2018 - JCR Evaluation Form

SPECIES: Moose
HERD: MO105 - SUBLETTE
HUNT AREAS: 3-5, 10, 20-25

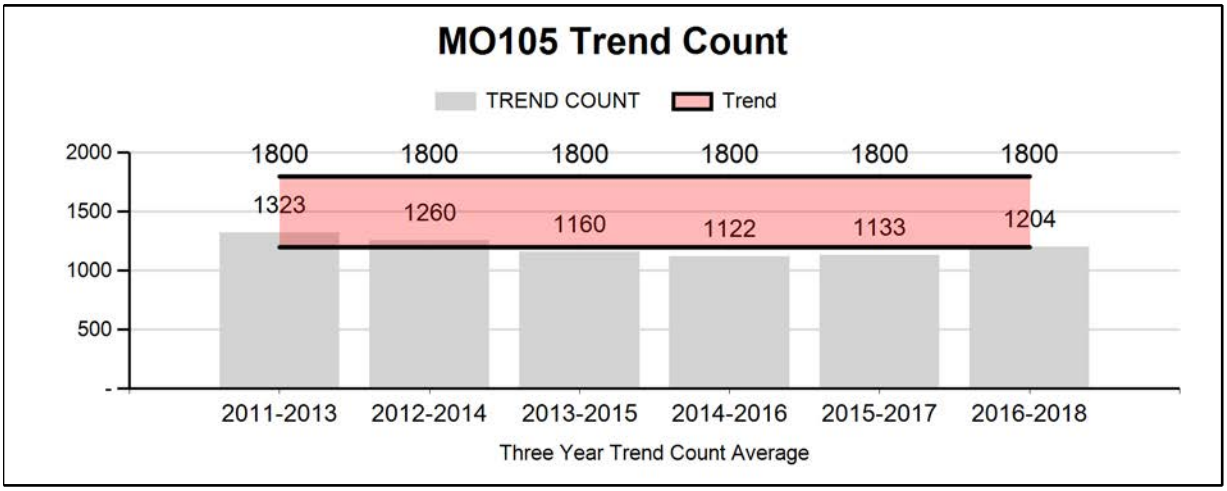
PERIOD: 6/1/2018 - 5/31/2019
PREPARED BY: DEAN CLAUSE

	2013 - 2017 Average	2018	2019 Proposed
Trend Count:	1,176	1,210	1,300
Harvest:	192	136	140
Hunters:	212	155	155
Hunter Success:	91%	88%	90%
Active Licenses:	212	155	155
Active License Success	91%	88%	90%
Recreation Days:	1,707	1,067	1,070
Days Per Animal:	8.9	7.8	7.6
Males per 100 Females:	69	73	
Juveniles per 100 Females	41	52	

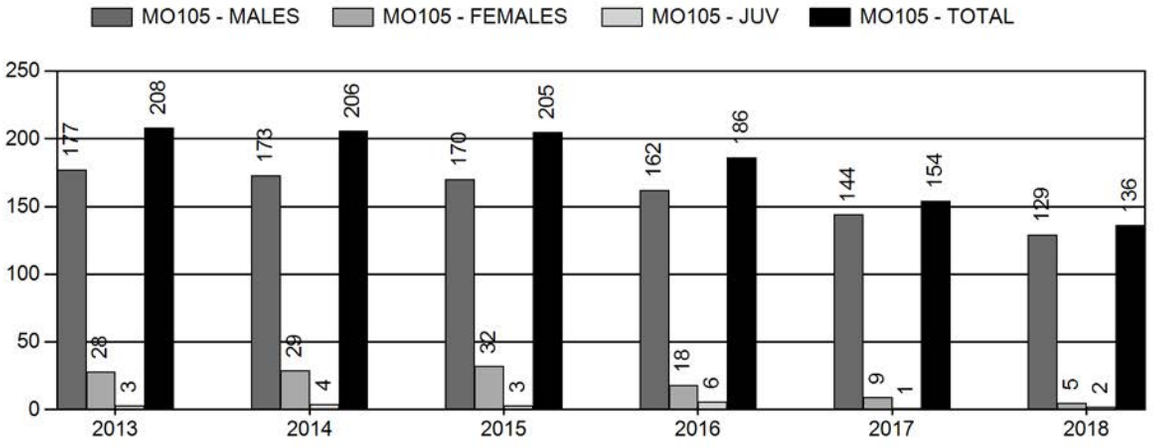
Trend Based Objective (± 20%)	1,500 (1200 - 1800)
Management Strategy:	Special
Percent population is above (+) or (-) objective:	-19.3%
Number of years population has been + or - objective in recent trend:	2

