GREEN RIVER REGION

TABLE OF CONTENTS

ACKNOWLEDEMENTS

The field data contained in these reports is the result of the combined efforts of the Green River Region Wildlife Division personnel including District Wildlife Biologists, District Game Wardens, Terrestrial Habitat Biologist, Green River Wildlife Technician, Wildlife Management Coordinator, Region Supervisor, and all other department personnel that participated in data collection. Gratitude is also extended to the Green River neighboring regions of Pinedale, Jackson, Laramie, and Lander for their assistance in collaboration of data collection efforts. The authors of this report wish to express their appreciation to all those who assisted in data collection.

2022 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2022 - 5/31/2023

HERD: PR401 - SUBLETTE

HUNT AREAS: 85-93, 96, 101, 107

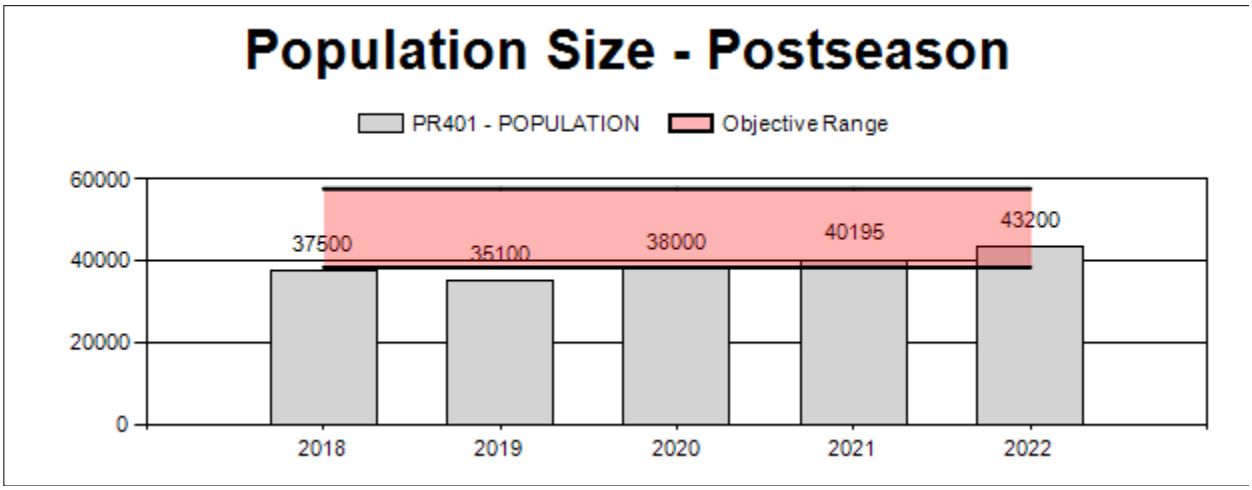
PREPARED BY: PATRICK BURKE

	2017 - 2021 Average	2022	2023 Proposed
Population:	37,359	43,200	46,400
Harvest:	2,887	3,069	3,000
Hunters:	2,946	3,205	3,200
Hunter Success:	98%	96%	94 %
Active Licenses:	3,306	3,526	3,200
Active License Success:	87%	87%	94 %
Recreation Days:	9,221	9,906	10,000
Days Per Animal:	3.2	3.2	3.3
Males per 100 Females	56	56	
Juveniles per 100 Females	56	55	

Population Objective (± 20%) :	48000 (38400 - 57600)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-10%
Number of years population has been + or - objective in recent trend:	10
Model Date:	02/24/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	5%	5%
Males ≥ 1 year old:	20%	18%
Proposed change in post-season population:	8%	7%



2023 Hunting Seasons
Sublette Pronghorn Herd (PR401)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
86	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	10	Any antelope
87	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	40	Any antelope
87	2	Aug. 15	Sept. 9	Sept. 25	Oct. 31	30	Any antelope
88	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	40	Any antelope
89	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	30	Any antelope
89	2	Aug. 15	Sept. 9	Oct. 10	Oct. 31	20	Any antelope
90	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	35	Any antelope
91	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	75	Any antelope
92	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	150	Any antelope
93	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	300	Any antelope
96	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	75	Any antelope
101	1	Aug. 15	Sept. 9	Sept. 10	Oct. 31	35	Any antelope
107	1	Aug. 15	Sept. 9	Sept. 10	Oct. 22	75	Any antelope
107	0	Aug. 15	Sept. 9	Aug. 20	Sept. 9	25	Any antelope, muzzleloading firearms and handguns only

2022 Hunter Satisfaction: 89.2% Satisfied, 6.9% Neutral, 3.9% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation:

The 2023 season structure differed significantly from the 2022 season in several ways. The first of the changes made in 2023 was the elimination of all doe/fawn licenses from the herd unit. In 2022, there was a total of 1,575 licenses valid for pronghorn does or fawns was issued in the herd unit, but due to the severe winter conditions experienced by the Sublette herd during the 2022-2023 winter, all of those licenses were removed for 2023. In addition to the removal of all doe/fawn licenses in the herd unit due to above average winter mortality, an additional 1,600 fewer any antelope licenses were issued for the 2023 hunting season to help better align license numbers with the number of animals that made it through the 2022-2023 winter.

While the degree of severity varied some across the herd unit due to the large geographic area that this herd occupies, in general the 2022-2023 winter saw significantly above average snowfall and below average temperatures for most of the area occupied by the Sublette pronghorn herd. In addition to lower survival caused by extreme winter conditions, outbreaks of *Mycoplasma bovis* were also documented in several portions of the herd unit during the later winter months. While it is not possible to quantify the number of pronghorn that succumbed to *M. bovis* during the 2022-2023 winter due to the large numbers of pronghorn that were also dying from winter conditions, a reasonable estimate of the number of animals affected would be well over 1,000 pronghorn, with the highest number of cases appearing to have been in the Pinedale area.

Data from collared animals, both from the Sublette herd and from the neighboring Red Desert herd, suggest that somewhere between 50% and 75% of the herd may have perished during the 2022-2023 winter, either form severe winter conditions or from disease. However, it may take some time before managers are able to ascertain how many animals were truly lost during this winter, as survival rates appeared to differ significantly across the herd unit with pronghorn wintering around Rock Springs and Green River seemingly having significantly better over-winter survival than portions of the herd wintering elsewhere. What is unknown is what proportion of the herd as a whole was able to find areas with better winter conditions.

The modeled post-season 2022 population estimate for the Sublette herd was 43,200 pronghorn; which is 10% below its objective of 48,000, but is within the herd's objective range of 38,400 to 57,600 pronghorn. This herd has been below objective since the 2010-2011 winter, and has just recently grown to being back within it's at objective range. However, after the significant winter losses experienced by this herd during the 2022-2023 winter, it will certainly again be below its population objective.

Observed buck ratios in 2022 were 56 bucks per 100 does herd unit wide, which puts the observed ratios for this herd within the recreational management criteria for pronghorn herds. Based on model estimates, the average proportion of preseason adult males harvested for the last three years is roughly 16% of the preseason population, with the 2022 estimated proportion of adult bucks harvested also being 16%. Previously, the model had been estimating the proportion of preseason bucks harvested annually to be closer to 23% for this herd, so the current estimates are a significant departure from what the model had been estimating in previous years.

The observed fawn ratio in the Sublette herd was 55 fawns per 100 does in 2022. While this number is a significant improvement over the 48 fawns per 100 does seen in 2021 and is not dissimilar from other recent observed fawn ratios, it is still below the long term average of 64 fawns per 100 does for this herd. Given the observed fawn ratio, this herd should continue to experience moderate growth assuming that winter mortalities do not end up being worse than what is currently being estimated.

2.) Population Modeling:

In 2021, WGFD managers began using PopR integrated population models (IPM) to estimate population indices for mule deer and pronghorn. The bio-year 2022 postseason population estimate for this herd unit was 43,200 (CL = 38,450 – 47,900) pronghorn.

While the IPM model does estimate 2020 end of bio-year population size above the 2020 end of bio-year line transect estimate, the model does roughly agree with previous modeled estimates for this herd.

2022 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2022 - 5/31/2023

HERD: PR411 - UINTA-CEDAR MOUNTAIN

HUNT AREAS: 95, 99 | PREPARED BY: JEFF SHORT

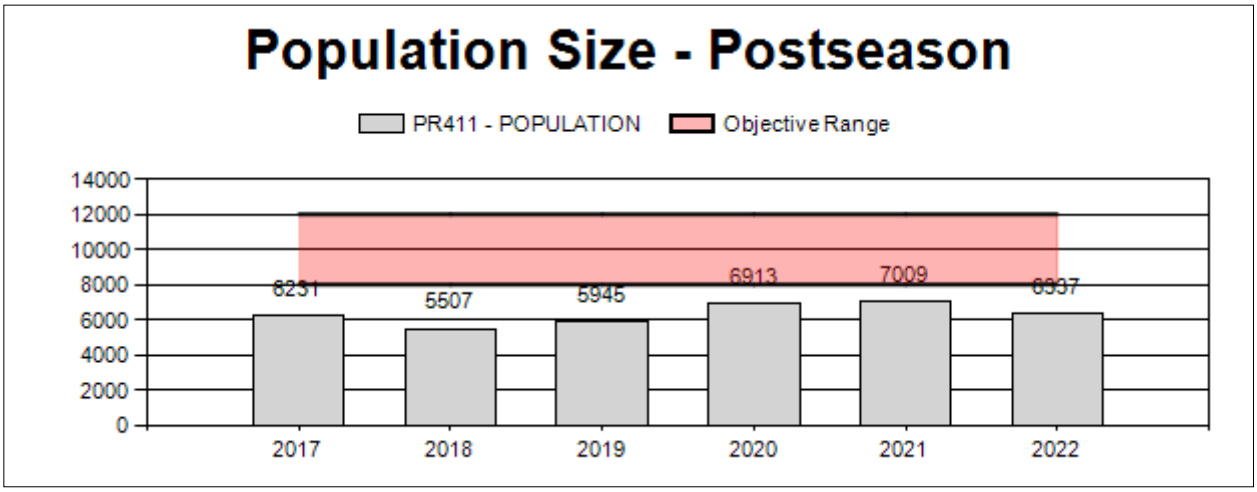
	2017 - 2021 Average	2022	2023 Proposed
Population:	6,321	6,337	6,620
Harvest:	759	484	500
Hunters:	847	517	525
Hunter Success:	90%	94%	95 %
Active Licenses:	929	549	550
Active License Success:	82%	88%	91 %
Recreation Days:	3,160	2,450	2,500
Days Per Animal:	4.2	5.1	5
Males per 100 Females	54	61	
Juveniles per 100 Females	40	63	

Population Objective (± 20%) : 10000 (8000 - 12000)

Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-36.6%
Number of years population has been + or - objective in recent trend:	10
Model Date:	02/27/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	2.5%	3%
Males ≥ 1 year old:	23.6%	21%
Proposed change in post-season population:	-1.6%	1.04%



2023 HUNTING SEASONS

Uinta-Cedar Mountain Herd Unit (PR411)

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
95	1	Aug. 15	Sept. 9	Sep. 10	Oct. 31	300	Any antelope
99	1	Aug. 15	Sept. 9	Sep. 10	Oct. 31	125	Any antelope
99	2			Aug. 15	Nov. 30	25	Any antelope valid north and west of Wyoming Highway 410 and west of Uinta County Road 271
99	0			Sep. 1	Oct. 31	25	Any antelope, muzzle-loading firearms only

2023 Hunter Satisfaction: 86.9% Satisfied, 9.2% Neutral, 3.9% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation: Conservative seasons are warranted in this herd. Historical harvest pressure to alleviate landowner complaints, coupled with dry summers and difficult winters have resulted in reduced pronghorn numbers in this herd. Unfortunately the Sever winter conditions in 2022/23 have made conditions very difficult for antelope in much of Wyoming. This herd was below objective prior to winter. Where possible, we are continuing moderate harvest for 2023.

Hunt Area 95 is the least productive area in the herd, but tends to produce the largest bucks and is a favorite of local pronghorn hunters. We traditionally offer Hunt Area 95 type 7 (irrigated land only) licenses solely to alleviate damage issues on key parcels. These were eliminated in 2023 due to concern over the harsh winter.

Hunt Area 99 is historically much more productive and has more private landowner complaints. In Hunt Area 99, we traditionally offer type 7 licenses to target specific private land complaints on the west side of the hunt area. We also had a type 8 hunt that addresses specific private land complaints on the east side of the hunt area. These hunts were eliminated in 2023 due to concern over the harsh winter.

2.) Winter Severity: We have had four severe winters in the last seven years (2016-17, 2018-19, 2019-20 and now 2022-23). Weather related impacts to pronghorn are less in this area than in other areas in SW Wyoming and much lower than they are for mule deer. Pronghorn in this herd generally have the ability to migrate to lower elevation flats to the east during severe winters. Mortality in Hunt Area 95 was actually very low and radio collared doe survival was 100%. We do not have mortality rate data on Hunt area 99 but some information indicates it was not as severe as many thought it was. Due to concern over the severe winter all doe/fawn only hunts (Type 6 and 7) were eliminated and many Type 1 hunts were reduced even though mortality was low in this herd. There will likely be increased damage complaints due to the elimination of hunts designed to alleviate damage problems. Movements of pronghorn in this area have become more difficult as human development and disturbance impedes movement corridors and annual migration.

3.) Line Transect Surveys: Population estimates with the Line Transect survey technique are very important for providing adequate data to model antelope herd populations. Without performing these surveys periodically, it is unlikely that the population models can perform reliably. We have not had the budget to conduct line transect surveys in this herd since 2014. This makes our current model estimates less reliable.

4.) Population Modeling: In 2021, WGFD managers began using PopR integrated population models (IPMs) to estimate population indices for mule deer and pronghorn. The 2022 postseason population estimate for this herd unit from the PopR IPM is 6,337 (CL = 5,753-7,015) pronghorn. We have relatively low confidence in this model since we have not had the budget to fly a Line Transect Survey since 2014. In the future it will be imperative that obtain reliable line transect population estimates periodically to check the status of the herd and anchor any model.

2022 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2022 - 5/31/2023

HERD: PR412 - SOUTH ROCK SPRINGS

HUNT AREAS: 59, 112

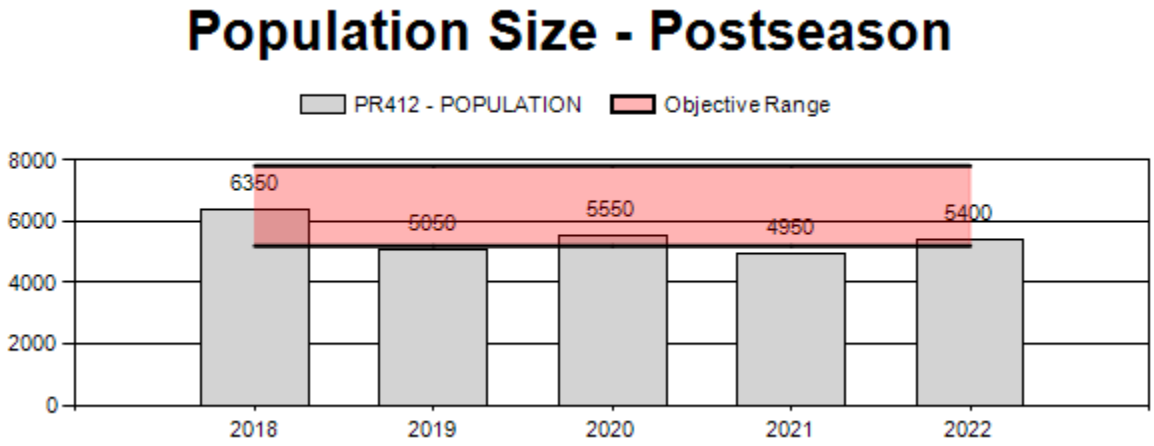
PREPARED BY: PATRICK BURKE

	2017 - 2021 Average	2022	2023 Proposed
Population:	5,720	5,400	5,600
Harvest:	384	277	227
Hunters:	423	320	275
Hunter Success:	91%	87%	83 %
Active Licenses:	444	330	330
Active License Success:	86%	84%	69 %
Recreation Days:	1,419	983	900
Days Per Animal:	3.7	3.5	4.0
Males per 100 Females	41	35	
Juveniles per 100 Females	39	41	

Population Objective (± 20%) :	6500 (5200 - 7800)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-16.9%
Number of years population has been + or - objective in recent trend:	4
Model Date:	02/27/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	1.3%	0%
Males ≥ 1 year old:	35.3%	20%
Proposed change in post-season population:	-4%	2%



2023 Hunting Seasons
South Rocks Springs Pronghorn Herd (PR412)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
59	1	Aug. 15	Sept. 19	Sept. 20	Oct. 31	125	Any antelope
112	1	Aug. 15	Sept. 19	Sept. 20	Oct. 31	50	Any antelope

2022 Hunter Satisfaction: 88.1% Satisfied, 9.9% Neutral, 2.0% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation:

The 2023 hunting season for the South Rock Springs pronghorn herd maintained the same general season structure that has existed in the herd in the past, but removed the Type 6 doe/fawn license type from both hunt areas that make up the herd unit. Following extremely low fawn ratios observed in 2019, which caused the population estimate to dip below its objective range, doe harvest was reduced significantly in 2020 in order to help the population recover. Even with that reduction in doe harvest, this herd has been unable to grow back to its objective of 6,500 pronghorn. Currently, the herd is estimated at around 5,400 pronghorn after the 2022 hunting season, which is approximately 17% below objective. Because the herd is below objective, and because observed fawn ratios in 2022 were only 40 fawns per 100 does, which is probably below what is necessary for this population to grow, the doe/fawn licenses that had been offered in this herd unit were removed to hopefully help this population increase towards its objective.

While the 2022-2023 winter was significantly above average with above average snow fall and below average temperatures across most of western Wyoming, it appears that the South Rock Springs herd was able to escape the extreme winter mortality rates that were seen in some of its neighboring herds. However, because many of the pronghorn in this herd will move to areas south of the Wyoming border during severe winters, it will take some time to ascertain exactly what percentage of this herd was able to pull through the winter.

Observed buck ratios have been at the lower end of the recreational management range, and have been declining for the last several years. Because of this, and due to some uncertainty about how much of an impact the 2022-2023 winter will have on this herd, Type 1 license numbers were kept at their 2022 levels for the 2023 hunting season. Lower hunter success rates and a days per harvest estimate of almost six days per animal harvested in HA112, cause some concern and suggest that license numbers, particularly in HA112 should not be increased. On average, approximately 20% of the estimated preseason buck population has been harvested over the last three years, and the 2023 hunting season should again harvest around 20% of the preseason buck population assuming that there are only average winter losses during the 2022-2023 winter. Given the projected harvest and fawn recruitment rates, the model predicts that this herd should still be near the lower end of its objective range after the 2023 hunting season.

2.) Management Objective Review:

In 2022 managers reviewed the past five year's population, weather and habitat data, as well as public desires and determined that the current management objective for the South Rock Springs pronghorn herd is still appropriate.

