	35	25		3712		
	2010	25	23	21	10	6	480	809	542	1075
Mountain Vil-lage	1980			81			451	2706		
	2010	52	40	40	27	22	1034	1671	1215	2126
Nunam Iqua	1980			86			176	578		
Nunapitchuk	1983			88			770	3171	1827	4515
Quinhagak	1982			58			226	1846	568	3124
	2013	71	54	52	23	24	2449	3673	3669	3677
Tununak	1986	97	82	82	30	33	994	1928	1434	2422

Harvest History

Current harvest estimates for ptarmigan in Unit 18 have limited utility for assessing impacts of management decisions such as season lengths or harvest limits. Harvest estimates from the Alaska Migratory Bird Subsistence Harvest Estimates household survey may have high levels of variation because of (1) annual changes in ptarmigan abundance, (2) hunter access (e.g., snow conditions), (3) annual variation in hunting effort due to the availability of other resources (e.g., salmon, caribou), (4) inadequate sampling coverage (e.g., variable household/village participation, bias toward "high" or active hunting households, political climate influence, unknown under or over reporting), (5) variability of survey methodology over the years, and (6) heterogeneity of harvest patterns within villages (Naves 2009, 2015a, 2016; Wentworth 2007). In addition, the harvest seasons defined in the survey were designed for migratory birds and do not align with the current Federal ptarmigan season in Unit 18 (Aug. 10 – May 30).

The Yukon-Kuskokwim Delta Region is split into seven subregions for the purpose of the Alaska Migratory Bird Subsistence Harvest surveys, of which six are located primarily within Unit 18 (**Figure 1**; Naves 2016, Wentworth 2007). Bethel is considered its own subregion and therefore this village is surveyed whenever the subregion is surveyed unlike specific villages in other subregions (Naves 2015b, 2016; Wentworth 2007). Harvest is highly variable across years within each subregion (**Table 3**; Naves 2015a, 2016). In 2013, the most harvest was reported overall since 2004, although only the Y-K Delta South Coast, Y-K Delta North Coast, and Lower Kuskokwim showed harvest values greater than other years during this timeframe (Naves 2015a, b, 2016).

The number of ptarmigan harvested in Unit 18 each year is variable, but the majority of the harvest takes place in the spring (Wentworth 2007). Harvest estimates, based on household surveys conducted for the purposes of monitoring migratory bird subsistence harvests, between 1986 and 2001, averaged 15,901 (range 8,923 to 30,685) ptarmigan in Unit 18, and 90% of the harvest took place between April 8 and May 20 (Wentworth 2007).

In 2015 and 2016, hunter effort and harvest was low due to the decline in the population and changes in behavior of willow ptarmigan in Unit 18 (Jones 2017, pers. comm.). From 2002 to 2015, harvest estimates averaged 12,298 (range 4,667-33,882), with 92% of the harvest occurring between April 1 and June 30 (**Table 2**; Naves 2014, 2015a, b, 2016; OSM 2012). The highest reported harvest was in 2013 (33,882), no data was collected in 2014, and reported ptarmigan harvest was low again in 2015 (9,928).

Sandercock et al. (2011) found that in Norway, harvest levels of willow ptarmigan above 15% could be additive to natural mortality rather than compensatory and that a harvest above 30% of the post breeding population could be "superadditive" (harvest could cause additional natural mortality). It is important to consider these findings when determining harvest limits for willow ptarmigan. Due to the current population of willow ptarmigan being unknown, limited utility of harvest estimates, and reported harvest not distinguishing between species of ptarmigan, it is difficult to understand how ptarmigan harvest impacts the overall population in Unit 18.