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

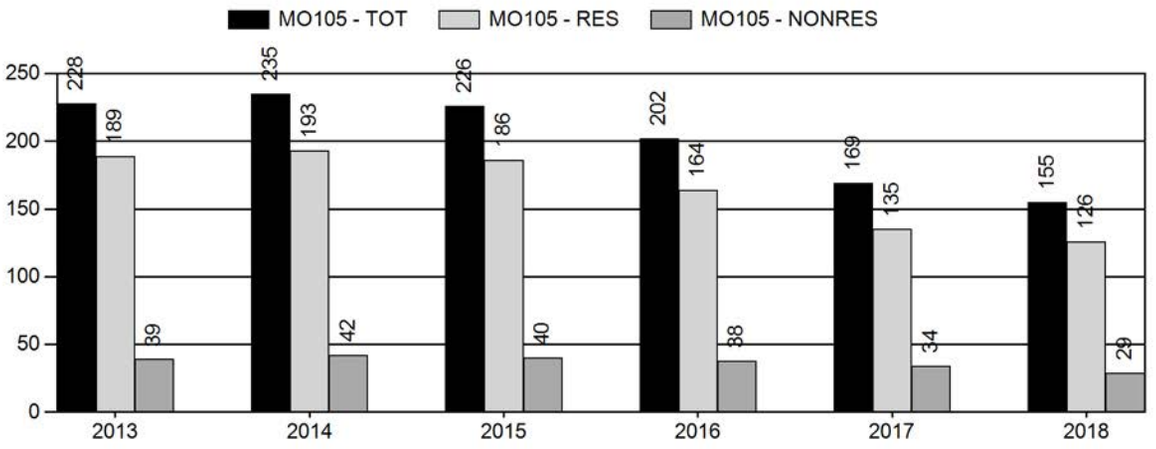
	JCR Year	Proposed
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