3.) Population Modeling:

In 2021, WGFD managers began using PopR integrated population models (IPM) to estimate population indices for mule deer and pronghorn. The bio-year 2022 postseason population estimate for this herd unit was 5,400 (CL = 4,700 – 6,400) pronghorn. It is important to note that the IPM model appears to be estimating buck ratios for this herd above observed values, which may be causing it to underestimate the proportion of bucks harvested each year.

2022 - JCR Evaluation Form

SPECIES: Pronghorn PERIOD: 6/1/2022 - 5/31/2023

HERD: PR414 - BITTER CREEK

HUNT AREAS: 57-58 PREPARED BY: PHILIP DAMM

	2017 - 2021 Average	2022	2023 Proposed
Population:	11,597	12,077	12,158
Harvest:	497	457	250
Hunters:	545	523	300
Hunter Success:	91%	87%	83 %
Active Licenses:	579	532	300
Active License Success:	86%	86%	83 %
Recreation Days:	1,908	1,683	1,000
Days Per Animal:	3.8	3.7	4
Males per 100 Females	59	60	
Juveniles per 100 Females	36	53	

Population Objective (± 20%) : 13000 (10400 - 15600)

Management Strategy: Special

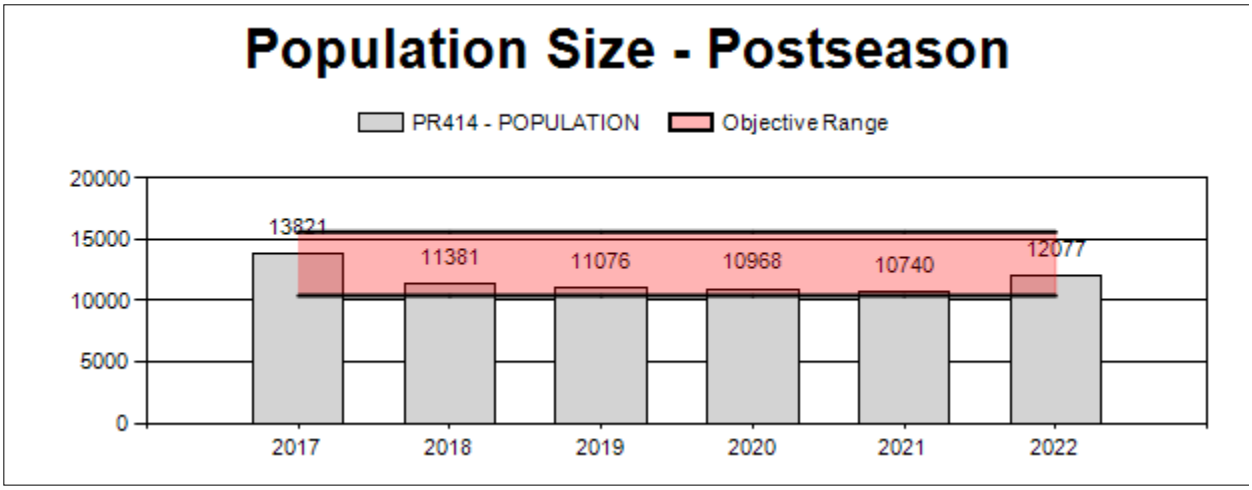
Percent population is above (+) or below (-) objective: -7.1%

Number of years population has been + or - objective in recent trend: 0

Model Date: 2/27/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	1%	0%
Males ≥ 1 year old:	16%	7%
Proposed change in post-season population:	-5%	1%



2023 Hunting Seasons
Bitter Creek Pronghorn Herd Unit (PR414)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
57	1	Aug. 15	Sep. 19	Sep. 20	Oct. 31	175	Any antelope
57	2	Aug. 15	Sep. 19	Sep. 20	Oct. 31	25	Any antelope valid west of Sweetwater County Road 23S and BLM Road 3310, and north and east of BLM Roads 4411 and 4409.
57	7	Aug. 15	Aug. 31	Sep. 1	Oct. 31	25	Doe or fawn valid on private land within one (1) mile of Carbon County Road 603.
58	1	Aug. 15	Sep. 19	Sep. 20	Oct. 31	75	Any antelope

2022 Hunter Satisfaction: 86% Satisfied, 8% Neutral, 6% Dissatisfied

2022 Management Summary

1.) Hunting Season Evaluation:

Hunters in 2022 experienced some improvement since 2020 in finding larger horned bucks in HA57. This was evident in increased single horn Boone and Crockett scores measured during field checks in the 2022 hunt (Figure 1). Counter, these scores along with the traditional horn length measurement decreased on average in HA58 over 2021, although small sample size was an issue there. Buck ratios were marginal for a special management herd at 60, but disparity continued to exist between the two Hunt Areas (63 for HA57 and 54 for HA58). Nevertheless, hunter comments suggest the expectations for larger horned bucks in these Hunt Areas were still higher, though hunter satisfaction did improve. Incisors from harvested bucks were also collected in 2022 for *cementum annuli* analysis to help determine whether bucks were reaching satisfactory maturity prior to harvest. The average age of sampled bucks was 5.9 in HA57 (n=52) and 5.8 in HA58 (n=13), which was an increase over the 5.1 average of both 2020 and 2021. These ages indicated bucks were reaching a level of maturity where they would have approached their maximum potential for horn growth (possibly 6.5 years old). The average ages observed likely indicated that uncontrollable factors such as current year's weather patterns and weather patterns while bucks were *in utero* were affecting horn size, and not the last few years' hunting seasons.

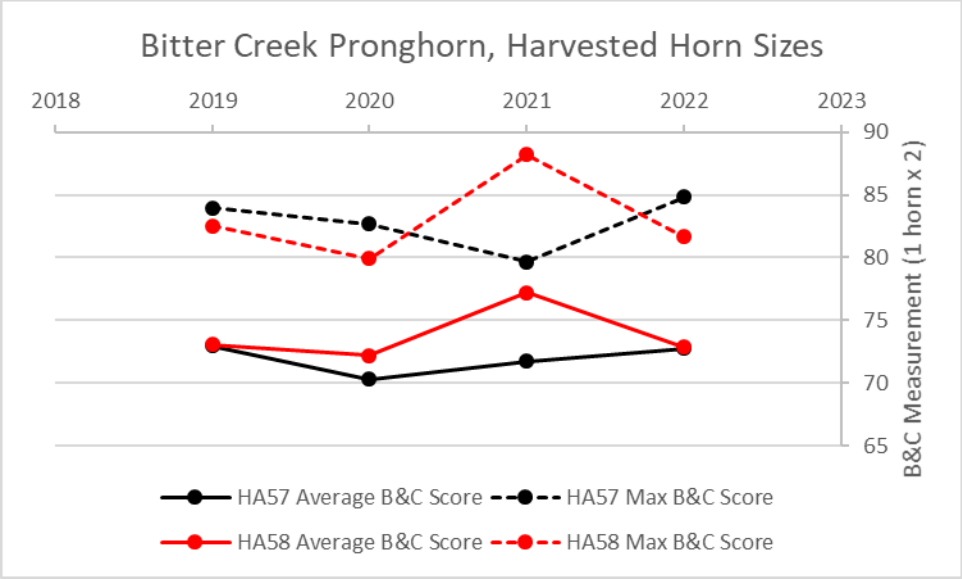


Figure 1. Average and maximum harvested pronghorn buck horn size (traditional Boone and Crockett score) for Hunt Areas 57 and 58 (double the single horn field measurement), 2019-2022.

A new population model (PopR integrated population model) was implemented in 2022 for the Bitter Creek herd. This model performed better than for some other herds and species, however issues were still observed, including unfavorable model diagnostics (even the model didn't think it performed well) and an increasing trend since 2019. In addition, the Line-Transect flight estimates appeared to be located in the wrong model years. The increasing trend since 2019 did not seem believable due to extremely consistently poor fawn productivity across the herd during that time period. With those caveats stated, the model (time varying reproduction and juvenile survival and constant adult survival) estimated a post-hunt population of 12,077 (95% CI from 10,497-13,657), which is within the objective range. Due to the change to the new modeling method, the population size graph's presentation is probably misleading.

A slight increase in fawn productivity was observed in 2022, but long term drought, invasive plants, and competition for forage from animals such as feral horses were still major issues for the Bitter Creek herd. A feral horse gather was completed in 2021, but removals centered around Adobe Town and may not have a large scale impact on this pronghorn herd. Annual weather patterns, and thus limitations in availability and quality/quantity of habitat, have been driving this population for the last several years, not harvest.

Snowpacks across most of the Bitter Creek pronghorn herd winter range were far above normal during winter 2022-23, with upwards of around 2 additional feet for much of the winter (Figure 2). With a number of considerable thawing and re-freezing cycles having occurred, several crusts in this snowpack formed. These snowpacks and crusts led to extremely difficult movement and foraging conditions across most of the herd. The winter probably was less severe in the western portions of the herd, but was not insignificant. An adjacent herd with doe-pronghorn collar data and similar winter conditions revealed around 50% mortality through the winter. Managers expected the Bitter Creek herd to be in the neighborhood of 5-6,000 animals at the end of the biological year.

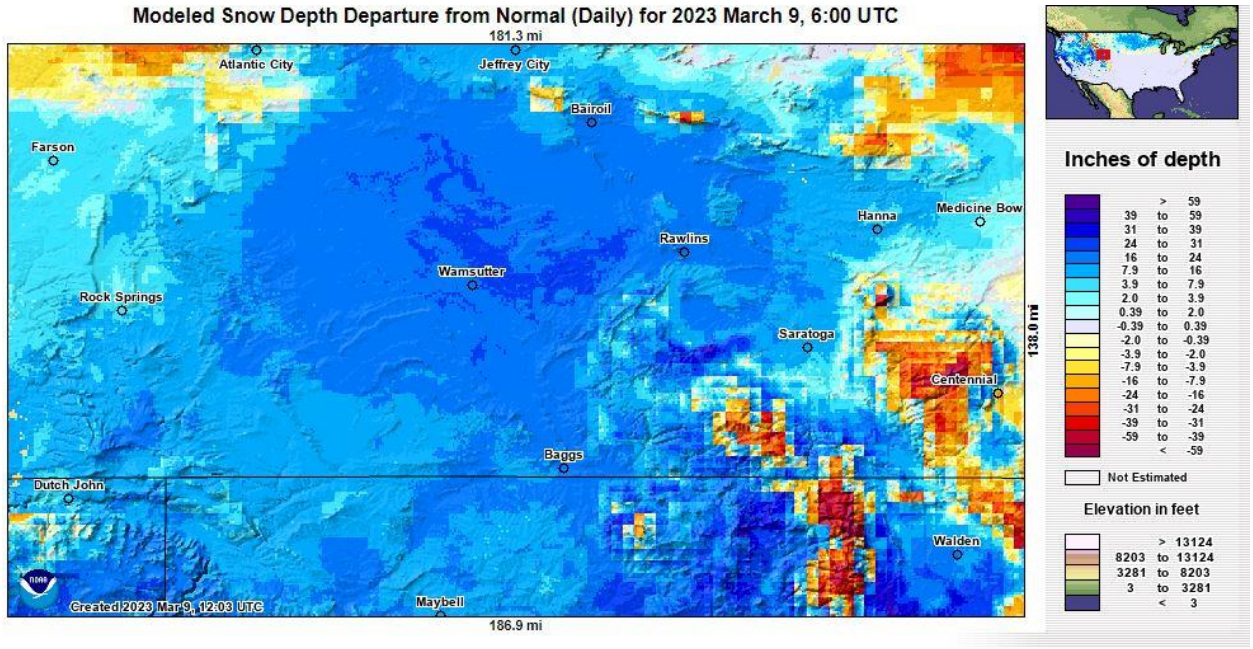


Figure 2. Modeled snow depth departure from normal as of March 9, 2023.

The severe winter conditions led managers to propose significant reductions in Type 1 licenses for HA57 and HA58, with at least a 50% reduction in population size expected. Although modeling indicated only 7% of adult bucks would be harvested (previous 3-year average of 15%) in 2023, reality is probably closer to 15% given issues with the new model and winter severity. Achieving the arbitrary 15% threshold of bucks harvested relative to modeled estimates for 2023 was unreasonable and not supported by reality. In addition, the buck ratio objective was not being met, along with unmet expectations of hunters for larger horned bucks.

2022 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2022 - 5/31/2023

HERD: PR419 - CARTER LEASE

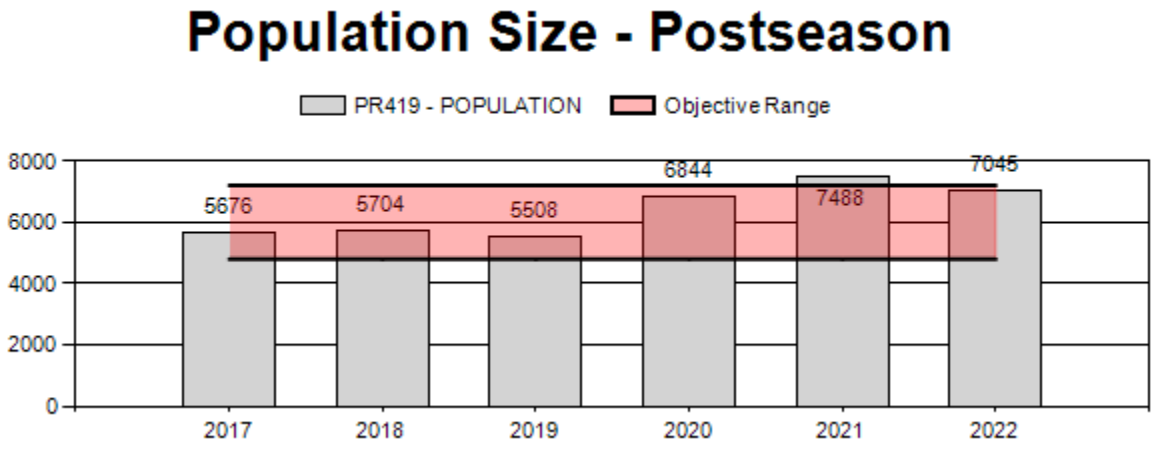
HUNT AREAS: 94, 98, 100 | PREPARED BY: JEFF SHORT

	2017 - 2021 Average	2022	2023 Proposed
Population:	6,244	7,045	7,006
Harvest:	1,297	1,151	1,200
Hunters:	1,425	1,221	1,250
Hunter Success:	91%	94%	96 %
Active Licenses:	1,587	1,375	1,400
Active License Success:	82%	84%	86 %
Recreation Days:	5,131	4,427	4,500
Days Per Animal:	4.0	3.8	3.8
Males per 100 Females	55	57	
Juveniles per 100 Females	54	65	

Population Objective (± 20%) :	6000 (4800 - 7200)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	17%
Number of years population has been + or - objective in recent trend:	0
Model Date:	02/27/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	12.7%	9.2%
Males ≥ 1 year old:	25.1%	29.9%
Proposed change in post-season population:	-12.0%	-0.6%



2023 HUNTING SEASONS

Carter Lease Herd Unit (PR419)

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
94	1	Aug. 15	Sept. 9	Sep. 10	Oct. 31	400	Any antelope
98	1	Aug. 15	Sept. 9	Sep. 10	Oct. 31	50	Any antelope
100	1	Aug. 15	Sept. 9	Sep. 10	Oct. 31	150	Any antelope

2022 Hunter Satisfaction: 89.0% Satisfied, 6.7% Neutral, 4.4% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation: In this herd unit, we are typically able to provide a significant amount of hunting opportunity due to the productive nature of the habitat. According to a recent line transect survey and the model; we are above the population objective range in Hunt Area 94. Unfortunately the Sever winter conditions in 2022/23 have made conditions difficult for antelope in Western Wyoming.

In hunt areas 98 and 100, we strive to maintain relatively low antelope densities. This is an effort to reduce browse competition for wintering mule deer. The area is a primary winter range for the Wyoming Range mule deer herd. We hunt antelope very aggressively in these hunt areas to try to keep numbers low. The minimum male harvest goal of 25% has been met in this herd for several years. We typically provide a high amount of opportunity in this herd, but due to concern over the severe winter, all doe/fawn only hunts (Type 6 and 7) were eliminated and many Type 1 hunts were reduced. This occurred even though Weather related impacts to pronghorn are less in this area than in other areas in Western Wyoming and much lower than they are for mule deer.

2.) Winter Severity: We have had four severe winters in this herd over a seven year period (2016-17, 2018-19, 2019-20 and now 2022-23). Typically, pronghorn are less affected by winter conditions than deer due to their ability and willingness to move to areas of more moderate conditions. Pronghorn in the eastern part of this herd generally have the ability to migrate to lower elevation flats during severe winters, but this is increasingly challenging. These crucial winter range movements become more difficult as human development and disturbance impedes those migration routes. Fencing and highways are particularly problematic especially in the western part of this population during winter. We do not have mortality rate data on this herd but some information indicates it was not as severe as many thought it was. Due to concern over the severe winter all doe/fawn only hunts (Type 6 and 7) were eliminated and many Type 1 hunts were reduced

3.) Line Transect Surveys: Population estimates with the Line Transect survey technique are very important for providing adequate data to model antelope herd populations. Without performing these surveys, it is unlikely that the population models can perform reliably. We were able to fly a Line Transect survey in May of 2021. This is an end of bio year 2020 population estimate. Previously we have not had the budget to conduct line transect surveys in this herd since 2013. In the future, we will need to the fly these surveys more often to effectively model this herd. The most recent estimate was 5,764. This was a higher estimate than what was being previously modeled and results in the herd being over objective. However, the SE and confidence interval on the estimate are high. This is due to an effort to be more efficient with survey money by reducing

sampling intensity. The result was a less precise estimate that is not as useful. In the future, it is advised that we go back to the previous sampling scheme.

4.) Population Modeling: A total Herd Unit model is not feasible in this herd. This is due to much different harvest and population parameters in Hunt Areas 98 and 100 compared to Hunt Area 94. Additionally, the line transect survey method does not fit well with the rugged terrain and very low animal densities found in hunt areas 98 and 100. The hunt areas are also separated by a highway that is very restrictive to pronghorn movements. For these reasons, we only fly line transect surveys and model the population in Hunt Area 94. The Hunt Area 94 population model is used for JCR reporting. Herd unit population estimates are reported as the model plus 1,000 animals to account for the populations we are unable to model in HA 98 and 100.

WGFD has started using PopR integrated population models (IPM) from Speedgoat to estimate populations for pronghorn. A Hunt Area 94 only PopR IPM is not available from Speedgoat. We hope to have this model available in the future so we can replace the WGFD spreadsheet model with the PopR IPM. Since there is no IPM available we have reported results from the spreadsheet model. The spreadsheet model estimates a Hunt Area 94 post-season population of 6,045 pronghorn in 2022. We have some confidence in this model since we flew a Line Transect Survey in 2021. In the future it will be imperative that obtain reliable line transect population estimates periodically to check the status of the herd and anchor any model.

