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## **Acknowledgements**

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## 2023 - JCR Evaluation Form

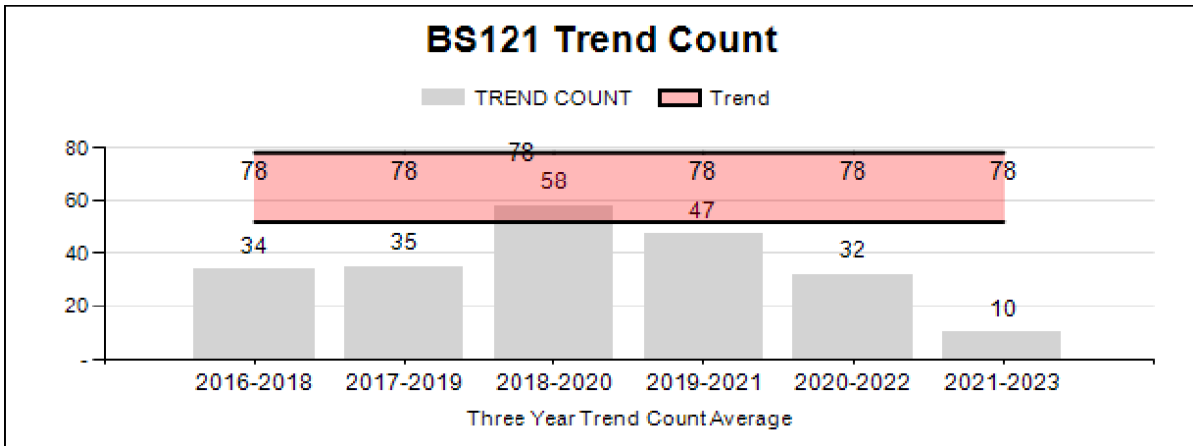
SPECIES: Bighorn Sheep  
 HERD: BS121 - DARBY MOUNTAIN  
 HUNT AREAS: 24

PERIOD: 6/1/2023 - 5/31/2024  
 PREPARED BY: GARY FRALICK

	<u>2018 - 2022 Average</u>	<u>2023</u>	<u>2024 Proposed</u>
Trend Count:	51	0	62
Harvest:	1	1	1
Hunters:	1	1	100
Hunter Success:	100%	100%	1 %
Active Licenses:	1	1	1
Active License Success	100%	100%	100 %
Recreation Days:	5	3	4
Days Per Animal:	5	3	4
Males per 100 Females:	60	0	
Juveniles per 100 Females	35	0	
Trend Based Objective (± 20%)			65 (52 - 78)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			N/A%
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):**

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%



**2024 HUNTING SEASON  
DARBY MOUNTAIN HERD UNIT - BHS121**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
24	1	Aug.15	Aug.31	Sep. 1	Oct.31	1	Any ram (1 resident)

**2023 Hunter Satisfaction: 100%**

**2024 Management Summary**

**1.) Hunting Season Evaluation:** The 2024 bighorn sheep hunting season will be open for the ninth consecutive year. The number of licenses issued in 2024 will be one (1) license issued to a resident hunter. This hunting season will likely result in the harvest of one adult ram 2+-years old. The posthunt 2024 population trend count is projected at approximately 62 sheep.

**2.) Management Objective Review:** The 3-year trend based objective of 65 sheep was approved by the Wyoming Game and Fish Commission in 2016, and was last reviewed in 2021 when no changes were recommended. The next objective review will be in 2026.

**3.) Herd Unit Evaluation:** The most comprehensive posthunt helicopter survey since 2017 was conducted on April 23, 2023 to document sheep on winter ranges prior to dispersal to summer ranges. During that survey a total of 79 sheep were observed in hunt area 24. The number, location, and age/sex of the sheep are provided in Table 1. A sufficient number of rams were observed to justify the continued issuance of one (1) license for any ram in the 2024 hunting season. A helicopter survey was not attempted during winter 2024 due to unfavorable flying conditions.

Table 1. Trend count summary- Darby Mountain bighorn sheep herd, April 2023.