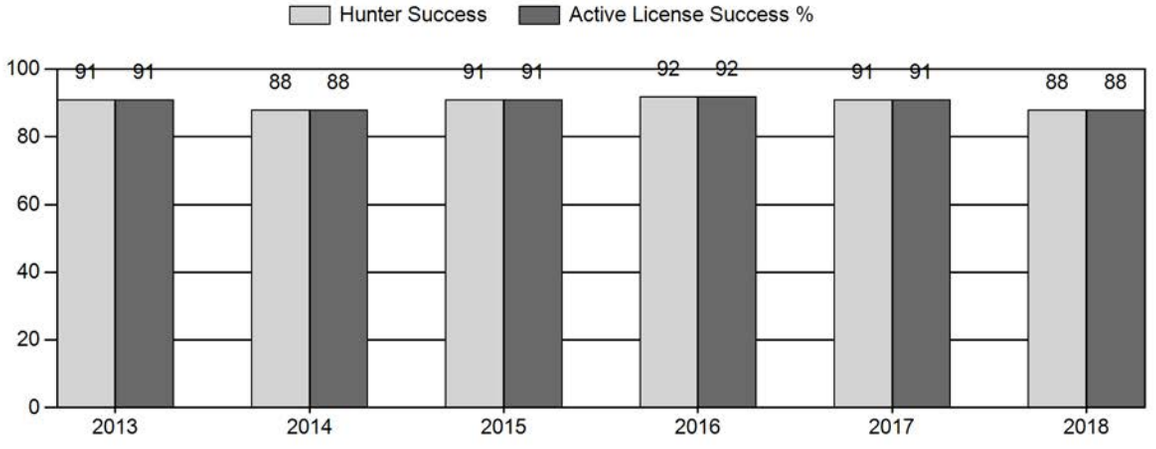
Harvest



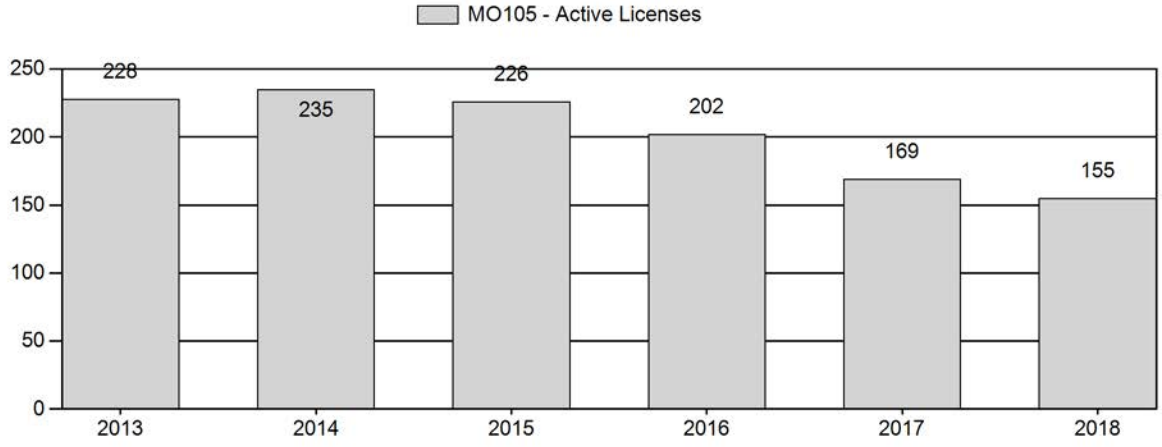
Number of Active Licenses



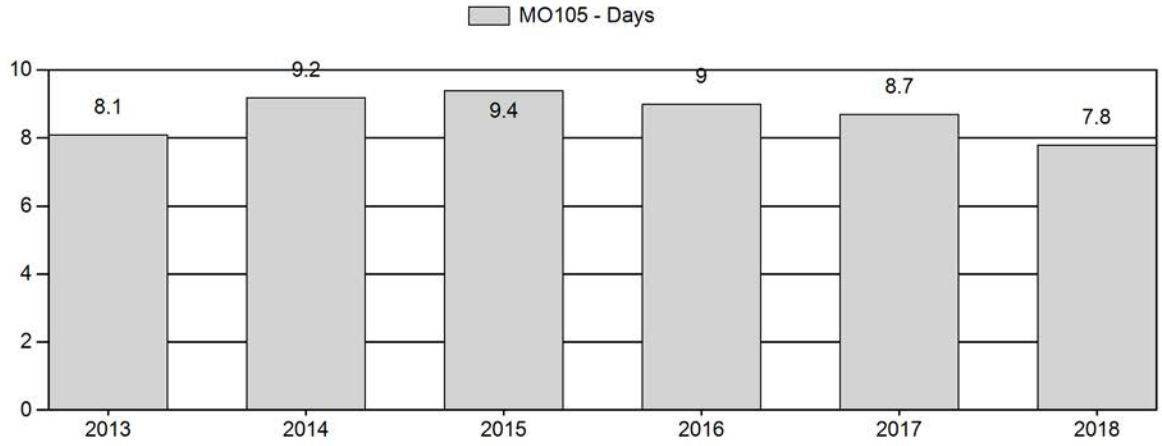
Harvest Success



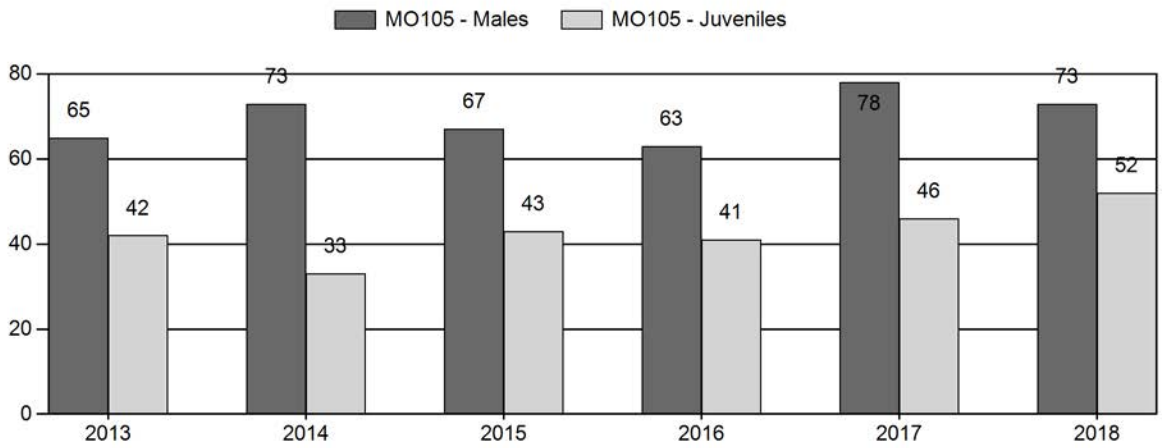
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2013 - 2018 Postseason Classification Summary