2022 - JCR Evaluation Form

SPECIES: Pronghorn PERIOD: 6/1/2022 - 5/31/2023

HERD: PR438 - BAGGS

HUNT AREAS: 53, 55 PREPARED BY: PHILIP DAMM

	2017 - 2021 Average	2022	2023 Proposed
Population:	7,228	6,917	7,340
Harvest:	524	332	135
Hunters:	509	358	150
Hunter Success:	103%	93%	90%
Active Licenses:	580	371	150
Active License Success:	90%	89%	90%
Recreation Days:	1,556	1,088	500
Days Per Animal:	3.0	3.3	3.7
Males per 100 Females	59	57	
Juveniles per 100 Females	54	73	

Population Objective (± 20%) : 9000 (7200 - 10800)

Management Strategy: Recreational

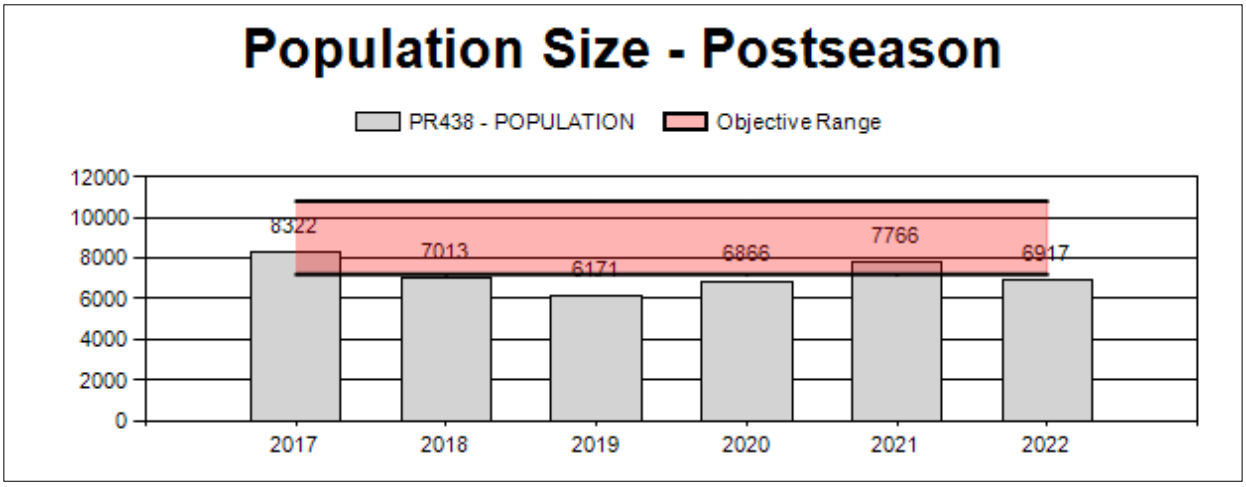
Percent population is above (+) or below (-) objective: -23.1%

Number of years population has been + or - objective in recent trend: 1

Model Date: 2/27/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	1%	2%
Males ≥ 1 year old:	16%	12%
Proposed change in post-season population:	11%	6%



2023 Hunting Seasons
Baggs Pronghorn Herd Unit (PR438)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
53	1	Aug. 15	Sep. 19	Sep. 20	Oct. 31	25	Any antelope
55	1	Aug. 15	Sep. 19	Sep. 20	Oct. 31	50	Any antelope

2022 Hunter Satisfaction: 87% Satisfied, 10% Neutral, 3% Dissatisfied

2022 Management Summary

1.) Hunting Season Evaluation:

Hunters in 2022 experienced some improvement since 2020 in finding larger horned bucks in HA53 and HA55. This was evident in horn lengths measured during field checks in the 2022 hunt (Figure 1) and in buck ratios in HA53 that included high proportions of yearling bucks. However, hunter comments suggest the expectations for larger horned bucks in these Hunt Areas were still higher, though hunter satisfaction did improve. Incisors from harvested bucks were collected in 2022 for *cementum annuli* analysis to help determine whether bucks were reaching satisfactory maturity prior to harvest. The average age of sampled bucks was 5.3 in HA53 (n=20) and 5.8 in HA55 (n=15). These ages indicated bucks were reaching a level of maturity where they would have approached their maximum potential for horn growth (possibly 6.5 years old); they also seemed excellent for a herd only managed recreationally. The average ages observed likely indicated that uncontrollable factors such as current year's weather patterns and weather patterns while bucks were *in utero* were affecting horn size, and not the last few years' hunting seasons.

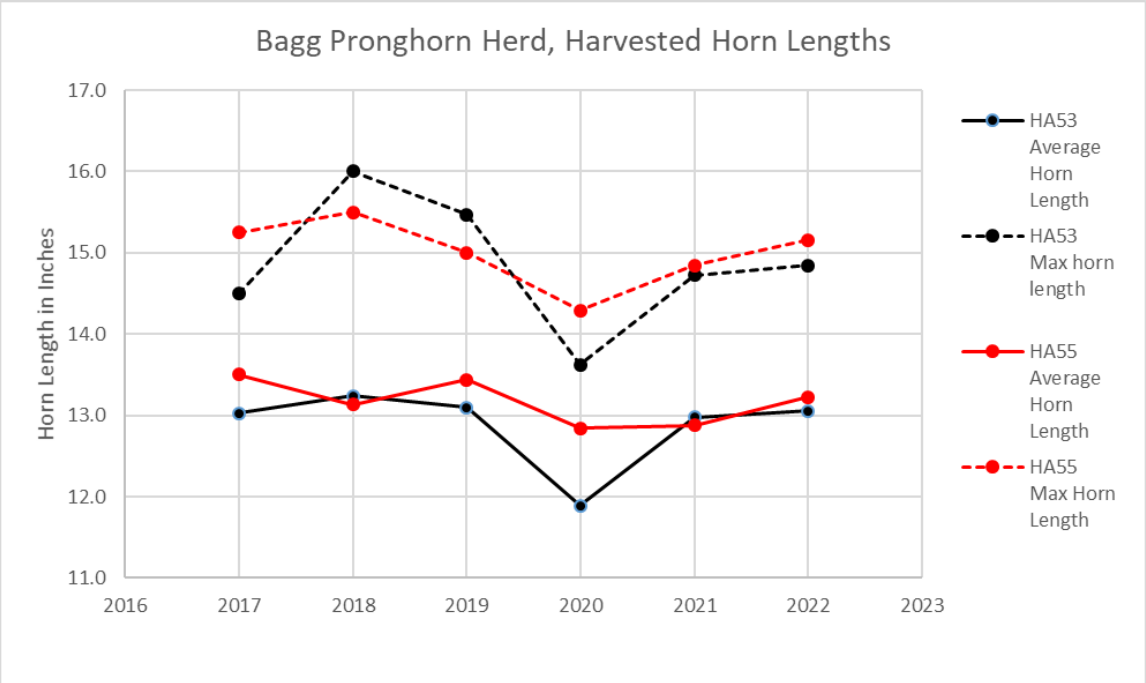


Figure 1. Average and maximum buck pronghorn horn length for Hunt Areas 53 and 55, 2017-2022.

Although unresolved issues were present, a new population model (PopR integrated population model) was implemented in 2022 for the Baggs herd. Issues included unfavorable model diagnostics (even the model didn't think it performed well), a lack of fit of the model's end of bio year estimates to Line-Transect flight estimates, and current year's post hunting season population estimates exceeding those of all of the last 22 years' (no support for this to have been in the realm of possibility). With those caveats stated, the model (time varying reproduction and juvenile survival and constant adult survival) estimated a post-hunt population of 6,917 (95% CI from 6,174-7,660), which is below the objective range. With this year's fawn ratios accounted for, and the effects of the winter notwithstanding, 2022's estimate should have increased over 2021's, but it did not relative to the old modeling method (see population graph); i.e. the graph's presentation is misleading.

Snowpacks across Baggs pronghorn herd winter ranges were well above normal during winter 2022-23, with upwards of around 2 additional feet for much of the winter (Figure 2). With a number of considerable thawing and re-freezing cycles having occurred, several crusts in this snowpack formed. These snowpacks and crusts led to extremely difficult movement and foraging conditions across the entire herd. An adjacent herd with doe-pronghorn collar data and similar winter conditions revealed around 50% mortality through the winter. Managers initially expected the Baggs herd to be in the neighborhood of 3-4,000 animals at the end of the biological year. However, significant additional mortality was realized when pronghorn became trapped in deep snow on the east side of Highway 789 due to woven wire fences. A portion of these animals traveled south to the juniper woodland habitats of the Baggs mule deer herd's crucial winter range and eventually starved to death. Another subset finally crossed the highway near Baggs and headed west into the Bitter Creek herd; as of the end of the biological year, they had not returned. A final large group migrated southeast of Baggs into Colorado and had reasonable survival, but were unable to return to the herd due to woven wire fences. The Baggs pronghorn population at the end of the winter perhaps numbered in the hundreds, instead of several thousand.

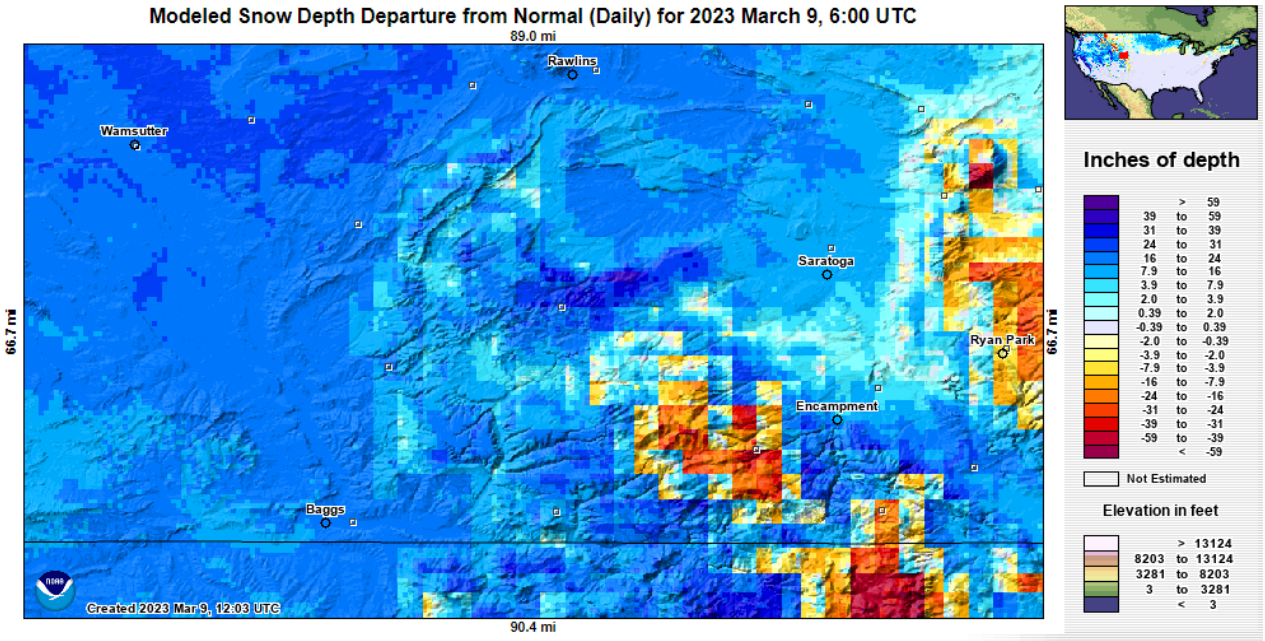


Figure 2. Modeled snow depth departure from normal as of March 9, 2023.

Although this population was on an upward trajectory in terms of recruitment/population size and buck ratios were excellent at 57, the severe winter conditions led managers to propose significant reductions in Type 1 licenses for both Hunt Areas. Initially, HA53 was proposed to be reduced by half (200 to 100), and HA55 a little more (175 to 75). After public input, HA53 was proposed to be reduced to 75 and HA55 to 50. At the eleventh hour, HA53 was reduced to 25 license by emergency rule, as a result of managers not observing pronghorn move back into the herd unit to the degree that was expected. Finally, although the Type 6 license was still needed for management purposes (year-round use from high pronghorn densities in a small area of mostly private land that overlapped crucial mule deer winter range), it was removed as a result of pressure from certain stakeholder groups.

2022 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2022 - 5/31/2023

HERD: MD423 - UINTA

HUNT AREAS: 132-133, 168 | PREPARED BY: JEFF SHORT

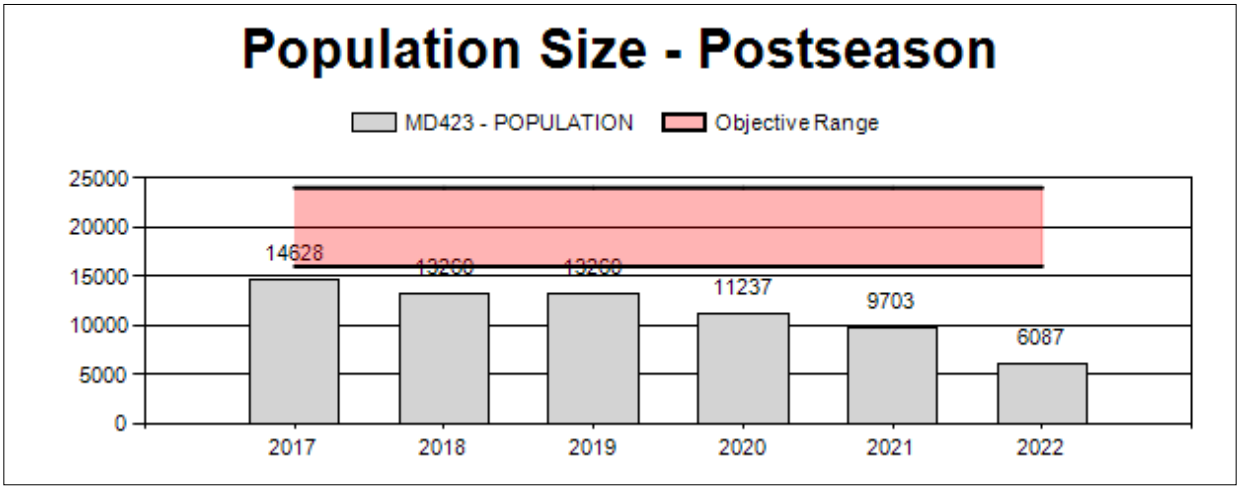
	2017 - 2021 Average	2022	2023 Proposed
Population:	12,418	6,087	6,135
Harvest:	635	479	400
Hunters:	1,913	1,459	1,200
Hunter Success:	33%	33%	33 %
Active Licenses:	1,925	1,459	1,200
Active License Success:	33%	33%	33 %
Recreation Days:	9,791	7,448	6,000
Days Per Animal:	15.4	15.5	15
Males per 100 Females	25	30	
Juveniles per 100 Females	57	67	

Population Objective (± 20%) : 20000 (16000 - 24000)

Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-69.6%
Number of years population has been + or - objective in recent trend:	10
Model Date:	3/1/2023

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:	31%	31%
Proposed change in post-season population:	4%	1%



2023 HUNTING SEASONS

Uinta Mule Deer Herd Unit (MD423)

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
132	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 6		Antlered mule deer three (3) points or more on either antler or any white-tailed deer
133	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 6		Antlered mule deer three (3) points or more on either antler or any white-tailed deer
168	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 6		Antlered mule deer three (3) points or more on either antler or any white-tailed deer
132, 133, 134, 135, 168	3	Sept. 1	Sept. 30	Oct. 1	Nov. 30		Any white-tailed deer

2022 Region K nonresident quota: 200 licenses

2021 Hunter Satisfaction: 45.6% Satisfied, 28.0% Neutral, 26.4% Dissatisfied

2022 Management Summary

1.) Hunting Season Evaluation: Due to requests from the public, we typically try to offer a season that includes 2 weekends with 14 days of general deer hunting opportunity in this herd unit. This season structure is very conservative and the population is not limited by this level of hunting. Continuing to offer this type of hunting opportunity in light of having lower deer survival during tough winters is still biologically appropriate. Changes in buck only hunting seasons will not resurrect deer that died in winters. This type of season will also not limit future growth of the herd. However, due to low deer numbers there is a social desire to have a season length shorter than 14 days. In response to that, the season was reduced from 14 days to 11 days starting in 2020 and it was further reduced to 6 days in 2023, as deer numbers have not rebounded due to repeated tough winter conditions. This season will only offer one weekend day of hunting opportunity and no Saturday in 2023. The antler point restriction was moved from four point to three point to standardize and simplify the regulations in Western Wyoming.

Season length is a social issue rather than a biological one. Season length changes in this herd unit have not affected harvest or hunter effort. In an analysis of season length data from 2010 to 2020 we found that season length does not correlate with average days hunted, harvest or hunter days. The average hunter hunted for 5.04 days over that period, regardless if the season was 10 days or 14 days. Shorter seasons do create more hunter crowding by forcing those hunters to participate in the hunt over a shorter time instead of spreading out in time when the season is longer. This year will be very limited in time since we will not offer a full weekend of hunting opportunity. Hunting seasons offered for buck only mule deer in this area have no biological effect on the herd.

The buck:doe ratio has rebounded from a low in 2020. It is now back up above the objective range at 30:100 indicating that hunter opportunity should be increased. As buck ratios are above the objective range we should remove the point restrictions to avoid any negative genetic influences and to provide more hunter harvest opportunity. Unfortunately, we are having another negative weather event during the winter of 2022/23 and it will not be possible to increase hunter opportunity at this time. We should push to remove the antler point restriction and lengthen the season when weather becomes more favorable and deer numbers rebound. Antlerless harvest in this herd was completely eliminated as youth any deer hunting was eliminated which historically does not result in a female harvest level of any biological significance.

The Region K nonresident license quota is at an all time low. We lowered the quota several times in recent years and again in 2021 to 250. There is a history in this herd of significant public complaints about nonresident hunter numbers. It is very close to Utah and most nonresident hunters come from the Salt Lake City area. When they hunt here, they come repeatedly throughout the season. They often bring large family groups and leave their camps for the entire deer season. This is unpopular with local hunters. In recent years several private ranches that allowed public hunting through the WGFD PLPW program have become leased by outfitters. This has reduced the amount of land we have for hunters to recreate in the herd unit. This, along with severe impacts to the deer herd from recent bad winters led us to recommend reducing the nonresident quota.

2.) Chronic Wasting Disease Management: This is a Tier 1 surveillance herd that was prioritized for CWD sampling in 2019. Prevalence estimates and sample sizes are presented below (Table1). No positives were found. For this surveillance period, we were not able to obtain the sampling goal of 200 adult male mule deer as male harvest was reduced due to more conservative season limitations, which resulted in a wide 95% confidence interval. Sample distribution of mature males was reasonable. Historically, the herd has had two positive test results from targeted samples both taken within the city limits of Green River on the extreme eastern edge of the herd unit. To date, no CWD management actions have occurred in this herd unit.

Table 1. CWD prevalence for hunter-harvested mule deer in the Uinta Mule Deer Herd, 2019 - 2021.