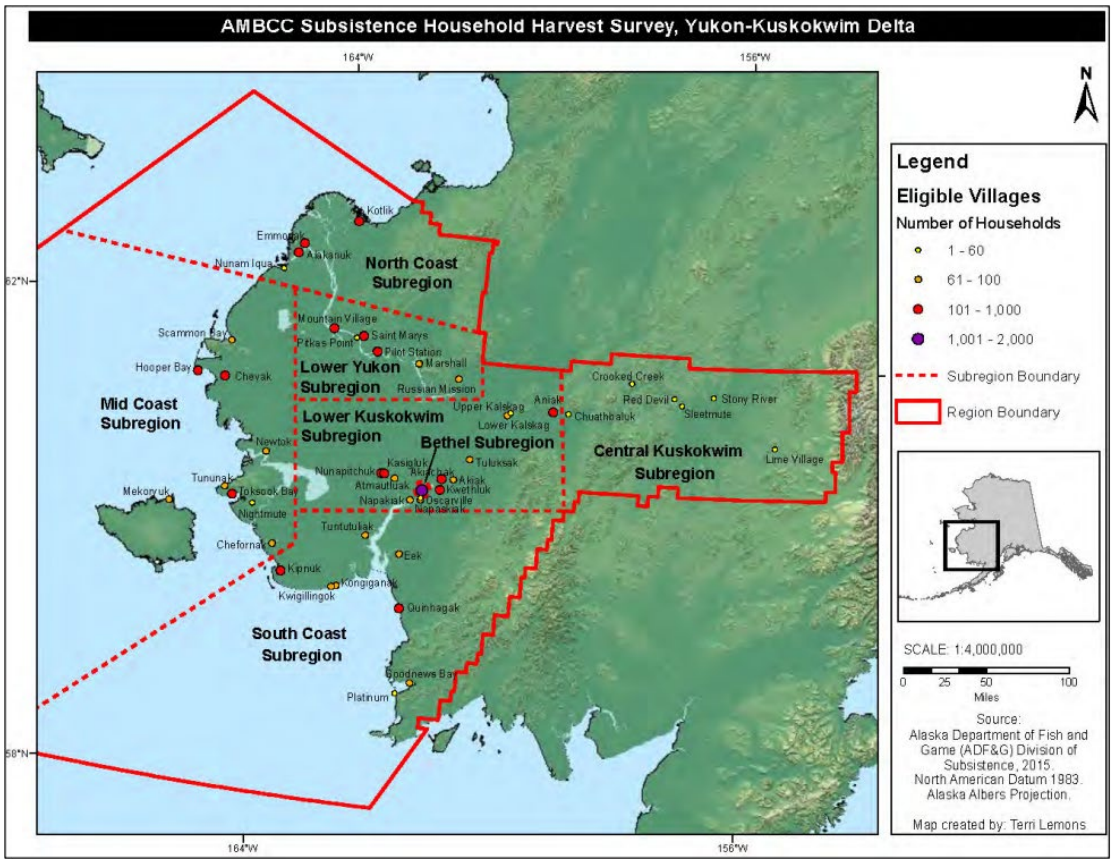

Figure 1. Subregions within the Yukon-Kuskokwim Delta Region for subsistence bird harvest surveys (Figure from Naves 2016).

Table 2. Ptarmigan harvest by season in the Yukon- Kuskokwim Delta Region from 2002-2015 (Naves 2012, 2014, 2015a, b, 2016; Wentworth 2007).

Year	Spring	Summer	Fall	Total
2002	18,756	159	108	19,023
2003	-	-	-	-
2004	9,750	46	2,111	11,907
2005	16,162	110	611	16,883
2006	17,780	1,538	1,115	20,433
2007	5,291	104	N/A	5,395
2008	4,355	120	192	4,667
2009	20,033	1,474	1,440	22,947
2010	13,302	248	282	13,832
2011	10,946	843	1,483	13,272
2012	-	-	-	-
2013	32,725	93	1,064	33,882
2014	-	-	-	-
2015	9,201	38	689	9,928

Table 3. Ptarmigan harvest by year in each subregion of the Yukon-Kuskokwim Delta Region located within in Unit 18 according to Alaska Migratory Bird Subsistence Harvest surveys (Naves 2015a, b, 2016).

Year	Y-K Delta South Coast	Y-K Delta Mid Coast	Y-K Delta North coast	Lower Yukon	Lower Kuskokwim	Bethel
2004	2362	2402	164	519	5212	0
2005	2857	3343	717	129	1656	6010
2006	3149	9351	323	41	7080	489
2007	142	2218	0	0	2787	49*
2008	1463	1099	0	0	997	1006
2009	1730	12110	369	196	6798	1242
2010	3516	5697	727	110	3556	150
2011	3146	3637	-	-	3469	198
2012	-	-	-	-	-	-
2013	10218	9860	1892	456	11455	-
2014	-	-	-	-	-	-
2015	2637	3401	761	884	850	1159

Discussion and Effects

This proposal would provide additional opportunity for federally qualified subsistence users to harvest ptarmigan in Unit 18 under Federal regulations. As anyone may already harvest 25 ptarmigan/day with 50 in possession on Federal public lands in Unit 18 under State regulations, no impacts to the ptarmigan population are expected from this proposal. Additionally, ptarmigan abundance is likely more affected by weather and snow cover than by harvest.

Adopting this proposal would also reduce regulatory complexity by aligning State and Federal harvest limits as directed by Executive Order 14153 3(b)(xxii) to "ensure to the greatest extent possible that hunting and fishing opportunities on Federal lands are consistent with similar opportunities on State lands."

OSM PRELIMINARY CONCLUSION

Support Proposal WP26-46.

Justification

This proposal increases opportunity for federally qualified subsistence users, and there are currently no conservation concerns for ptarmigan in Unit 18.

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