for Moose Herd MO105 - SUBLETTE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2013	0	0	435	436	31%	669	48%	282	20%	1,387	909	0	65	65	± 0	42	± 0	26
2014	0	0	380	380	35%	518	48%	173	16%	1,071	800	0	73	73	± 0	33	± 0	19
2015	0	0	314	314	32%	469	48%	202	21%	985	886	0	67	67	± 0	43	± 0	26
2016	0	0	390	390	31%	620	49%	255	20%	1,265	830	0	63	63	± 0	41	± 0	25
2017	0	0	379	379	35%	485	45%	224	21%	1,088	730	0	78	78	± 0	46	± 0	26
2018	0	0	391	391	33%	533	44%	275	23%	1,199	687	0	73	73	± 0	52	± 0	30

2019 Seasons – Sublette Moose Herd Unit (MO105)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
3	1	Sep. 20	Oct. 31	5	Limited quota	Antlered moose, also valid in Area 4
4	1	Sep. 20	Oct. 31	10	Limited quota	Antlered moose, also valid in Area 3
4	4	Sep. 20	Oct. 31	5	Limited quota	Antlerless moose, except cow moose with calf at side
5	1	Oct. 1	Oct. 31	25	Limited quota	Antlered moose
10	1	Sep. 15	Oct. 31	8	Limited quota	Antlered moose (7 resident and 1 non-resident licenses)
20	1	Sep. 15	Oct. 31	15	Limited quota	Antlered moose
21	1	Sep. 15	Oct. 31	2	Limited quota	Antlered moose (1 resident and 1 non-resident licenses)
22	1	Oct. 1	Oct. 31	5	Limited quota	Antlered moose
23	1	Sep. 15	Oct. 31	15	Limited quota	Antlered moose
24	1	Sep. 15	Oct. 31	20	Limited quota	Antlered moose
25	1	Oct. 1	Oct. 31	45	Limited quota	Antlered moose
25	4	Oct. 1	Oct. 31	5	Limited quota	Antlerless moose, except cow moose with calf at side
Archery Seasons						
3, 4		Sept. 1	Sept. 19			Refer to Section 3
5, 22, 25		Sept. 1	Sept. 30			Refer to Section 3
10, 20, 21, 23, 24		Sept. 1	Sept. 14			Refer to Section 3

Summary of Changes in License Numbers

Hunt Area	License Type	Quota Changes from 2018
		No Changes
MO105 Totals		**No Changes**

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,500
Management Strategy: Special
2018 Trend Count: 1,210
Most Recent 3-year Running Average Trend Count: 1,204

The Sublette Moose Herd Unit encompasses approximately 3,306 square miles of occupied moose habitat that lies within portions of Lincoln, Sublette, and Teton Counties. The Wyoming Range and Salt River Range Mountains, along with a portion of the Wind River and Gros Ventre Mountains lie within this herd unit. A total of 10 Hunt Areas (Areas 3, 4, 5, 10, 20, 21, 22, 23, 24, & 25) make up the Sublette Herd Unit. A mid-winter trend objective of 1,500 (±20%) moose is the management objective for this herd unit. This herd unit is also under a "special" management strategy to maintain an average harvest age of 4 years for bulls as a measure to maintain "trophy" harvest opportunities.

Herd Unit Issues

Undetermined moose deaths have been documented within this herd unit during past years. The significance of these spring mortalities are currently unknown, and it appears other factors besides hunter harvest is slowing population growth. A study conducted during 2011-2014 within a portion of this herd unit documented moose demographics, body condition, and survival rates to help managers better understand issues and problems within this moose population. Findings from this study indicate lower than expected adult female survival, fluctuating and low pregnancy rates, and high calf survival rates. Fat measurements from study animals indicated overall poor body condition, suggesting poor quality habitat. A combination of factors such as habitat conditions, disease, parasites, predation, etc. may all be attributing to limited population growth in this herd.

Weather

Although winter snow accumulations influence winter counting conditions as trend data increase on low elevation ranges during winters with above average snow depths, little is known about the other affects climate has on this moose herd. Recent weather trends have been drier and warmer, with sporadic periods of harsh winter conditions. The 2014-15, 2015-16, and 2017-18 winters had below normal snow levels at lower basin elevations, while the 2016-17 winter experienced above average snow accumulations throughout the herd unit. The 2018-19 winter appears to represent average snow accumulations as of late February.