Year(s)	Percent CWD-Positive and (*n*) – *Hunter Harvest Only*		
	Adult Males (CI = 95%)	Yearling Males	Adult Females
2019-2021	**0% (0-3.1%, n=117)**	0% (12)	0% (17)

3.) Winter Severity: This herd commonly experiences difficult winter conditions for deer survival. Winter ranges are at high elevations and severe winters can be very detrimental to deer populations. This usually occurs once every three to five years. Prior to the 2016/17 winter, conditions were mild for five straight winters in this herd unit creating a situation where fawn and adult survival was high and populations were able to grow even with relatively low fawn production. The winter of 2016/17 was severe in most areas and the population in the western part of the herd unit declined drastically due to it. A mild winter followed in 2017/18. This helped the herd rebound slightly but in 2018/19 we had another very difficult winter. Then in the winter of 2019/20 we again had very tough winter conditions. Mortality surveys at the LeRoy winter range complex in spring showed high fawn and adult doe mortality over this period. It was also verified in very poor yearling buck:doe ratios in the years following the bad winters. This was very harmful to the population to have three tough winters in the span of four years. Now in 2023, after two mild winters where the deer hared was growing, we are again suffering a very severe winter and deer mortality is already high. In reviewing JCR data, I cannot find a time with four bad deer survival winters over seven years. This has been an unprecedented impact to deer numbers and buck recruitment in this herd.

4.) Antler Point Restrictions: Antler point restrictions have been used in Hunt Area 132 since 2007, and a 3-point or more antler restriction has been in place in the entire herd unit since 2014. This has been at the request of a highly vocal segment of the public. Other members of the public oppose the restriction. The use of antler point restrictions for limited periods can be warranted when an area is below the buck:doe ratio objective or in areas where buck security cover and fawn productivity is lacking. However, many portions of this herd unit do not typically require this type of management based on historically observed buck ratios. Once weather conditions improve for deer survival we need to remove the point restrictions to avoid negative genetic influences and to provide more hunter harvest opportunity.

5.) Population Modeling: In 2021, WGFD managers began using PopR integrated population models (IPM) to estimate population indices for mule deer and pronghorn. The 2022 postseason population estimate for this herd unit from the PopR IPM was 6,087 (CL = 5,533-6,712). This is a significant difference from the previous spreadsheet model estimates that averaged 12,417 over the previous 5 year period. The IPM estimate is also inconsistent with the 2021 PopR IPM estimate of 7,915 (CL = 6,716-9,150) mule deer. This is concerning since the population had grown noticeably from 2021 to 2022. There is also inconsistency on estimates between comparable model runs. We also see high Rhat values and inability for the model to come to convergence. For these reasons, local managers feel that the new IPM model is not functioning well for this herd. I hope that in the future we will be able to solve these issues. The addition of a sightability population estimate in the next few years may help.

2022 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2022 - 5/31/2023

HERD: MD424 - SOUTH ROCK SPRINGS

HUNT AREAS: 101-102

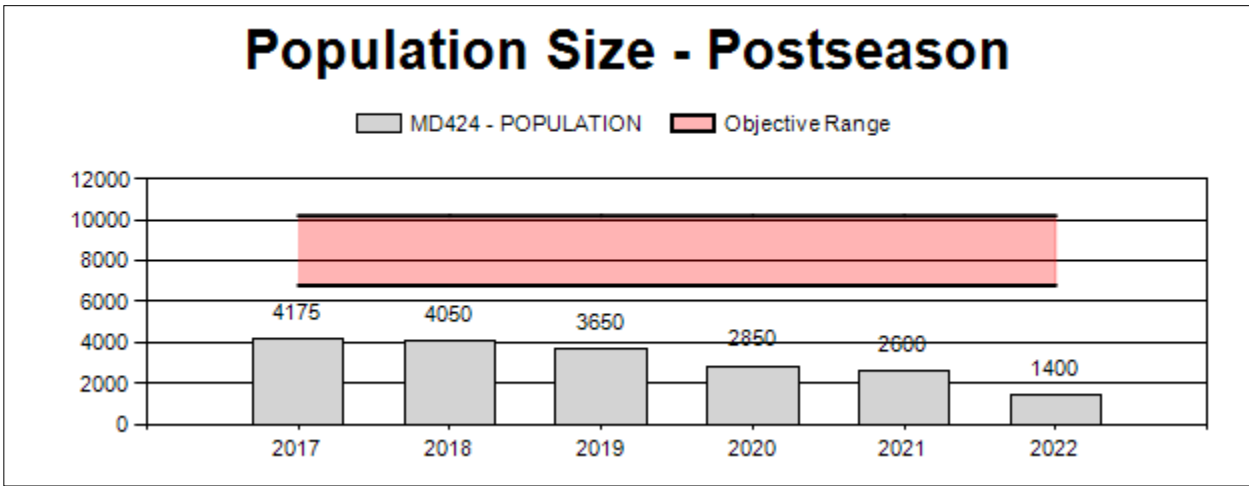
PREPARED BY: PATRICK BURKE

	2017 - 2021 Average	2022	2023 Proposed
Population:	3,465	1,400	1,300
Harvest:	196	137	145
Hunters:	237	168	170
Hunter Success:	83%	82%	85%
Active Licenses:	237	168	170
Active License Success:	83%	82%	85 %
Recreation Days:	1,444	1,265	1,200
Days Per Animal:	7.4	9.2	8.3
Males per 100 Females	30	30	
Juveniles per 100 Females	43	61	

Population Objective (± 20%) :	8500 (6800 - 10200)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-83.5%
Number of years population has been + or - objective in recent trend:	10
Model Date:	2/21/2023

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:	26%	35%
Proposed change in post-season population:	0%	-4%



2023 Hunting Seasons
South Rock Springs Mule Deer (MD424)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
101	1	Sept. 1	Sept. 30	Oct. 15	Oct. 31	25	Antlered deer
102	1	Sept. 1	Sept. 30	Oct. 15	Oct. 31	150	Any deer

2022 Hunter Satisfaction: 70.2% Satisfied, 14.3% Neutral, 15.5% Dissatisfied

2023 Management Summary

1) Hunting Season Evaluation:

The 2023 hunting season for the South Rock Springs mule deer herd maintained the same conservative seasons for both hunt areas in the herd unit that was seen in 2022. Starting in 2020, a lower number of licenses was offered in the herd unit due to observed fawn ratios in 2016, 2018, and 2019 that were all significantly below the normal fawn ratio for this population. Those years of lower fawn recruitment resulted in the pool of bucks hunters typically select for being reduced beginning in 2020, and continuing for several years. Buck fawns born during the first year that those low fawn ratios were observed would have become 5 year-olds in 2021, which is a known age class that is selected for based on hunter submitted tooth samples. While observed fawn ratios for the last several years have been below what is probably needed to maintain the population, the observed fawn ratio in 2022 was 61 fawns per 100 does, which is a drastic improvement over recent observed ratios. This is the highest fawn ratio that has been observed in 10 years, and gives optimism for this herd being able to regain some of the ground it's lost over the last decade.

While the 2022-2023 winter was significantly above average with above average snow fall and below average temperatures across most of western Wyoming, it appears that the South Rock Springs herd did not experience the same level of winter mortality that was seen in some other western Wyoming mule deer herds.

Observed buck ratios following the 2020 and 2021 hunting seasons declined considerably from what was observed in the years prior, dipping below the minimum threshold of 30 bucks per 100 does for a special management herd. The observed buck to doe ratio in 2022 did however climb back to the minimum special management buck ratio of 30 bucks per 100 does. While overall deer numbers may be down and buck ratios are not as high as what's desired by the public; hunters were still able to select for older age class bucks, with the average age of harvested bucks based on hunter submitted tooth samples in 2022 being 5.7 years old, which is the highest average age that has been observed in this herd.

2) Management Objective Review:

In 2022 managers reviewed the past five year's population, weather and habitat data, as well as public desires and determined that the current management objective for the South Rock Springs mule deer herd is still appropriate and should be retained.

3) Chronic Wasting Disease Monitoring & Management:

The South Rock Springs mule deer herd is a Tier 3 surveillance herd. To date, no meaningful CWD prevalence data is available within this herd unit and no CWD management actions have occurred. This herd has not been prioritized for CWD surveillance because of the herd's small size and low number of licenses issued in the herd unit, it would not be possible to obtain an adequate number of samples in the herd to determine CWD prevalence.

4) Population Modeling:

In 2021, WGFD managers began using PopR integrated population models (IPM) to estimate population indices for mule deer and pronghorn. The bio-year 2022 postseason population estimate for this herd unit was 1,350 (CL = 1,000 – 1,900) mule deer. This model appears to be drastically underestimating the number of deer actually on the landscape, and should be viewed with skepticism when making management decisions. For example in 2020 over 1,400 deer were physically observed in just HA102 during postseason classification flights, however the model estimates the total postseason population for the entire herd unit to be less than 1,550 deer that year. The model appears to be responding to reductions in the number of licenses offered, reducing the estimated population size after cuts are made in the number of licenses offered. Several other metrics also suggest that the model is having a hard time fitting the observed data, such as the model often has unrealistically high or low fawn survival estimates. Also, the model estimates that approximately 40% of the buck population is harvest annually, which is not supported by the average age of harvested bucks, which was 5.7 years old in 2022. If 40% of the bucks over 1 year old were being harvested annually, it is unlikely that the average age of harvested bucks would be anywhere near that high.

2022 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2022 - 5/31/2023

HERD: MD427 - BAGGS

HUNT AREAS: 82, 84, 100 | PREPARED BY: PHILIP DAMM

	2017 - 2021 Average	2022	2023 Proposed
Population:	20,521	16,201	19,000
Harvest:	1,494	1,024	950
Hunters:	3,022	2,455	2,400
Hunter Success:	49%	42%	40 %
Active Licenses:	3,097	2,485	2,450
Active License Success:	48%	41%	39 %
Recreation Days:	15,336	13,624	14,000
Days Per Animal:	10.3	13.3	14.7
Males per 100 Females	27	27	
Juveniles per 100 Females	62	65	

Population Objective (± 20%) : 19000 (15200 - 22800)

Management Strategy: Special

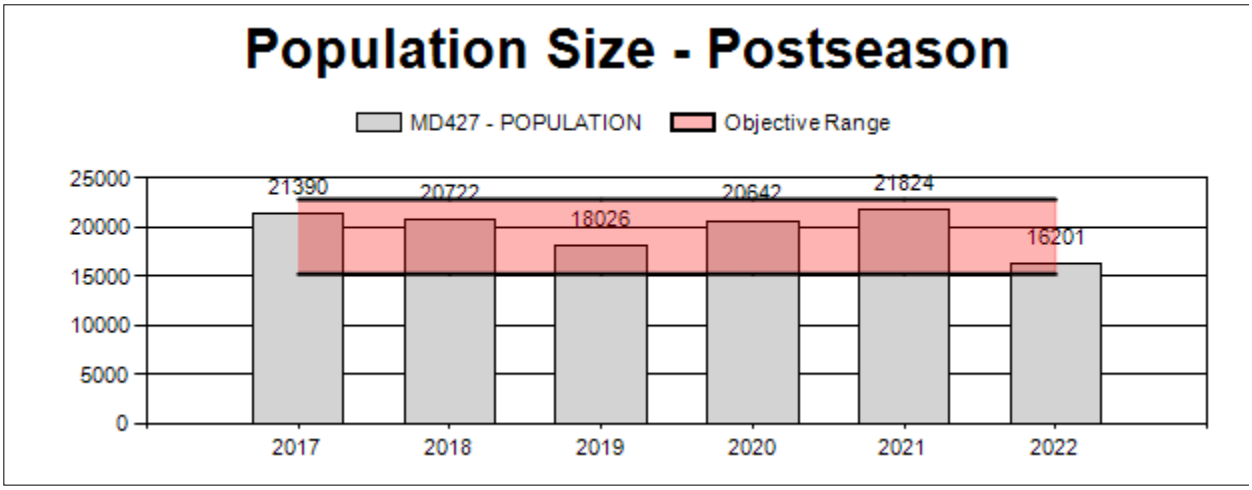
Percent population is above (+) or below (-) objective: -14.7%

Number of years population has been + or - objective in recent trend: 1

Model Date: 3/1/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	1%	1%
Males ≥ 1 year old:	29%	25%
Proposed change in post-season population:	12%	10%



2023 Hunting Seasons
Baggs Mule Deer Herd Unit (MD427)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
82		Sep. 1	Sep. 30	Oct. 1	Oct. 5	General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
82		Sep. 1	Sep. 30	Oct. 1	Oct. 7	General youth only	Antlered mule deer or any white-tailed deer
82, 100	8	Sep. 1	Sep. 30	Nov. 1	Jan. 15	25	Doe or fawn white-tailed deer valid on private land
84	1	Sep. 1	Sep. 30	Oct. 1	Oct. 14	25	Antlered mule deer or any white-tailed deer
100		Sep. 1	Sep. 30	Oct. 1	Oct. 5	General	Antlered mule deer four (4) points or more on either antler or any white-tailed deer
100		Sep. 1	Sep. 30	Oct. 1	Oct. 7	General youth license	Antlered mule deer or any white-tailed deer

2023 Region W nonresident quota: 600 licenses

2022 Hunter Satisfaction: 48% Satisfied, 25% Neutral, 27% Dissatisfied

2022 Management Summary

1.) Hunting Season Evaluation: Not surprisingly with the 3 point antler restriction (APR) in HA82, buck harvest in 2022 increased over 2021 and its 4 point antler restriction. However, harvest was still considerably lower than averages due to warm, dry weather throughout the entire season and perceived lack of opportunity from general season hunters because of the APR. Improvements to satisfaction followed increases in harvest with almost equal numbers being satisfied as neutral or dissatisfied. Interestingly, participation in the hunt did not increase like it did in 2018 with the relaxing of the APR. HA100 hunters observed a 4 point antler restriction, and as such with very low deer densities and no migration inducing weather, harvest was very low. Although, several mature Class III bucks were still harvested out of that area. HA84 hunters continued good success and were on average more satisfied than general season hunters; although, mature Class III bucks continue to be more difficult to find relative to past years.

The buck ratio observed in the December 2022 classification flight (27 bucks per 100 does) was very similar to the five-year average and the same as 2021. Interestingly, classifications resulting from underpass trail cameras indicated a much higher ratio of 37. Proportions of Class III bucks increased since the 2018 hunt and classification (4% in 2018 to 12% in 2022). This year's proportion of Class III's (12%) was greater than all previous years outside of 2016 and 2017 (both

15%), indicating strong recruitment into older age classes. However, hunter, landowner, and outfitter comments generally still indicated they observed a reduction in the numbers of mature (Class II and III) bucks. Comments heard throughout the season were disparate in terms of overall population size and status but many indicated they observed good numbers of does and fawns. The lower Class II/III ratios over the last couple years were primarily caused by adult bucks becoming vulnerable to harvest in 2018 due to two early-October snowstorms, and less so as a result of winter severity in the years following. However, lower post-winter (2018 and 2019) fawn recruitment into the buck population did play some role as well.

Counter to the recent drought trend, growing season (April-June) 2022 precipitation was slightly below average, while later season (May-July) precipitation was average. This likely led to better summer range forage and presumably better body condition for adults and overall larger fawns going into winter. Both of these precipitation metrics have been well below average in 3 of the last 5 years. However, snowpack across Baggs mule deer herd winter ranges (including those in Colorado) were well above normal during winter 2022-23, with upwards of around 2 additional feet for much of the winter (Figure 1). With a number of considerable thawing and re-freezing cycles having occurred, several crusts in this snowpack formed. This snowpack and crusts led to extremely difficult movement and foraging conditions across the entire herd. Past years with higher winter severity when GPS collars were deployed on doe mule deer resulted in about 75% annual survival rates (~90% in years with "normal" winters). Although no collars are currently deployed, managers expected this lower level of survival or possibly worse for the 2022-23 winter. Post-winter ground and trail camera classification would help determine the degree of mortality through the winter.

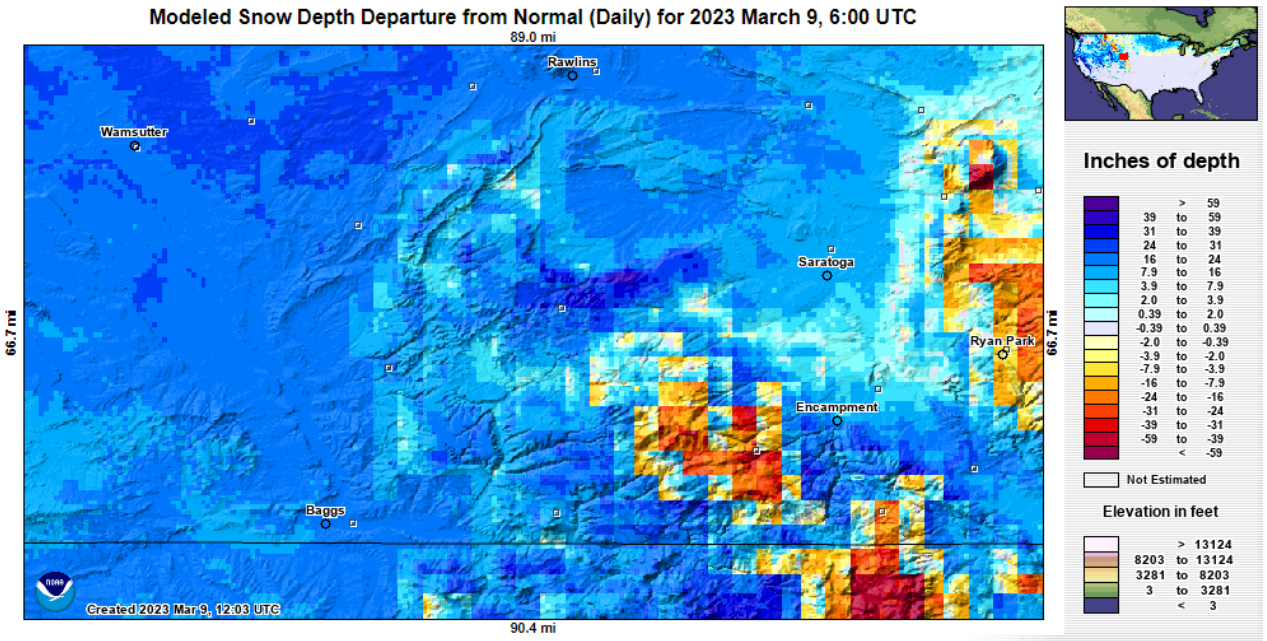


Figure 1. Modeled snow depth departure from normal as of March 9, 2023.

A new population model (PopR integrated population model) was implemented in 2022 for the Baggs herd. Four biologically plausible combinations of survival types were examined for this effort. The combination that was selected (variable reproduction, juvenile survival, and adult

survival) performed better than for some other herds and species, however issues were still observed, including unfavorable model diagnostics (even the model didn't think it performed well), odd trends in estimated juvenile survival, and higher populations than most years back to 2013. This combination was selected out of the four that were attempted due to it most closely approximated the trend of the previously used spreadsheet model. However, while the selected combination seemed to follow slope changes in the population estimates decently, it did not approximate the magnitudes the same as the spreadsheet model. This combination was also the most complex, requiring the most data to perform well, which is a tradeoff in any modeling exercise and probably led to unfavorable model diagnostics. It is unknown at the time of the writing of this document the best method for selecting the combination of variables to use. With those caveats stated, the model estimated a post-hunt population of 16,201 (95% CI from 13,568-21,084), which was in the low end of the objective range. Due to the change to the new modeling method, the population size graph's presentation is probably misleading. However due to winter severity during 2022-23, which the model could not account for with the available data, the apparent decrease was probably valid and perhaps larger in reality. In summary, although most readers of this document are unlikely to examine the text thoroughly and will likely only just look at the table and graph, it would be unwise to put much if any emphasis on these estimates or their relationship to the population objective at this time.