Location	Adult Rams	Yearling Rams	Ewes	Lambs	Total
Box Canyon	2	0	8	0	10
Straight Cr	7	1	0	1	9
Darby Mtn	1	1	0	0	2
Fish Cr Mtn	4	2	17	7	31
Lunch Cr	0	0	2	0	2
Roaring Fk	0	1	14	5	20
Marten Cr	1	0	3	1	5

In 2023 the ninth ram was harvested since the hunting season re-opened in 2016 after being closed since 2013. Since 2016 all hunter-harvested rams have been at least 7.5 years of age or older, and the 2024 hunting season will likely result in the harvest of one ram 7+ years old.

## 2023 - JCR Evaluation Form

SPECIES: Elk  
 HERD: EL106 - PINEY  
 HUNT AREAS: 86, 92, 94

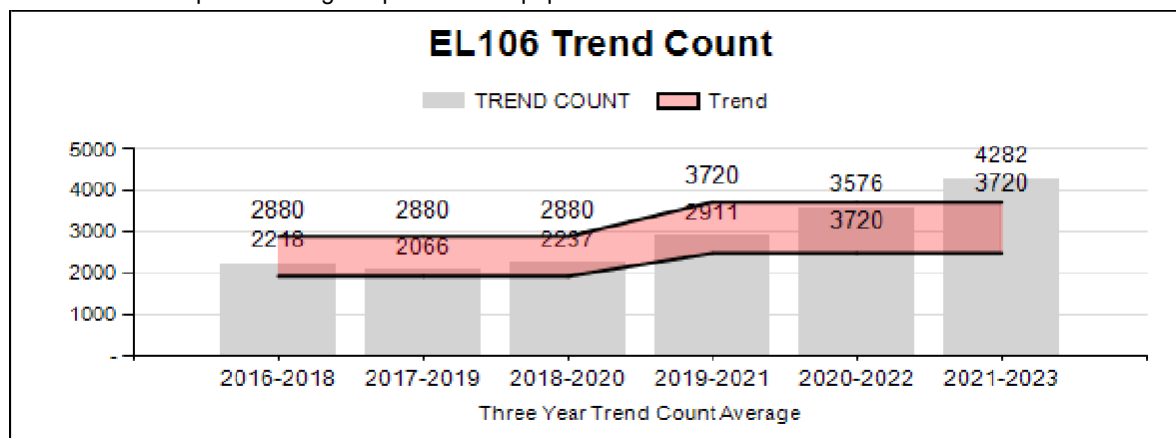
PERIOD: 6/1/2023 - 5/31/2024  
 PREPARED BY: GARY FRALICK

	<u>2018 - 2022 Average</u>	<u>2023</u>	<u>2024 Proposed</u>
Trend Count:	3,087	4,123	3,900
Harvest:	799	1,157	1,200
Hunters:	2,638	2,727	2,880
Hunter Success:	30%	42%	42 %
Active Licenses:	2,842	3,201	2,880
Active License Success	28%	36%	42 %
Recreation Days:	22,457	23,505	24,225
Days Per Animal:	28.1	20.3	20.2
Males per 100 Females:	30	30	
Juveniles per 100 Females	36	24	

Trend Based Objective (± 20%) 3,100 (2480 - 3720)  
 Management Strategy: Recreational  
 Percent population is above (+) or (-) objective: 33%  
 Number of years population has been + or - objective in recent trend: 5

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%



**2024 HUNTING SEASONS  
PINEY ELK HERD UNIT (EL106)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
86	Gen	Sep.1	Sep.25	Sep.26	Oct. 31		Any elk
86	Gen			Nov.1	Nov.20		Antlerless elk
86	6	Sep. 1	Sep.25	Sep.26	Nov.30	150	Cow or calf
92	Gen	Sep. 1	Sep.30	Oct. 15	Oct.31		Any elk
92	Gen			Nov. 1	Nov.20		Antlerless elk
92	6	Sep. 1	Sep. 30	Oct. 1	Nov.30	500	Cow or calf
92	6			Dec.1	Jan. 31		Cow or calf valid north of Highway 354 and Sublette County Road 112, east of Sublette County Road 115, and south of South Beaver Creek
94	Gen	Sep. 1	Sep.30	Oct. 15	Oct.31		Any elk
94	Gen			Nov. 1	Nov.20		Antlerless elk
94	6	Sep. 1	Sep. 30	Oct. 1	Nov.30	500	Cow or calf
94	7	Sep. 1	Sep. 30	Nov. 1	Dec.10	150	Cow or calf valid north of Middle Piney Creek
94	7			Dec. 11	Jan. 31		Cow or calf valid on private land north of Middle Piney Creek