Habitat

The main plant community associations in this herd unit are willow, sagebrush, mixed shrub, aspen, conifer, and alpine communities from low to high elevations (6,500 to 12,500 feet). Moose in this herd unit can be found on both private lands and public land managed by the U.S. Forest Service and Bureau of Land Management (BLM) throughout the year. During the winter, most moose migrate to lower elevation willow riparian, aspen, or mixed shrub dominated habitats associated with lower elevations. Roughly 700 square miles of native winter range have been identified in this herd unit, which encompasses all types of land ownership (private, public, and state trust land).

Field Data

The 2018 postseason counts resulted in more moose observed compared to 2017 postseason classification surveys (Table 1). Snow accumulations were average at the time of this survey and for the 2018-19 winter. Snow conditions were well above average during the 2016-17 winter resulting in more moose counted compared the 2014, 2015, and 2017 counts where snow accumulations were below normal (Table 1). High concentrations of moose at lower elevations (Areas 4 and 25), and fewer moose at higher elevation habitats is typical during winter surveys on all years, although trend counts are still influenced by winter snow depths. On heavy snow years, moose vacate higher elevation forested habitats where observability is limited and move to lower elevation willow habitats. Budgeted survey time limits the coverage of forested habitats, concentrating survey efforts to lower elevation habitats where moose congregate and observability is good. Overall, trend counts indicate this moose herd has been relatively stable during the past several years, although lower since 2013.

Table 1. Trend counts by Hunt Area for the Sublette Moose Herd Unit, 2009-2018.

Hunt Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
3	56	18	38	21	24	22	32	20	26	10
4	212	261	320	319	346	224	235	366	280	314
5	48	100	44	82	79	34	73	33	65	47
10	13	10	8	4	0	10	31	16	19	36
20	10	16	28	13	32	65	49	36	60	35
21	4	30	23	18	11	7	17	23	1	11
22	30	23	27	49	47	17	13	2	11	2
23	60	46	26	52	55	37	32	17	32	16
24	0	0	0	0	0	0	0	0	0	0
25	503	679	754	742	806	664	517	774	620	739
Total	**936**	**1183**	**1268**	**1300**	**1400**	**1080**	**999**	**1287**	**1114**	**1210**

Postseason classification surveys for 2018 produced a bull:100 cow ratio of 73:100, lower than 2017 but higher than the previous 5-year average of 69:100. During the previous 5-year period the observed bull:cow ratio has ranged from 63:100 to 78:100. The 2018 calf:100 cow ratio of 52:100 is higher than 2017, the 5-year average of 41:100, and any year during the past 25 years. The previous 5-year calf:cow ratio ranged from 33:100 to 46:100.

Harvest Data

A total of 136 moose (129 bulls and 7 cows/calves) were harvested in 2018. Harvest has continued to decline annually, as managers continue to make adjustments in licenses quotas. The total number of licenses issued declined from 630 in 2002, to 160 in 2018, a total decrease of 460 (74%). These reductions by license type since 2002 equates to declines of 96% (230 to 10) cow/calf (Type 4) licenses and 63% (400 to 150) bull (Type 1) licenses. Compared to the previous 5-year averages, hunter success was slightly lower at 88% along with lower hunter effort at 7.8 days per animal harvested in 2018.

A total of 97 teeth representing approximately 71% of the reported 2018 harvest were aged using cementum annuli analysis. The 2018 tooth age results from the WGFD lab showed an average

age of 4.7 (median age = 4.0) derived from 71% of reported harvest for bulls and an average age of 4.8 (median age = 4.5) derived from 86% of reported harvest for cows. Average age of harvest for bulls has remained relatively similar at approximately 4.0 years during the past 10+ years (Figure 1). The low sample sizes used to derive female ages in recent years results in erratic and unreliable trends (Figure 1).