With buck ratios having stagnated in 2022 and still under objective, along with above average winter severity, managers proposed to maintain the antler point restriction for HA82 for the 2023 season. The four point or better restriction would still apply for HA100 due to long term drought and low productivity of deer in that HA. Though not a perfect solution, APRs have been used in this herd in the past to increase buck ratios by relieving pressure on yearlings and other younger bucks. However, the downside to the APR was realized in 2018 when early migrations led to high harvest of mature bucks, or "high grading" the buck population. Weather issues aside, if left in regulation too long, APRs tend to result in degrading overall antler quality anyway. In addition to the continued APRs for 2023, managers initially proposed to shorten the season by two days; although, harvest was likely to only decrease by around 5% as a result. On average in the past, about 90% of harvest occured by the end of the second weekend of the hunt. Providing two weekends wasn't necessary for 2023; however, the first "weekend" only included Sunday. Managers initially felt including only the first "weekend" in 2023 as a method to decrease harvest would have limited opportunity for resident hunters too much. Finally, the additional 2 days of youth-only hunting in both HAs 82 and 100 continued to provide great opportunity at a diminutive cost to moving the herd toward its buck ratio objective. The quota in HA84, with the already lower than desirable harvested buck quality, was proposed to be reduced from 50 to 25 licenses due to winter severity and the need to help increase buck ratios in the Bagg herd.

Final Evaluation

After public comments and political pressure from certain stakeholder groups, the governor held a town hall meeting in Rawlins to address winter severity in the area. As a result of these inputs and continued winter severity, the HA82 season was proposed to be shortened considerably more to October 1-5. Non-resident Region W licenses were proposed to be reduced from 750 to 600, which would likely lead in 2023 to the lowest non-resident participation in the hunt since 1985. These limitations would certainly reduce total buck harvest with only 5 days to hunt and only 1

weekend day. This reduction would not function to increase the mule deer herd significantly, as only does produce fawns and only a nominal number of bucks are required to breed all does.

2.) Mule Deer Initiative Habitat Information: In 2015, Department personnel initiated the Rapid Habitat Assessment (RHA) methodology to survey important mule deer habitats. This method strives to capture large-scale habitat quality metrics to better understand how the habitat is providing for the current population of mule deer. The overall result of this effort is to provide a standardized habitat component for discussions about how mule deer objectives ought to be adjusted based on the general concept of carrying capacity. Managers for the Baggs herd concluded their first 5-year analysis of Rapid Habitat Assessments (RHAs) in 2019, which can be found in that year's JCR. Assessment results from 2020-2024 will be able to be compared to this analysis to determine the trajectory of Baggs herd habitats. In 2022, WGFD personnel surveyed fourteen RHAs in the Baggs herd unit, totaling 2,674 acres. For the Baggs mule deer herd unit, WGFD personnel completed four rangeland assessments (2,445 acres), six riparian assessments (87 acres), and four aspen assessments (142 acres).

Unfortunately, the timely growing season precipitation coupled with a rainy fall of 2021 also led to tremendous cheatgrass growth with multiple germinations in 2022. Plans were underway to continue to address cheatgrass invasions, which mostly affected winter and transition ranges of the Baggs herd.

Significant Events

The Little Snake River Conservation District, BLM, Carbon County Weed and Pest, and WGFD continue to plan and implement habitat projects across the herd unit. There were no large wildfires within the herd unit in 2022. The Snake fire, which burned in 2016, continues to recover and provide good early successional habitat for mule deer. The Landscape Vegetation Analysis (LaVA) Project was developed in response to changed forest vegetation conditions caused by the bark beetle epidemic and other forest health issues. The Final Record of Decision was signed in August 2020, authorizing the start of project implementation. Under the Final Record of Decision, the LaVA Project allows for up to 288,000 acres to be treated over the next 15 years. WGFD continues to work with the USFS and other federal, state, and local cooperators to plan and implement projects within the LaVA boundary.

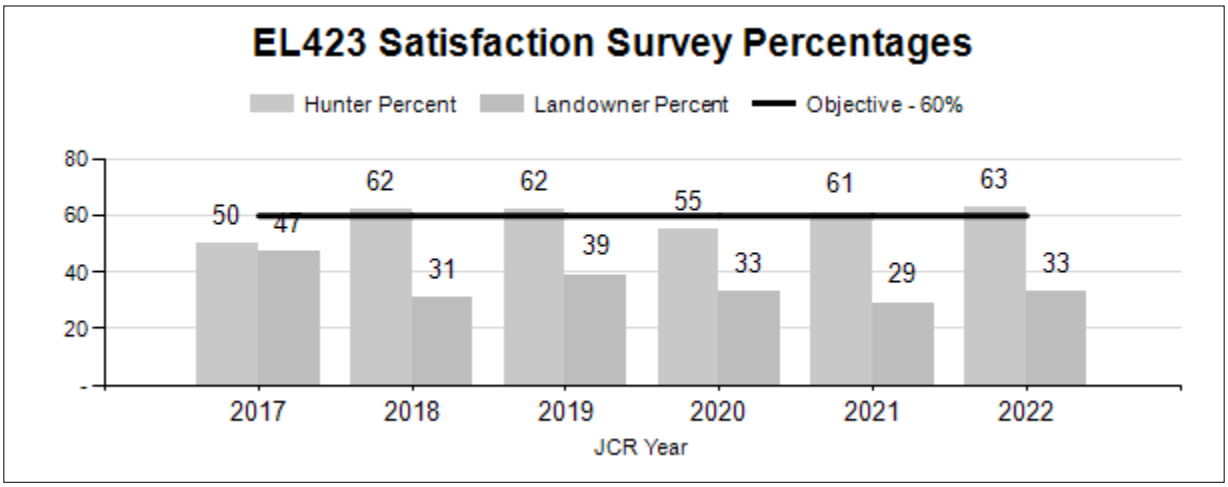
3.) Chronic Wasting Disease Monitoring & Management: The Baggs Mule Deer Herd is a Tier 1 surveillance herd and is prioritized for CWD sampling in 2023. This herd was not sampled for a CWD prevalence estimate in 2022, but mule deer prevalence was estimated in 2018 at 8.4% with 22 positives out of a sample of 263. This estimate was similar to or perhaps slightly higher than the pooled estimate from 2014-2017. This estimate was quite a bit lower than the pooled estimate from 2020-2022 (16.7%; n=78). Pooled estimates were likely biased, since only mule deer from hunters who desired to know the CWD status of their harvest were tested. Positive harvested mule deer have originated from nearly all portions of the unit where deer occur during hunting seasons. To date, no meaningful CWD management actions have occurred in this herd unit.

2022 - JCR Evaluation Form

SPECIES: Elk
PERIOD: 6/1/2022 - 5/31/2023
HERD: EL423 - UINTA
HUNT AREAS: 106-107
PREPARED BY: JEFF SHORT

	2017 - 2021 Average	2022	2023 Proposed
Hunter Satisfaction Percent	58%	63%	60%
Landowner Satisfaction Percent	36%	33%	60%
Harvest:	561	776	800
Hunters:	1,614	1,712	1,800
Hunter Success:	35%	45%	44 %
Active Licenses:	1,688	1,831	1,850
Active License Success:	33%	42%	43 %
Recreation Days:	11,420	11,604	12,000
Days Per Animal:	20.4	15.0	15
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	-12%
Number of years population has been + or - objective in recent trend:	8



2023 HUNTING SEASON

Uinta Herd Unit (EL423)

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
106	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
106	Gen			Nov. 1	Nov. 14		Antlerless elk
106	1	Sept. 1	Sept. 30	Nov. 15	Jan. 31	50	Any elk valid west of the Black's Fork River or north of Wyoming Highway 410; also valid in Area 105 west of the Bear River
106	4	Sept. 1	Sept. 30	Oct. 15	Dec. 31	150	Antlerless elk
106	4			Jan. 1	Jan. 31		Antlerless elk valid on private land or west of the Black's Fork River or north of Wyoming Highway 410
106	7			Aug. 15	Jan. 31	350	Cow or calf valid on private land or west of the Black's Fork River or north of Wyoming Highway 410
107	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
107	Gen			Nov. 1	Nov. 14		Antlerless elk
107	4	Sept. 1	Sept. 30	Oct. 15	Dec. 31	200	Antlerless elk
107	4			Jan. 1	Jan. 31		Antlerless elk valid off national forest within the Henry's Fork River drainage
107	7			Aug. 15	Aug. 31	50	Cow or calf valid in Sweetwater County
107	7	Sept. 1	Sept. 30	Dec. 15	Jan. 31		Cow or calf valid off national forest within the Henry's Fork River drainage

2022 Hunter Satisfaction: 64.1% Satisfied, 22.4% Neutral, 13.5% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation: In the eighth year of a satisfaction based objective, we are not meeting the landowner satisfaction objective. We are meeting the hunter satisfaction objective. Hunter satisfaction is highly correlated to hunter harvest success, which correlates to weather conditions affecting migration and elk vulnerability in the fall. Even though landowner satisfaction is below objective, the 2022 landowner survey shows 66.7% of landowners are either satisfied with the current season structure or would like us to be more conservative. We are

meeting the secondary objective with 91% of the bull harvest being branch-antlered bulls. We have two proposed changes for 2023. They are to increase the 106 and 107 type 4 licenses numbers by 50 on each hunt. In the future we would like to have more private land open to cow elk hunting. The primary reason that this herd is over objective is that closed and outfitted private lands are creating sanctuaries for elk to evade harvest during cow hunts.

Hunters would like to see more elk in accessible public land areas in HA 106 and 107, so late antlerless hunts are designed to avoid these areas. For 2023 we will continue liberal hunt timing and license allocation to maximize elk harvest and target elk causing damage problems. It appears that these season structures are reducing this elk herd. The August 15 – 31 portion of the area 106 and 107 type 7 hunts is to address specific damage issues on private lands.

The HA 107 antlerless licenses are used to maintain pressure on elk on the Wyoming side of the state boundary during a hunt on the Utah side. Damage complaints on the HA 107 side of the herd unit are typically less even during severe winters. Some ranchers complain about elk numbers. We will maintain license quotas in 2023 to address those complaints.

The Area 106 Type 1 hunt had 90% hunter success in 2022. Over the last five years, the hunt has had high success. Hunter success is influenced yearly by winter severity. The hunt is in addition to general season hunts in September, October and November so significant elk hunting opportunity is currently offered. This hunt is in place to help deal with late damage where Utah elk are migrating into Wyoming and damaging stored hay. The area is mostly private land and hunters have very limited places to hunt.

2) Chronic Wasting Disease Management: This is not a tiered surveillance herd. To date, no meaningful CWD prevalence data is available within this herd unit and no CWD management actions have occurred. This herd has not been prioritized for CWD surveillance.

3.) Aerial Counts: Elk surveys are flown in conjunction with Utah DWR, most recently in January of 2019. Utah funds the surveys and we participate. No classification data is available with the way Utah conducts their surveys. The count numbers in Wyoming vary drastically with flight funds and weather conditions. High count numbers are typically the result of severe winter weather and higher numbers of elk migration into Wyoming. The 2019 count showed a decrease in elk numbers. This is likely correct since both Utah and Wyoming have been running liberal hunting seasons to increase cow elk harvest.

4.) Damage Concerns: This is an interstate herd shared with Utah. There are elk that summer in Wyoming but many elk that summer in the Uinta Mountains in Utah come to Wyoming to winter. Limited public land winter range is an issue for this herd. With winter range in short supply, conflict with agriculture producers becomes an issue. Damage complaints occur on bad winters. Summer damage also occurs on crops in limited areas. Significant efforts have been made by field personnel to alleviate these problems. The strategy in this herd unit has been to minimize elk damage problems through harvest and hunting season structure.

2022 - JCR Evaluation Form

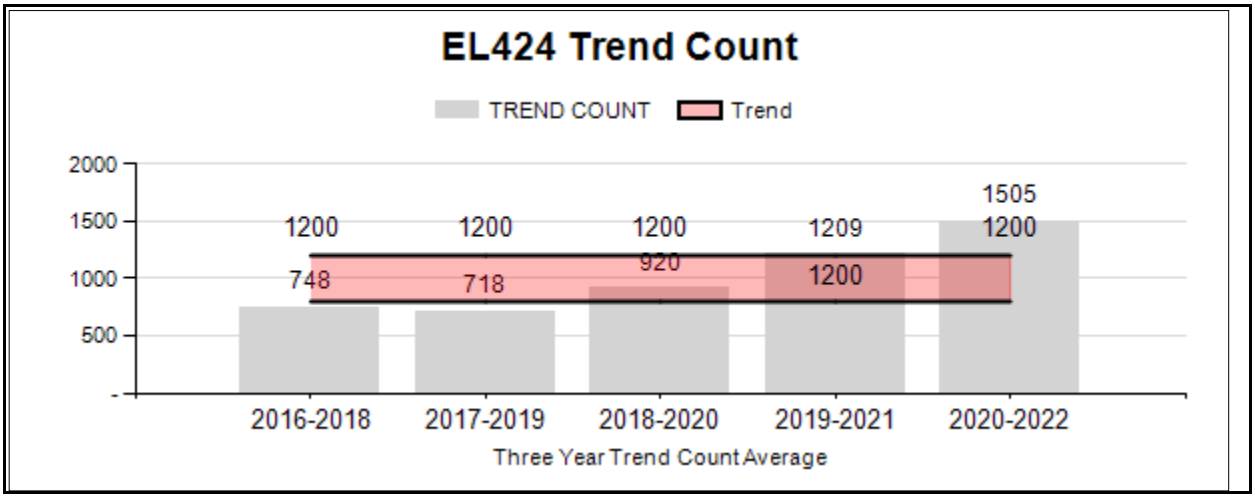
SPECIES: Elk
PERIOD: 6/1/2022 - 5/31/2023
HERD: EL424 - SOUTH ROCK SPRINGS
HUNT AREAS: 30-32
PREPARED BY: PATRICK BURKE

	2017 - 2021 Average	2022	2023 Proposed
Trend Count:	1,036	1,486	1,000
Harvest:	301	357	350
Hunters:	421	526	500
Hunter Success:	71%	68%	70 %
Active Licenses:	421	526	500
Active License Success	71%	68%	70 %
Recreation Days:	3,323	4,179	4,000
Days Per Animal:	11.0	11.7	11.4
Males per 100 Females:	31	28	
Juveniles per 100 Females	41	39	

Trend Based Objective (± 20%)	1,000 (800 - 1200)
Management Strategy:	Special
Percent population is above (+) or (-) objective:	49%
Number of years population has been + or - objective in recent trend:	1

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%
Total:	0%	0%
Proposed change in post-season population:	0%	0%



2023 Hunting Seasons
South Rock Springs Elk Herd (EL424)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
30	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	50	Any elk
30	4	Sept. 1	Sept. 30	Oct. 7	Nov. 15	100	Antlerless elk
31	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	75	Any elk
31	4	Sept. 1	Sept. 30	Oct. 7	Nov. 15	200	Antlerless elk
32	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	50	Any elk
32	4	Sept. 1	Sept. 30	Oct. 7	Dec. 31	150	Antlerless elk
32	9	Sept. 1	Sept. 30			25	Antlerless elk, archery only

2022 Hunter Satisfaction: 79.6% Satisfied, 13.2% Neutral, 7.2% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation:

The 2023 hunting season saw few changes in license numbers across the South Rock Spring elk herd unit, with the only change made being an increase in the HA32 Type 4 license numbers. The change in the number of HA32 Type 4 licenses was made to help target elk living near the Colorado and Utah state lines, which have been driving an increase in the number of elk counted during December classification flights during the last several years.

As no dedicated mid-winter trend count flight has been conducted in recent years, the number of elk classified during the December classification flight has been used as a surrogate trend count number. A total of 1,486 elk were classified during the December 2022 flight, with no elk classified in HA30, 374 elk were observed in HA31, and 1,112 elk being seen in HA32. The number of elk observed during the last three post-season classification flights has been significantly higher than the 600 to 800 elk that are typically seen during these flights. The increase in the number of elk observed in the last three years can be attributed to large groups of several hundred elk encountered in the southern portion of HA32 near the state line. This group of elk residing in the tristate region regularly moves between Colorado, Utah, and Wyoming, and was a large part of the reason that a mid-winter trend count objective was chosen for this herd, as these elk are only sometimes in the state and are rarely in Wyoming during hunting season. It is important to note that the three year trend count average for this herd has been increasing since the 2014-2016 average, but that this increase can be attributed to an increased sampling effort and more regular flights, rather than necessarily an increase in the actual number of elk on the ground.

Given the number of elk seen from 2020 to 2022, the three year trend count average for this herd moved to 1,500 elk, which is above the upper end of its objective of 800 to 1200

elk. Because of this, Type 4 licenses were increased for HA32 in 2023 along with retaining the longer season to hopefully target this group of elk that are typically not present in Wyoming until later in the year, and that are accounting for the increase in trend count numbers. The Type 4 hunter success rate in 2022 of 62% suggests that running the Type 4 licenses until December 31 did help with harvesting additional cows, as typically harvest success rates in HA32 are often in the 30 to 50% range.

Based on hunter submitted tooth samples, the average age of harvested bulls in 2022 was 5.7 years old, which is close to the 10 average for this herd of 5.8 years old. The observed bull ratio in 2022 was only 28 bulls per 100 cows, which is below the special management guidelines of 30 to 40 bulls per 100 cows post season. This was the fourth year in a row that observed bull to cow ratios have been at the minimum of, or below the guidelines for a special management herd.

The below objective bull ratios, increased effort, and hunter complaints suggest that Type 1 licenses in this herd should not be increased. Given the open nature of the landscape, abundance of public lands and roads where this elk herd lives, as well as the public's willingness to put in as much effort as it takes to harvest an elk when they draw a license in this area; a goal of only 60% harvest success is probably not realistic for this herd unit, and would probably not be accepted by the public for this highly sought after special management herd.

2.) Management Objective Review:

In 2022 managers reviewed the past five year's population, weather and habitat data, as well as public desires and determined that the current management objective for the South Rock Springs elk herd is still appropriate and should be maintained.

3.) Chronic Wasting Disease Monitoring & Management:

The South Rock Springs elk herd is a Tier 3 surveillance herd. To date, no meaningful CWD prevalence data is available within this herd unit and no CWD management actions have occurred. This herd has not been prioritized for CWD surveillance because of the relatively small size of this herd obtaining the necessary sample size to accurately determine prevalence would be unlikely.