**2024 Region W Nonresident quota: 2,775**

**2023 Hunter Satisfaction:** 65% Satisfied, 23% Neutral, 12% Dissatisfied

**2024 Management Summary**

**1.) Hunting Season Evaluation:** The Hoback elk herd was dissolved in 2021 and that portion of hunt area 87, including the McNeel feedground, was incorporated into hunt area 92. Liberal elk hunting opportunities are warranted in 2024 because of the increase in overall elk numbers and the trend based objective in the Piney herd that is associated with the incorporation of a portion of the Hoback elk herd. Consequently, general hunting for antlerless elk into November, and increases in the number of type 6 and 7 cow/calf only licenses are proposed throughout the herd unit.

The emphasis to harvest adult female elk in hunt area 94 will continue for the 17<sup>th</sup> consecutive year by opening the limited quota antlerless elk hunting on October 1 and continuing general license and limited quota hunting opportunity into November. The number of days for the November portion of the general license antlerless elk hunting season is proposed to close on November 20, similar to the 2023 season closure. This season structure will allow general license hunters to maximize the November segment of the hunt to harvest elk that have moved to lower, more accessible areas. The number of type 6 and type 7 licenses will increase accordingly based on the increase in the number of elk counted. Type 6 licenses will increase from 450 to 500 licenses, and type 7 licenses will increase from 125 to 150 licenses. The closing date for the type 6 licenses is proposed to remain at November 30 in an effort to harvest elk during the Thanksgiving holiday. The type 7 season closer is proposed to close on December 10. The boundary on the south will remain at lands north of Middle Piney Creek. All of these adjustments are an effort to promote and encourage hunting to increase elk harvest in 2024.

In hunt area 92, because of the additional 989 elk that occupied the McNeel feedground this winter, elk hunting opportunity will increase substantially over 2023 levels (Appendix A). The general license antlerless elk portion of the November hunting season is proposed to align with Area 94. This season will run November 1 – November 20 general license antlerless elk. The number of limited quota Type 6 cow calf only licenses will increase from 400 licenses to 500 licenses in an effort to affect the desired decrease in the 2024 posthunt elk population.

In hunt area 86, the effort to harvest antlerless elk in November with general license hunting will continue in 2024 because of the high number of elk counted during the posthunt 2023 trend count. The number of days for the general license antlerless elk portion of the November hunting season will close on November 20. In addition, the number of type 6 limited quota cow or calf licenses will increase from 100 to 150 licenses in an effort to affect a desired population decrease on the McNeel feedground. The Type 6 hunting season will run September 26 through November 20.

There were no Auxiliary Chapter 34 license hunts administered in the Piney elk herd during the current reporting period.

**2.) Management Objective Review:** Upon the dissolution of the Hoback elk herd unit in 2021, hunt area 92 now encompasses portions of the former hunt area 87 south of U.S. Highway 189/191. After public and federal agency personnel review, the Wyoming Game and Fish Commission in July of 2022 approved adding 700 elk from the former Hoback elk herd (old objective of 1,100 elk) to the Piney herd, and the remaining 400 elk were absorbed into the Upper Green herd. Thus, the new Piney elk herd trend-based objective is 3,100 elk, and will next be reviewed in 2027.

**3.) Chronic Wasting Disease Management:** The Piney elk herd is a Tier 2 CWD surveillance herd, targeted for intensified sampling in 2025. CWD was documented in a GPS collared elk classified as a wounding loss in hunt area 92 in 2023 (Table 1.), and CWD positive mule deer have been identified within the Piney elk herd unit boundary. Because the Piney elk herd is on the western edge of CWD in Wyoming, opportunistic sampling of hunter-harvested and targeted (i.e., apparently sick and euthanized) elk occurs annually.