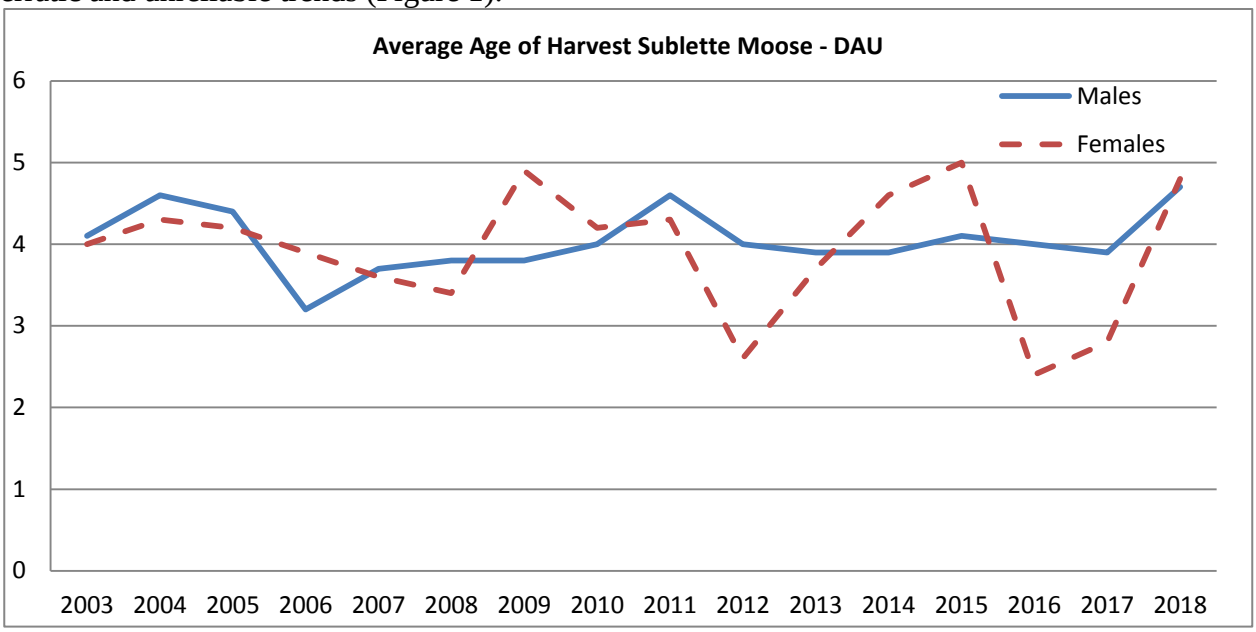


Figure 1. Average age of harvested male and female moose, Sublette Herd Unit, 2003-2018.

An average antler width of 37 inches for bull moose was reported in this herd during 2018, derived from 58% of successful moose hunters that submitted antler information with tooth collections.

Population

Starting in 2013, a mid-winter trend count was approved as the management objective for this herd unit instead post-hunt population estimates. The mid-winter trend objective for this herd is 1,500 moose (± 20%). The 2018 mid-winter trend count was 1,210 moose and the most recent 3-year average (2016-2018) trend is 1,204 moose.

Past population modeling efforts for this herd have typically produced estimates higher, usually ~75% higher, than what annual trend counts document. Maintaining comparable classification survey efforts (flight time) compared to past years will provide managers a reliable data set that will reflect population trends in this herd unit. These mid-winter trend counts do not reflect the actual moose population, as not all areas with wintering moose are surveyed and not all moose are observed in those areas that are surveyed.

Management Summary

Data for this herd unit suggest this postseason moose population declined during the late 1990's, stabilized in 2004 and 2005, slowly increased through 2013, and either stabilized or slightly decreased to 2018. During 2014 calf:cow and bull:cow ratios fluctuated more than usual, as reproductive rates dropped to 33 calves:100 cows, and male ratios increased to 73 bulls:100

cows. In 2015 and 2016, calf and bull ratios returned to average levels, while both bull and calf ratios increased in 2017. Bull ratios dropped slightly while calf ratios increased to the highest level observed in 25 years in 2018. Local managers believe the lower trend counts in 2014, 2015, and 2017 is attributed to poor counting conditions due to mild winter conditions and not reflective of a declining moose population, which is confirmed by the higher documented trend count in 2016 and 2018. Harvest success remains high and hunter satisfaction appears good in most hunt areas. In addition, average age of harvested males is adequate and hunter reported antler widths average 37 inches, suggesting bull quality is being maintained in this herd unit. A few hunt areas, primarily located in the Hoback River drainage, have recently shown lower moose numbers and poorer harvest rates resulting in further quota changes and hunt area boundary modifications.

The licenses available for the 2019 season continue to be conservative as the 3-year mid-winter trend average is at the low end of the management objective (1200 -1800 moose) and herd growth has been somewhat stable or undetermined in recent years. There are no proposed changes in licenses in 2019.

A total of 150 Type 1 (antlered) and 10 Type 4 (antlerless) licenses are available for 2019. Harvest for 2018 is estimated at 135 bulls and 7 cows/calves for a total harvest of 142 moose. Given average reproduction and survival, this harvest should result in a 2018 mid-winter trend count near 1,300 moose.