2022 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2022 - 5/31/2023

HERD: EL425 - SIERRA MADRE

HUNT AREAS: 13, 15, 21, 108, 130

PREPARED BY: PHILIP DAMM

	2017 - 2021 Average	2022	2023 Proposed
Trend Count:	7,604	4,352	5,000
Harvest:	1,988	2,345	2,500
Hunters:	5,153	5,419	5,500
Hunter Success:	39%	43%	45 %
Active Licenses:	5,387	5,761	5,700
Active License Success	37%	41%	44 %
Recreation Days:	37,279	42,241	42,000
Days Per Animal:	18.8	18.0	16.8
Males per 100 Females:	36	25	
Juveniles per 100 Females	35	38	

Trend Based Objective (± 20%)	5,000 (4000 - 6000)
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	-16.0%
Number of years population has been + or - objective in recent trend:	1

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%
Proposed change in post-season population:	0%	0%

		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
2017	9,644	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2018	0	551	572	1,123	19%	3,456	58%	1,352	23%	5,931	0	16	17	32	± 1	39	± 1	30
2019	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2020	0	22	37	59	17%	193	56%	92	27%	344	0	11	19	31	± 0	48	± 0	37
2021	0	501	513	1,073	24%	2,670	59%	797	18%	4,540	0	19	19	40	± 0	30	± 0	21
2022	0	234	256	490	16%	1,939	61%	730	23%	3,159	0	12	13	25	± 0	38	± 0	30

***Note: Since this year's February 2023 trend count was only the second since the objective's inception, and since the assessment is of a three year average, that bar graph was not included here as there is little meaningful information contained on it.

2023 Hunting Seasons
Sierra Madre Elk Herd Unit (EL425)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
13		Sep. 1	Sep. 30	Oct. 15	Oct. 31	General	Any elk
13	6	Sep. 1	Sep. 30	Oct. 1	Dec. 31	100	Cow or calf
15		Sep. 1	Sep. 30	Oct. 15	Oct. 31	General	Any elk
15	6	Sep. 1	Sep. 30	Oct. 1	Dec. 31	200	Cow or calf
12, 13, 15, 110	7			Aug. 15	Jan. 31	350	Cow or calf valid on private land
21		Sep. 1	Sep. 30	Oct. 13	Oct. 31	General youth license	Any elk
21				Oct. 15	Oct. 17	General	Antlered elk
21		Sep. 1	Sep. 30	Oct. 18	Oct. 31	General	Any elk
21				Nov. 1	Nov. 12	Gen	Antlerless
21	6	Sep. 1	Sep. 30	Oct. 15	Nov. 19	300	Cow or calf
21	7			Aug. 15	Dec. 31	25	Cow or calf valid on private land
108	1	Sep. 1	Sep. 30	Oct. 11	Oct. 31	100	Any elk
108	1	Sep. 1	Sep. 30	Nov. 1	Jan. 31		Antlerless elk
108	4	Sep. 1	Sep. 30	Oct. 11	Jan. 31	75	Antlerless elk
108	6	Sep. 1	Sep. 30	Oct. 11	Dec. 31	250	Cow or calf
108	6	Sep. 1	Sep. 30	Jan. 1	Jan. 31		Cow or calf valid west of the Twentymile Road (Carbon County Rd 605 N)
130		Sep. 1	Sep. 30	Oct. 1	Oct. 23	General	Any elk

2022 Hunter Satisfaction: 64% Satisfied, 21% Neutral, 15% Dissatisfied

2022 Management Summary

1.) Hunting Season Evaluation:

Success for the herd was similar to 2021 with a similar number of hunters participating; therefore, a very similar number of elk were harvested. Success was distributed a bit differently in 2022,

however, with additional harvest coming in HA108 due to more liberal quotas and less harvest in HA13 and HA15 due perhaps to different elk distribution. More cow elk were harvested in 2022 than any year since 2015, resulting from increased quotas in HA108 and the November General "antlerless" season in HA21. Bull harvest was likely lower due to warmer, drier hunting conditions in October and relatively normal numbers of available yearling elk compared to 2021.

The mid-winter trend count objective for Sierra Madre Elk Herd (SMEH) was assessed during early March of 2023. Elk were counted via helicopter in Hunt Areas 13, 15, 21, 108, and 130 for this trend assessment; in addition, 150 elk were counted from the ground south of Rawlins because of inability to fly there due to poor weather. In total 4,352 elk were counted in 2023. Weather conditions in late February and early March 2023 led to difficulty in flying across all areas that were covered for 2022's count. In addition, elk distribution was different than 2022 due to above average snowpacks across all elk winter ranges. Due to flight budget constraints, this was the only the second time the trend count objective was assessed since its inception in mid-2019. In 2022, 7,604 elk were counted for trend analysis. Although, 5,931 elk were classified (plus 220 unclassified) in the herd during the late February flight of 2019, with a similar area flown to the trend count in 2023. To smooth errors due to sampling bias, like those resulting from the above average snowpacks in 2023, the trend objective averages the number of counted elk over the previous three years. As such, the count in the standard trend count output table normally contained on page one of this document provided little useful information. As a result, classification numbers were presented in its place for this year. If the two year's of trend data (4,352 and 7,604) were averaged for analysis (5,978), elk were over objective in the SMEH in 2022.

The only functional change proposed to Sierra Madre elk hunting in HA21 for 2023 was the adjustment of the General "Antlerless" and Type 6 end dates. This was to balance General season hunters' antlerless opportunity with hopefully some perceived extra opportunity for Type 6 hunters and ultimately increase success on that license type, which hit a low of 38%. Type 1 license success in HA108 was high (78% in 2022; 5 year average of 77%), as was Type 4 license success in that same Hunt Area. Managers continued to have concerns with the extremely limited access in HA108 due to the true checkerboard land ownership, and would be keeping a close eye on success and comments during future seasons. An increased quota in HA108 would lead to increased trespass issues for landowners, and as such is not a palatable way to keep success at 60% for those license types. Increases were proposed to Type 6s in HA15 and the Platte Valley-wide private land only Type 7s to help address over objective trend counts and damage issues. The deletion of the HA13 and HA 15 Type 6 "Cow or calf valid off National Forest" lines did not reduce opportunity, as the end date of Dec. 31 was applied to the main Type 6 regulation lines for those Hunt Areas.

The winter of 2022-23 brought significantly deeper snowpack than normal across most of the herd's winter ranges, with upwards of around 2 additional feet for much of the winter (Figure 2). While no quantitative assessments of mortality occurred, anecdotal observations indicated at least some mortality in multiple age and sex classes of elk. Elk were consistently observed immediately along the I80 right of way, and some mortality was observed there. Most of the shrub forage across the herd was covered by snow, including crusts from several freeze-thaw cycles, which resulted in difficulty finding available browse for much of the winter. Elk were frequently restricted to drainages where the only browse available was basin big sagebrush; frequent mortalities were observed in those habitats as well. Although, elk in northern winter ranges in and around the

Atlantic Rim southwest of Rawlins fared a bit better, because the typical strong winds and also warmer temperatures kept west and south aspects more clear of snow. Palatability for reductions in elk licenses was mixed among stakeholder groups; regardless, managers felt enough opportunity was still available in the herd to support the previous year's allocation of licenses.

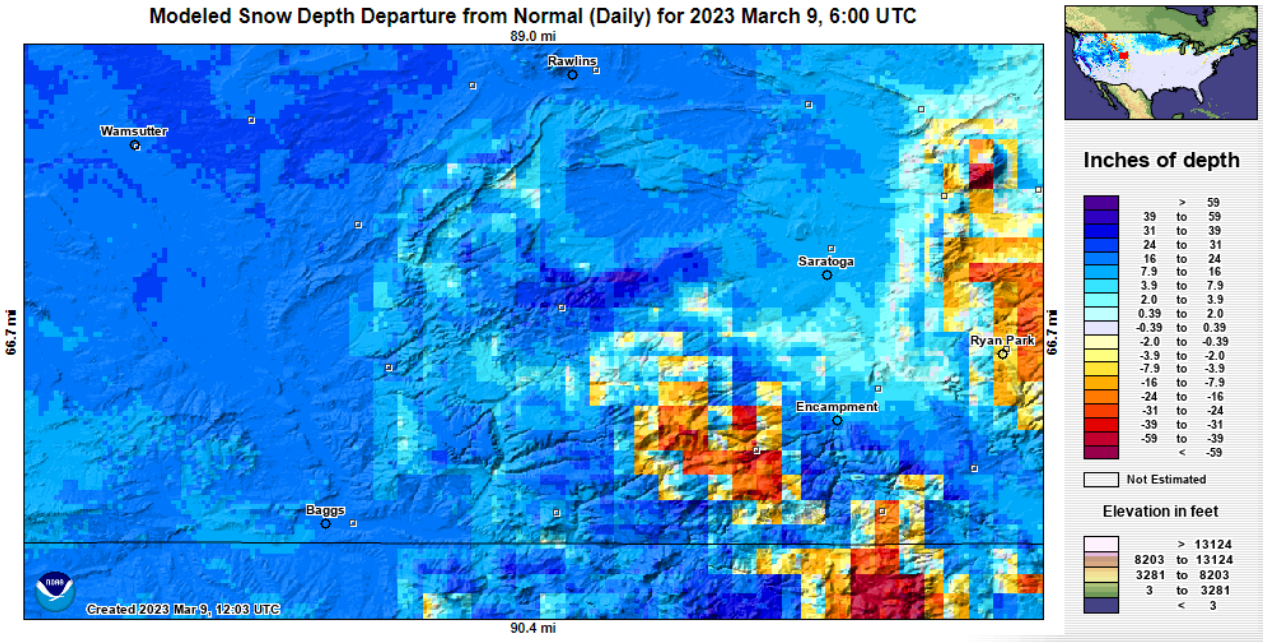


Figure 1. Modeled snow depth departure from normal as of March 9, 2023.

2.) Chronic Wasting Disease (CWD) Monitoring & Management:

In 2022, 37 harvested elk in the SMEH were incidentally sampled for CWD, with no positives detected. This herd is a Tier 2 surveillance herd that was prioritized for CWD sampling in 2021. In 2021, managers for this herd across three regions sampled 264 adult elk for CWD to estimate prevalence, and well over 300 total elk were sampled. Of those 264 adults, only one was positive for CWD for a prevalence estimate of 0.4% and a 95% confidence interval of 0.1%-2.3%. To date, no meaningful CWD management actions have occurred in this herd unit.

2022 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2022 - 5/31/2023

HERD: EL426 - STEAMBOAT

HUNT AREAS: 100

PREPARED BY: PATRICK BURKE

	2017 - 2021 Average	2022	2023 Proposed
Population:	1,710	2,000	1,350
Harvest:	605	591	600
Hunters:	767	755	750
Hunter Success:	79%	78%	80 %
Active Licenses:	784	765	750
Active License Success:	77%	77%	80 %
Recreation Days:	3,402	3,462	3,500
Days Per Animal:	5.6	5.9	5.8
Males per 100 Females	61	49	
Juveniles per 100 Females	39	22	

Population Objective (± 20%) : 1200 (960 - 1440)

Management Strategy: Special

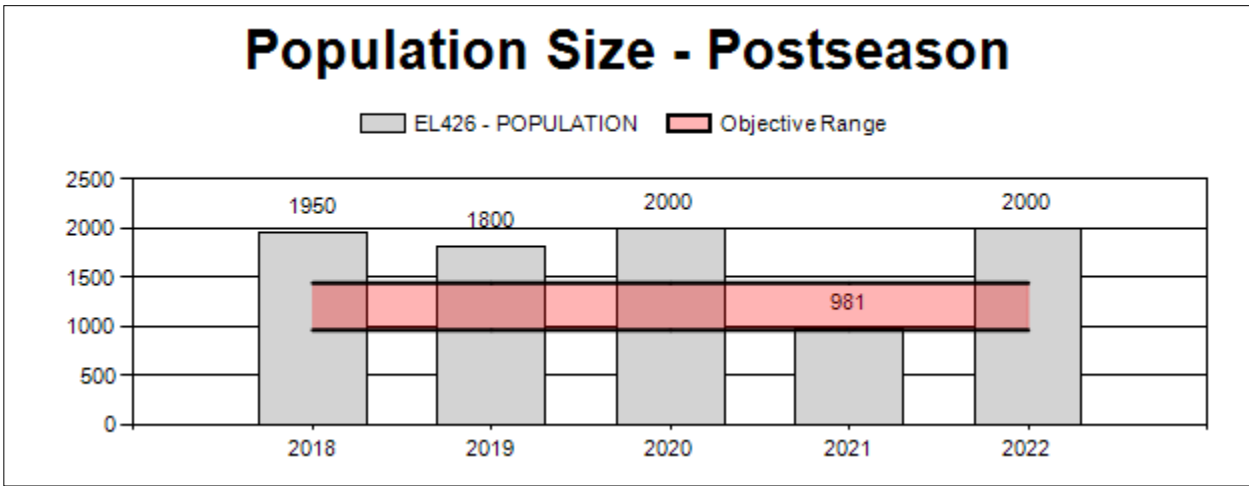
Percent population is above (+) or below (-) objective: 67%

Number of years population has been + or - objective in recent trend: 6

Model Date: 2/22/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	69%	25%
Males ≥ 1 year old:	139%	110%
Proposed change in post-season population:	-84%	-33%



2023 Hunting Seasons
Steamboat Elk Herd (EL426)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
100	1	Sept. 1	Sept. 30	Oct. 7	Oct. 31	200	Any elk
100	2			Sept. 1	Oct. 20	100	Any elk valid within two (2) miles of the Farson-Eden Irrigation Project
100	2	Sept.1	Sept. 30	Oct. 21	Nov. 10		Antlered elk four (4) points or less on either antler; any elk valid within two (2) miles of the Farson-Eden Irrigation Project
100	4	Sept. 1	Sept. 30	Oct. 14	Nov. 10	175	Antlerless elk
100	5	Sept. 1	Sept. 30	Nov. 11	Dec. 31	250	Antlerless elk
100	6	Sept. 1	Sept. 30	Oct. 15	Nov. 30	25	Cow or calf valid east of Sweetwater County Road 19, south of Sweetwater County Road 82, east of Sweetwater County Road 21, and south of Sweetwater County Road 20
100	7	Sept. 1	Sept. 30	Oct. 1	Oct. 31	100	Cow of calf valid east of U.S. Highway 191, south of Sweetwater County Road 17, and Sweetwater County Road 15, and west of Sweetwater County Road 19

2022 Hunter Satisfaction: 85.9% Satisfied, 6.0% Neutral, 8.1% Dissatisfied

2023 Management Summary

1.) Hunting Season Evaluation:

The 2023 hunting season was generally similar in structure to the 2022 season with changes made to only two of the license types offered. The first of those changes, was an increase in the number of Type 5 licenses offered, changing from 200 licenses to 250 licenses for 2023. This increase in the number of licenses offered was implemented to help speed up

the rate that this population is moved to its objective. Despite the fact that several years of increased license issuance rates since 2016 have harvested over 4,000 elk, annual counts still place this herd above its population objective. Adding back in some additional cow harvest should help reduce the size of this herd, and help limit future recruitment.

The second major change for the 2023 season was a change for the Type 2 license, moving the time that it was valid for any elk in the Farson-Eden Irrigation Project from November to the end of January, to having that license type be valid starting in September. This change was made to help better address depredation concerns on growing crops in the irrigation project area. A change was also made to the limitation that had allowed for antlered elk with five points or less on either antler to be harvested in the entire hunt area during October. For 2023, that limitation was changed to antlered elk with four points or less on either antler. During a postseason classification flight conducted in December 2022, 346 bulls were classified. Of those 346 bulls, 88 of those were spikes, 105 were smaller or "raghorn" bulls, 90 were larger bulls, but would have been legal to harvest under the five points or less limitation either because of being large five points or because of having broken tines, and 63 of the bulls classified were what would be considered mature bulls that would have not been legal under a five point or less limitation. This meant that 56% of the bulls classified were younger age class bulls, which were the bulls that were intended to be targeted by the Type 2 license. These younger age classes of bulls are the large driver behind the high bull ratios that are sometimes seen in this herd. However, 81% of the post season bulls classified would have been legal to have been harvested on the Type 2 license in 2022. Observations by field managers during the 2022 hunting season indicated that many of the Type 2 license holders selected for larger bulls, either larger five point bulls or bulls with broken tines. Changing the Type 2 limitation from five points or less on either antler to 4 points or less will help to target the younger age class bulls that are largely ignored by Type 1 license holders, which almost never harvest younger age class bulls. Excluding elk that could be identified as having been harvested in the Farson-Eden Irrigation Project area, the average age of bulls harvested on the Type 2 license, based on hunter submitted tooth samples, was 6.5 years old; indicating that the Type 2 license limitations in 2022 did not effectively target the younger age classes of bulls that make up a significant portion of the bulls in this herd.

Assuming that harvest rates remain consistent with what has been observed in the past, the 2023 season should harvest near 700 elk. This level of harvest should move this population significantly closer to its population objective, especially given the low 2022 observed calf ratio of 22 calves per 100 cows, which is the lowest calf ratio that has been observed in this herd. It is important to note that given the extremely open nature of the landscape that this herd lives in with abundant public land and high road density that this elk herd will always exhibit harvest statistics more commonly observed in pronghorn herds, than what is typically seen in elk herds. Since this elk population lives in open sagebrush country with no real refuge areas, elk are extremely visible and vulnerable to harvest. Therefore, hunter success rates in this elk population will always be above 60%.

2022 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2022 - 5/31/2023

HERD: EL428 - WEST GREEN RIVER

HUNT AREAS: 102-105 | PREPARED BY: JEFF SHORT

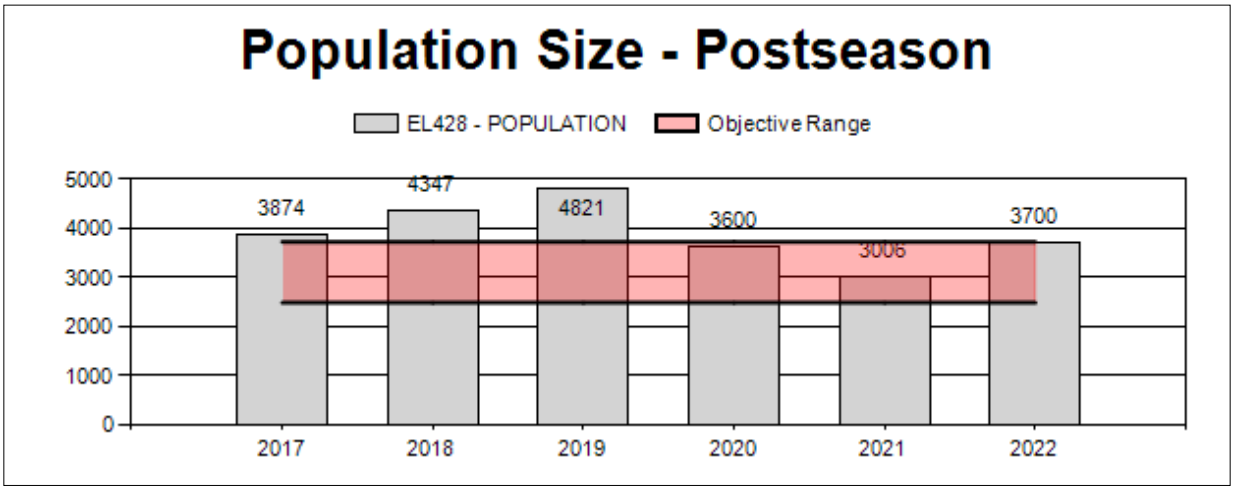
	2017 - 2021 Average	2022	2023 Proposed
Population:	3,930	3,700	3,700
Harvest:	1,227	1,626	1,750
Hunters:	3,466	3,941	4,100
Hunter Success:	35%	41%	43%
Active Licenses:	3,644	4,256	4,500
Active License Success:	34%	38%	39%
Recreation Days:	23,104	28,358	30,000
Days Per Animal:	18.8	17.4	17.1
Males per 100 Females	22	0	
Juveniles per 100 Females	32	0	

Population Objective (± 20%) : 3100 (2480 - 3720)

Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	19%
Number of years population has been + or - objective in recent trend:	200
Model Date:	None

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

	JCR Year	Proposed
Females ≥ 1 year old:	20%	20%
Males ≥ 1 year old:	30%	30%
Proposed change in post-season population:	0%	0%



2023 HUNTING SEASON

West Green River Herd Unit (EL428)

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
102	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 24		Any elk
102	Gen			Oct. 25	Nov. 14		Antlerless elk
102	6	Sept. 1	Sept. 30	Oct. 15	Nov. 30	250	Cow or calf
102	7	Sept. 1	Sept. 30	Dec. 15	Jan. 31	125	Cow or calf
103	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 24		Any elk
103	Gen			Oct. 25	Nov. 14		Antlerless elk
103	6			Aug. 15	Aug. 31	200	Cow or calf valid on or within one-quarter (1/4) mile of irrigated land
103	6	Sept. 1	Sept. 30	Oct. 15	Nov. 21		Cow or calf
103	6			Dec. 15	Jan. 31		Cow or calf
104	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 24		Any elk
104	Gen			Oct. 25	Nov. 14		Antlerless elk
104	6	Sept. 1	Sept. 30	Oct. 15	Nov. 30	400	Cow or calf, also valid in Area 105 in Lincoln County
104	7			Aug. 15	Aug. 31	200	Cow or calf valid on or within one-quarter (1/4) mile of irrigated land
104	7	Sept. 1	Sept. 30	Dec. 15	Dec. 31		Cow or calf, also valid in Area 105 in Lincoln County
104	7			Jan. 1	Jan. 31		Cow or calf valid on private land or west of U.S. Highway 30 or east of Rock Creek within the Twin Creek drainage
105	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 31		Any elk

2022 Hunter Satisfaction: 67.3% Satisfied, 21.3% Neutral, 11.4% Dissatisfied

2022 Management Summary

1.) Hunting Season Evaluation: For 2023 season setting, we have several changes proposed for West Green River elk to increase cow harvest. This is in response to considerable damage issues in the herd unit brought on by a very severe winter in 2022/23. Elk are struggling to find food and the Department is even conducting emergency feeding to bait elk away from private haystacks and feed lines. This is an extraordinary situation and we do not plan to feed in future years. We will reevaluate our harvest plan after we get new aerial survey data in the future. We have Type 7 licenses valid in August to address Elk damage in Hunt Areas 103 and 104. These licenses are only good on or within ¼ mile of irrigated lands. Considerable numbers of elk have been wintering close to Highway 30 in Nugget Canyon. Several groups of elk have crossed into Hunt Area 105. There is concern that more elk may get pushed across the highway during late season hunts. We do not want large numbers of elk in Hunt Area 105 due to potential competition on extensive mule

deer winter ranges and lack of support for elk with private landowners in the area. To address this we allow segments of 104 type 6 and type 7 seasons to also be valid in the northern portion (within Lincoln County) of Hunt area 105.

In Hunt Area 105 we open the either sex general season on October 1st. This allows general hunting during the second half of the rut and provides a long season of 31 days. This season overlaps the general deer hunt allowing combination hunts. This intentionally puts more hunting pressure on elk in the area to address landowner complaints and increasing elk numbers there.

2.) Management Objective Review: We are maintaining this herd at the current objective and management strategy based on internal discussions and conversations with our constituents. We evaluated and considered population status and habitat data included in this document and a change is not warranted at this time. We will review this herd objective again in 2028; however, if the situation arises that a change is needed, we will review and submit a proposal as needed

3.) Chronic Wasting Disease Management: This is a Tier 3 surveillance herd that was prioritized for CWD sampling in 2020. Prevalence estimates and sample sizes are presented below (Table1). No positives were found. For this surveillance period, we were not able to obtain the sampling goal of 200. It is difficult to get samples from elk in this herd as many harvested elk are quartered or deboned in the field. To date, we collected 187 samples during the focal period. No positives have been found. Sample distribution was reasonable. Historically, the herd has had no positive test results.

Table 1. CWD prevalence for hunter-harvested elk in the West Green River Elk Herd, 2020 - 2022.

Year(s)	**Percent CWD-Positive and (*n*) – *Hunter Harvest Only***
	All Adult Elk (CI = 95%)
2020-2022	**0% (0-2%, n=187)**

4.) Fossil Butte National Monument: In recent years, the number of elk moving onto Fossil Butte National Monument (FBNM) during the fall has increased, and is estimated to be around 600-800 animals. Radio collar data suggests a significant number of animals move onto the Monument in early September, immediately after the opener of the archery season. As with most lands administered by the National Park Service, FBNM is closed to hunting. As the number of elk on FBNM has increased, it has become increasingly difficult to manage this herd to objective while providing huntable numbers of elk for sportsmen.

5.) Sightability Aerial Surveys: Elk aerial surveys are scheduled to be conducted every three years in the West Green River Elk Herd. Classification data is also collected during these flights. All known occupied elk winter range is flown in Hunt Areas 102, 103 and 104. Some small parts of Area 105 are flown but not all of Area 105 is flown due to the large geographic area and very low elk densities. The survey was most recently flown in January 2020. Total numbers of elk observed were 4,647. The Idaho sightability model was used to estimate a total population for the area flown. That estimate was 4,721 elk with a standard error of 21.12. Good coverage of occupied elk winter habitat was achieved in the survey. However, there are some peripheral habitats that were not flown due to budget constraints. For population modeling we add 100 animals to the estimate and enlarge the SE to account for those areas. This is a very low sightability correction. On these surveys a low sightability correction factor is normal and is produced due to large groups of elk in high snow cover and open environments. This creates survey conditions where very few

elk are missed during helicopter surveys. We have not had the budget avaialbe to fly this survey since 2020 and henc e we do not have a good population estimate for this herd. We hope to fly this as soon as possible in the future.

6.) Population Modeling Issues: The population model no longer functions in this herd unit. The model cannot reconcile data on the population estimates, bull:cow ratios and bull harvest. We do not know if this is a data issue or a model issue but it has been the case for over 7 years, and the model is unable to track observed numbers and keep from crashing to negative. There are many elk herd units in Wyoming where models are not functioning. We rely largely on the aerial survey population estimates for population management in the West Green River herd unit but unfortunately do not have the budget to fly them as of late. Population estimates are very approximate and are based on ground observations from field personnel during severe winter conditions.

7.) Comingling with Livestock: Conflict with agriculture producers can be an issue for this elk herd. Damage complaints occur during bad winters, but are less common during "normal" winters. Unfortunately, four of the past seven winters have been worse than average in regards to snowfall and temperatures. Elk comingling with livestock during winter is relatively uncommon, and only in limited areas, but is an issue. Past problems have typically been dealt with successfully if the Department was notified. The area is in the brucellosis surveillance area, despite the fact that there is extremely low brucellosis prevalence, and has never had a positive brucellosis test in elk near wintering livestock. Regardless, brucellosis concerns occur among livestock producers throughout the herd unit, especially in the areas near Cokeville (Areas 103 and 104).

2022 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2022 - 5/31/2023

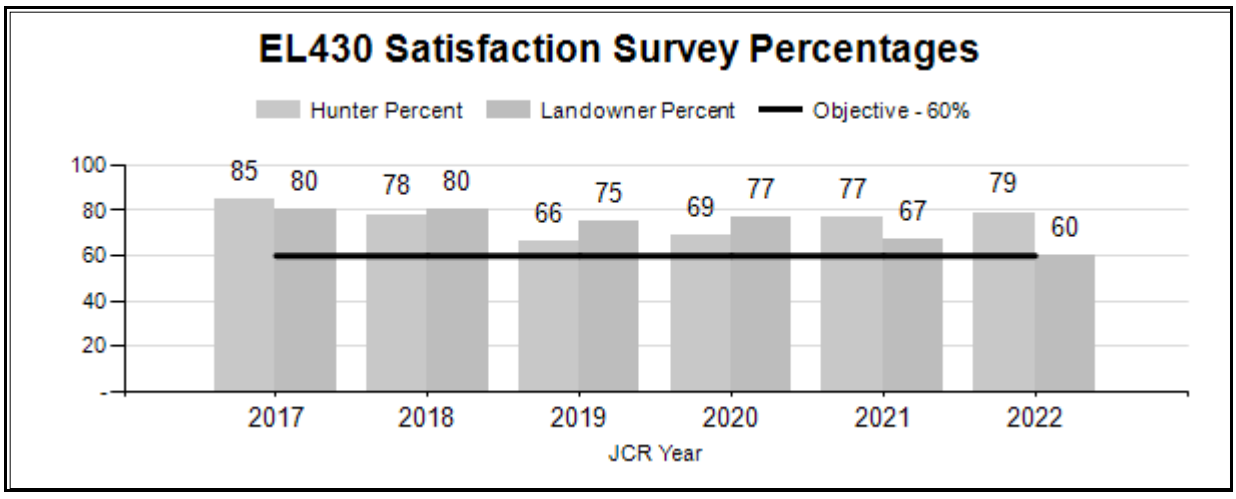
HERD: EL430 - PETITION

HUNT AREAS: 124

PREPARED BY: PHILIP DAMM

	2017 - 2021 Average	2022	2023 Proposed
Hunter Satisfaction Percent	75%	79%	75%
Landowner Satisfaction Percent	76%	60%	75%
Harvest:	113	114	115
Hunters:	180	153	155
Hunter Success:	63%	75%	74 %
Active Licenses:	180	153	155
Active License Success:	63%	75%	74 %
Recreation Days:	1,328	910	925
Days Per Animal:	11.8	8.0	8.0
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	10%
Number of years population has been + or - objective in recent trend:	0



2023 Hunting Seasons
Petition Elk Herd Unit (EL430)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
124	1	Sep. 1	Sep. 30	Oct. 15	Nov. 30	70	Any elk
124	4	Sep. 1	Sep. 30	Oct. 15	Nov. 30	100	Antlerless elk
124	4			Dec. 1	Dec. 31		Antlerless elk valid east of Sweetwater County Road 19, and north and east of BLM Roads 4409 and 4411, and west of BLM Road 3310 and Sweetwater County Road 23S

2022 Hunter Satisfaction (Obj.=60%): 79% Satisfied, 13% Neutral, 8% Dissatisfied
2022 Landowner Satisfaction (Obj.=60%): 60% At Desired Levels, 20% Above, 20% Below
2022 3-year Average Age of Bull Elk Harvested: 6.4

2022 Management Summary

1.) Hunting Season Evaluation: Landowner satisfaction and hunter satisfaction (established 2013) indicated management objectives were being met. As always, changes in numbers and distribution of elk were not estimable due to the size of and relatively low elk density across the herd unit. Disparity exists between landowners in terms of satisfaction across the herd. A number of landowners were interested in the excellent hunting opportunity and felt more cow elk distributed across the unit would help with maintaining presence of mature bulls. Counter, a few landowners believed too many elk existed in the unit, have trouble with damage, and felt numbers should be lowered. Regardless, landowner reports and observations indicated relatively high elk numbers along the Little Snake River where much of the private land occurs. With the slight decrease in Type 4 licenses in 2021 came a corresponding increase in success for that license type from 36% in 2020 to 55% and 64% for 2021 and 2022, respectively. Managers continued to receive fewer complaints about hunters not being able to find cow elk to hunt. Along with the increase in success in 2022 came a decrease in hunter effort. Managers monitored these metrics of cow/calf harvest closely as a potential index to population numbers, and they will continue to do so. Type 1 success was consistent with the last few years at around 88%.

Absolute averages for age of harvested bull elk continued to be problematic; however, relative ages over time were still assessed for season setting. Low sample sizes were observed, but biased sample sizes were the main concern. With only about 3% participation by landowner license holders within the herd unit (versus ~30% for all others) likely artificially decreased averages, as landowners typically only harvested older age class bulls. Nevertheless, the average age of bulls harvested in this herd for 2022 was 7.6 (Figure 1; range 4.5-14.5) from 18 samples (past average of 15 samples/year), which was the highest average age since beginning the tooth aging effort in 2013. The running 3-year average was also still excellent at 6.4 (Figure 1). These ages indicated phenomenal existing opportunity to harvest mature bulls in Petition, particularly since the herd was managed under recreational objectives.

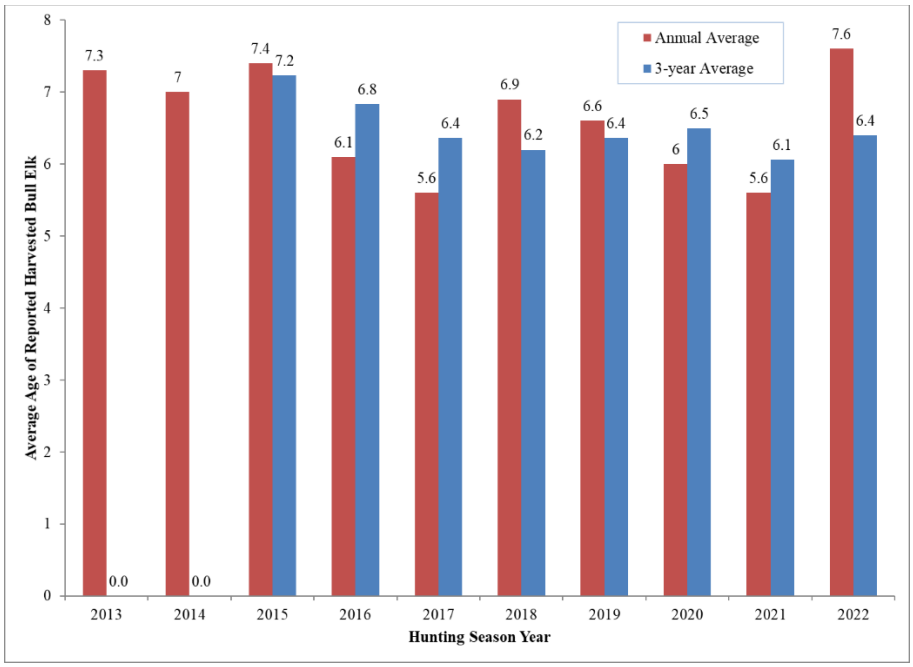


Figure 1. Annual and 3-year average age reported harvested bull elk for Petition Herd, 2013-22.

Feral horse HMAs across the unit continued to be significantly above AML. Horse numbers outside of HMAs, particularly around the Flat Tops, were abhorrent as well. More feral horses were observed immediately adjacent to Highway 789 than in the past, including at least one that crossed near the north Muddy Creek highway crossing and a second that entered into the mule deer highway right-of-way fence just north of Baggs. These feral horses affected elk distribution and populations through exclusion from water and other resources and habitat degradation. Feral horse removal did occur in 2021; however, it was apparently restricted to the Adobe Town area and would not result in any measurable effects to elk herd-wide.

With fairly appropriate harvest having occurred on Type 4 licenses in 2022 in terms success and effort, managers proposed no changes for the 2023 hunt. With high success on Type 1 licenses, maintenance of high average ages of harvest, and apparent high bull ratios, managers proposed no changes to that license type either. The increased allocation of Type 1 licenses in 2022 led to the highest Type 1 allocation in this herd's history, which was proposed to continue for the 2023 hunt. Managers agreed that achieving no more than 60% success for Type 1's in this herd would never be palatable to the public, but they would continue in future years to assess the ability to provide additional opportunity.

The winter of 2022-23 brought significantly deeper snowpack than normal across most of the eastern 2/3 of the herd, with upwards of around 2 additional feet for much of the winter and deepest snow centered in the Wamsutter area (Figure 2). While no quantitative assessments of mortality occurred, anecdotal observations indicated at least some mortality in multiple age and sex classes of elk. Elk were consistently observed immediately along the I80 right of way, and some mortality was observed there. Most of the shrub forage across the herd was covered by snow, including crusts from several freeze-thaw cycles, which resulted in difficulty finding available browse for much of the winter. Elk were frequently restricted to drainages where the only browse available was basin big sagebrush; frequent mortalities were observed in those

habitats as well. Palatability for reductions in elk licenses was mixed among stakeholder groups; regardless, managers felt enough opportunity was still available in the herd to support the previous year's allocation of licenses.

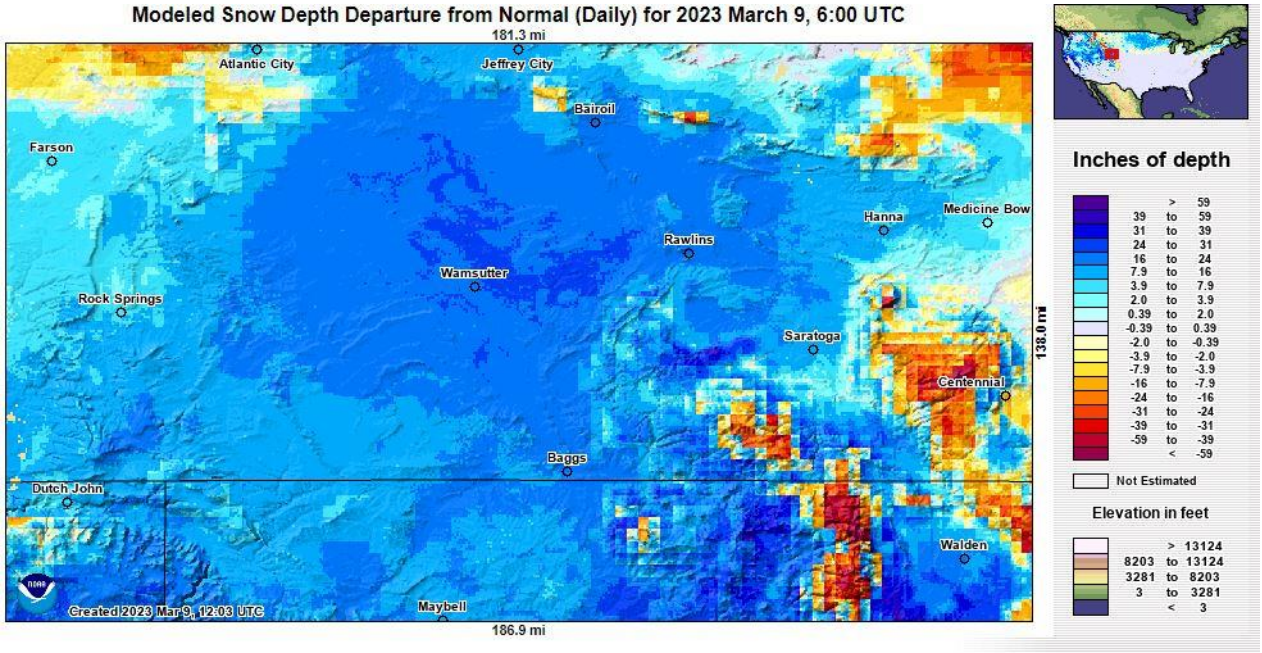


Figure 2. Modeled snow depth departure from normal as of March 9, 2023.

2022 - JCR Evaluation Form

SPECIES: Moose | PERIOD: 6/1/2022 - 5/31/2023

HERD: MO415 - UINTA

HUNT AREAS: 27, 35, 44, 901-902 | PREPARED BY: JEFF SHORT

	2017 - 2021 Average	2022	2023 Proposed
Population:		N/A	N/A
Harvest:	18	19	19
Hunters:	18	21	20
Hunter Success:	100%	90%	95 %
Active Licenses:	18	21	20
Active License Success:	100%	90%	95 %
Recreation Days:	187	211	200
Days Per Animal:	10.4	11.1	10.5

Limited Opportunity Objective:

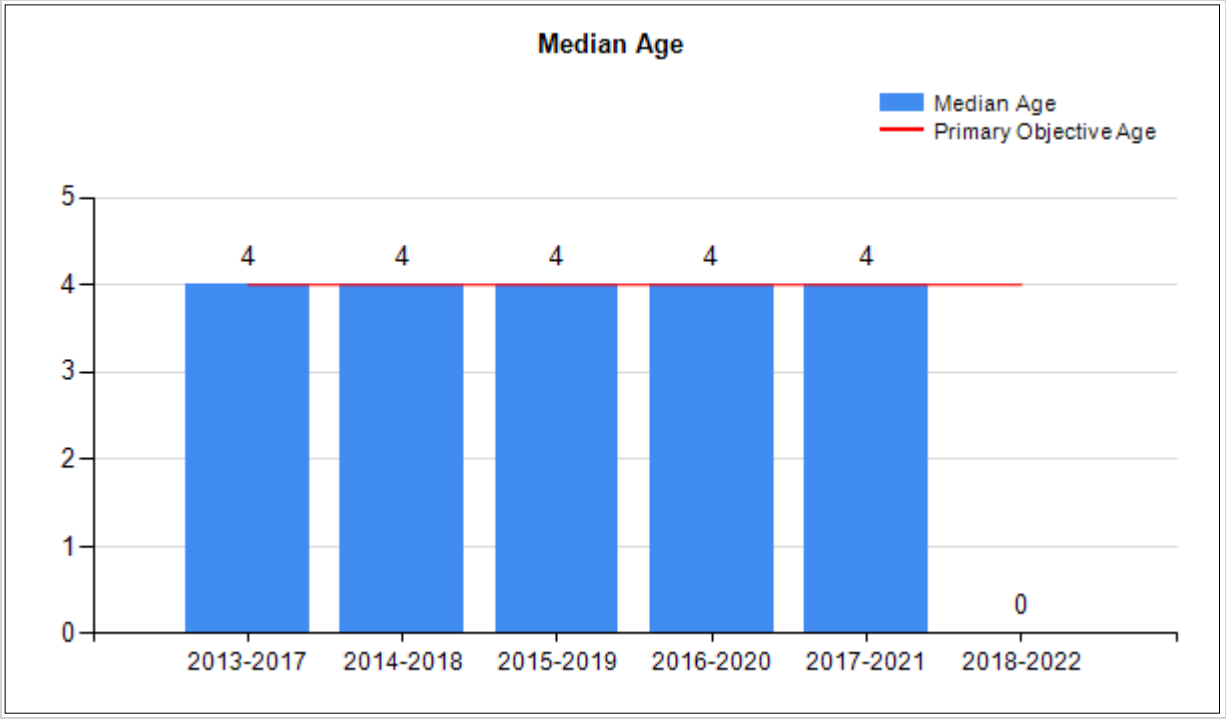
5-year median age of > 4 years for harvested moose

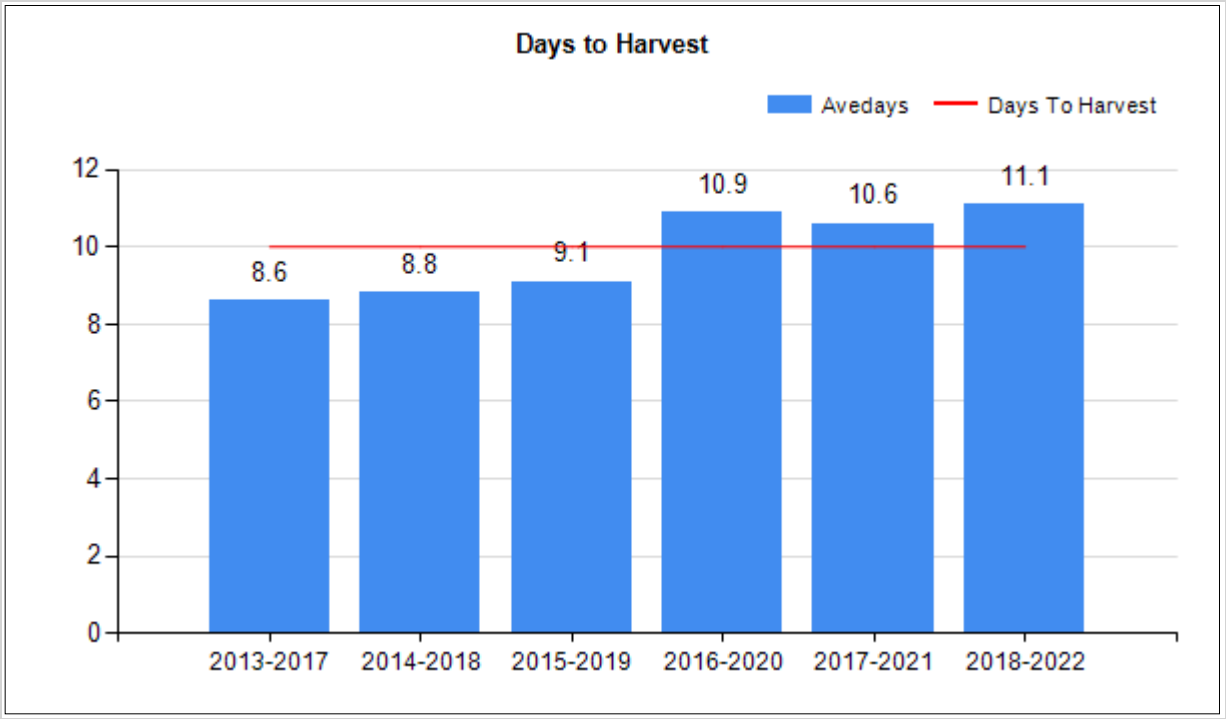
5-year average of <= 10 days/animal to harvest

Secondary Objective:

5-year average of 40% of harvested moose are > 5 years of age

Management Strategy: Special




Days to Harvest
Avedays
Days To Harvest
12
10
8
6
4
2
0
8.6
8.8
9.1
10.9
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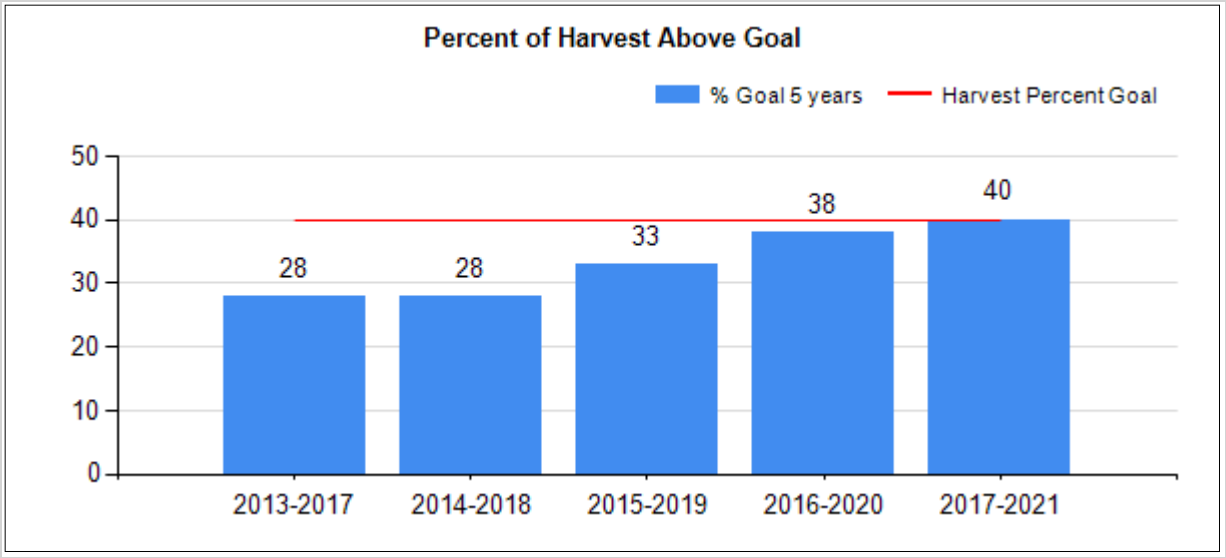
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Percent of Harvest Above Goal
% Goal 5 years
Harvest Percent Goal
50
40
30
20
10
0
28
28
33
38
40
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021

2023 HUNTING SEASONS

Uinta Moose Herd Unit (MO415)

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
27	1	Sept. 1	Sept. 30	Oct. 1	Nov. 20	15	Antlered moose (13 residents, 2 nonresidents)
35	1	Sept. 1	Sept. 30	Oct. 1	Nov. 20	5	Antlered moose (5 residents)

2022 Hunter Satisfaction: NA

2023 Management Summary

1.) Hunting Season Evaluation: The Uinta Moose Herd has a limited opportunity type objective. The objective is based on harvest data and has two parts. The primary objective is to have a median age of Harvest ≥ 4 years and have an average days per harvest of ≤ 10 days. The secondary objective is to have 40% of the male harvest ≥ 5 years of age. For these we use 5 year average timelines for better sample sizes. The JCR program is not populating the current data for the Median Age and Percent of Harvest Above Goal graphs. The current data is listed below.

Based on recent harvest data, we believe we can offer the same opportunity for hunters as the previous year. We are at objective for the median age of harvest with a most recent 5 year average (2018-2022) at 4.6 year old. In recent years we have had several retired hunters spending many days hunting and passing up bulls. This has put our average days to harvest data out of objective but does not appear to indicate it is difficult to find moose to harvest. If anything, it appears that the hunt is improving and hunters are getting more selective and spending more time looking for large bulls. We are at objective for the secondary objective criteria of percent of harvested moose that are greater than or equal to five years of age. The most current 5 year average (2018-2022) is 45% percent of harvested moose that are greater than or equal to five years of age. Average age of harvest and antler spread in 2022 were good at 6.1 years and 36.29 inches.

Hunt Area 44 is hunted in conjunction with Hunt Area 33. The hunt is listed as 33,44 and in the Lincoln Moose Herd document. The hunt is a Type 1 and good for any moose, except cow moose with calf at side. No antlerless harvest is currently allowed in the rest of herd unit. This is an effort to allow maximum growth of the herd. However, hunting is not likely to be a limiting factor for this herd. We do have some landowners experiencing moose damage in Hunt Area 27 and will consider adding a type 4 hunt limited to private irrigated lands in the future if those issues persist.

2022 - JCR Evaluation Form

SPECIES: Moose | PERIOD: 6/1/2022 - 5/31/2023

HERD: MO417 - LINCOLN

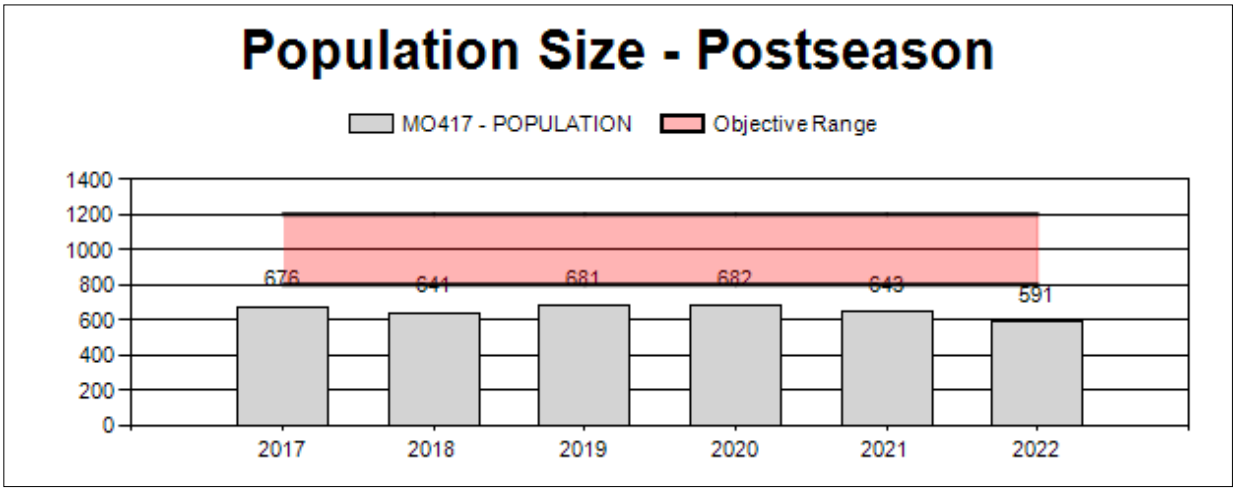
HUNT AREAS: 26, 33, 36, 40 | PREPARED BY: JEFF SHORT

	2017 - 2021 Average	2022	2023 Proposed
Population:	665	591	507
Harvest:	43	57	57
Hunters:	44	57	57
Hunter Success:	98%	100%	100 %
Active Licenses:	44	57	57
Active License Success:	98%	100%	100 %
Recreation Days:	318	388	380
Days Per Animal:	7.4	6.8	6.7
Males per 100 Females	58	0	
Juveniles per 100 Females	36	0	

Population Objective (± 20%) :	1000 (800 - 1200)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-40.9%
Number of years population has been + or - objective in recent trend:	0
Model Date:	02/27/2023

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

	JCR Year	Proposed
Females ≥ 1 year old:	2.0%	1.9%
Males ≥ 1 year old:	29.9%	39.9%
Proposed change in post-season population:	-16.1%	-14%



2023 HUNTING SEASONS

Lincoln Moose Herd Unit (MO417)

Hunt	Hunt	Archery Dates		Season Dates			
Area	Type	Opens	Closes	Opens	Closes	Quota	Limitations
26	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	39	Antlered moose; (34 residents, 5 nonresidents)
26	4	Sept. 1	Sept. 30	Oct. 1	Oct. 31	5	Antlerless moose, except cow moose with calf at side; valid on private irrigated land (4 residents, 1 nonresident)
33,44	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	3	Any moose, except cow moose with calf at side; (3 residents)
33	4	Sept. 1	Sept. 30	Oct. 1	Oct. 31	2	Antlerless moose, except cow moose with calf at side; (2 residents)
36	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	5	Antlered moose (4 residents, 1 nonresident)
40	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	3	Antlered moose; (3 residents)
40	4	Sept. 1	Sept. 30	Oct. 1	Oct. 31	3	Antlerless moose, except cow moose with calf at side; (3 residents)

2022 Hunter Satisfaction: NA

2023 Management Summary

1.) Hunting Season Evaluation: Harvest data is collected on a voluntary check basis for moose. The data collected includes tooth age and antler spread data. As the check is voluntary, data is not complete. Harvest data from 33, 36 and 40 does not provide much information about each individual hunt area given the low sample sizes. Harvest from Area 26 results in a good sample size due to higher license numbers. Total herd unit harvested bull age data suggests an average age of harvest of 3.88 years old for 2022. Average antler spread was 36.5" and % male harvest ≥ 5 years was 35% for 2022.

Harvest opportunity has been much more limited in this herd unit over the past 12+ years. In the late 2000s we dramatically reduced the number of licenses due to a population crash related to habitat issues and the parasite *Elaeophora schneiderii*. Since then, populations have stabilized and started to grow slowly. Hunts have very good success rates. Hunt Area 26 is considered a very good quality moose hunt with potential for trophy animals. Area 26 has ample public access and a variety of places to hunt moose. Hunts in areas 33, 36 and 40 are considered good hunts with good success rates but require more time to find low numbers of moose spread out over large areas. Public access can be more challenging in these areas but access to moose hunting is available. Those areas are not typically considered trophy areas but mature animals do exist and are harvested occasionally.

The only changes made to moose licenses in the herd unit were relative to the now 90:10 split between residents and nonresidents. In 2022 we added a type 4 hunt in Area 26 to address problem moose and overall moose numbers on agricultural lands. We also have a type 4 hunt in Areas 33 and 40 to address problem moose and overall moose numbers on agricultural lands. Hunt Area 33 has a very limited amount of moose habitat. Moose habitat primarily occurs within cottonwood and willow habitats associated with the Green River, including Seedskadee National Wildlife Refuge. Area 33 is hunted in conjunction with Area 44 for the type 1 hunt.

2.) Sightability: Moose aerial population estimation surveys now are scheduled to be conducted every three years in Hunt Area 26 concurrent with West Green River Elk surveys if budget allow. Classification data is also collected during these flights. Areas 33, 36 and 40 are not flown due to the large geographic area and very low moose densities. The joint elk and moose survey was last flown in January 2020. Total numbers of moose seen were 404. The Idaho sightability model was used to estimate a total population for the area flown. That estimate was 547 moose with a standard error of 6.63. Good coverage of occupied moose winter habitat was achieved in the survey. However, there are some peripheral habitats that were not flown due to budget constraints. For population modeling we have added 50 animals to the estimate and enlarged the SE to account for those areas.

3.) Modeling: There is a functioning model for moose in this herd unit. This is the only functioning moose population model in the state. It only functions due to the availability of sightability based population estimates. However, since it has been over three years since the last sightability survey was conducted we have little confidence in the model at this time. The model is showing a reduction in the population but our field observations and hunter comments indicate the population is doing well. We will fly another survey when money is available and will have more information. The model infers only to the core population in Hunt area 26. That portion of the herd resides in classic high quality moose habitat. The other hunt areas in the herd unit have very low numbers of moose and scattered low density moose occupancy. Across those three hunt areas we estimate there are approximately 120 moose. Total herd unit estimates in the JCR are reported as model estimates plus 120 animals to account for the overall objective. There is a moose model in the Speedgoat IPM system. However, sightability data from the JCR program for Lincoln moose is not in the IPM model. There are four sightability surveys that need utilized for modeling but without the data in the IPM we had to use the spreadsheet model.