Table 1. CWD prevalence for hunter-harvested elk in the Piney herd, 2021-2023

Years	Percent CWD-Positive and sample size (n) <i>Hunter Harvest Only</i>
	All Adult Elk (CI = 95%)
2021	0.0% (0.0%, n=39)
2022	0.0% ( 0.0%, n=37)
2023	1.3%, n=1 (0.0%-2.3%, n=77)
2021 - 2023	0.7% (0.0%-3.6%, n=153)

Appendix A. Piney Elk Herd, posthunt herd composition data, 2019-2023.										
2019	Adult Males	Yrlng Males	Total Males	Cows	Calves	Total	Ratio:100 Females			
							Adult Males	Yrlng Males	Total Males	Calves
92 JFG	44	34	78	273	69	420				
92 FFG	NA	NA	NA	NA	NA	193				
92 NR	17	3	20	0	0	20				
94 FFG	41	41	82	300	101	483				
94 NPF	0	0	0	0	0	0				
94 BCFG	43	76	119	662	171	952				
94 NR	130	30	160	0	0 (329)	489				
<b>TOTAL</b>	<b>275</b>	<b>184</b>	<b>459</b>	<b>1235</b>	<b>341(522)</b>	<b>2557</b>	<b>22</b>	<b>15</b>	<b>37</b>	<b>28</b>
<b>2020</b>										
92 JFG	31	21	52	215	78	345				
92 FFG	12	7	19	21	14(35)	89				
92 NR	0	0	0	4	0(50)	54				
94 FFG	21	36	57	263	119	439				
94 NPF	0	0	0	0	0	0				
94 BCFG	24	25	49	489	62	600				
94 NR	86	5	91	1	1 (385)	478				
<b>TOTAL</b>	<b>174</b>	<b>94</b>	<b>268</b>	<b>993</b>	<b>274(470)</b>	<b>2005</b>	<b>17</b>	<b>9</b>	<b>27</b>	<b>28</b>
<b>2021</b>										
92 JFG	47	26	73	337	61	471				
92 FFG	77	36	113	177	91(241)	622				
92 McFG	18	52	70	601	319	990				
92 NR	27	3	30	1	0	31				
94 FFG	4	37	41	NS	NS(483)	524				
94 NPF	0	0	0	0	0	0				
94 BCFG	85	118	203	782	247 (10)	1242				
94 NR	0	0	0	0	(290)	290				
<b>TOTAL</b>	<b>258</b>	<b>272</b>	<b>530</b>	<b>1898</b>	<b>718(1024)</b>	<b>4170</b>	<b>14</b>	<b>14</b>	<b>28</b>	<b>38</b>
<b>2022</b>										
92 JFG	28	29	57	344	104	505				
92 FFG	100	76	176	209	72	457				
92 McFG	0	0	0	0	0 (1050)	1050				
92 NR	30	3	33	11	0	44				
94 FFG	32	27	59	253	95	407				
94 NPF	0	0	0	0	0	0				
94 BCFG	125	115	240	826	341	1407				
94 NR	36	1	37	3	1 (643)	684				
<b>TOTAL</b>	<b>351</b>	<b>251</b>	<b>602</b>	<b>1646</b>	<b>613 (1693)</b>	<b>4554</b>	<b>21</b>	<b>15</b>	<b>36</b>	<b>37</b>
<b>2023</b>										
92 JFG	NS	NS	NS	NS	NS (450)	450				
92 FFG	137	33	170	291	93	554				
92 McFG	5	47	52	810	127	989				
92 NR	5	8	13	29	7	49				
94 FFG	13	31	44	265	112	421				
94 NPF	0	0	0	0	0	0				
94 BCFG	NS	NS	NS	NS	NS (1200)	1200				
94 NR	124	19	143	0	0 (317)	460				
<b>TOTAL</b>	<b>284</b>	<b>138</b>	<b>422</b>	<b>1395</b>	<b>339 (1967)</b>	<b>4123</b>	<b>20</b>	<b>10</b>	<b>30</b>	<b>24</b>

## Appendix B. Disease Management (E106)

CWD sampling efforts over the past three years in the Piney elk herd are displayed in Table 1. One sample tested positive for CWD in 2023. Upon examination of the carcass, it was determined that the elk likely sustained gunshot wounds from hunting activity in late November 2023. The carcass was located by WGFD personnel as the elk was wearing a satellite-linked GPS collar, which triggered an email notification upon mortality. The adult female elk had been classified in the 10+ age category upon capture at the Franz feedground in February 2022. Examination revealed the elk to be in good body condition and was likely not yet symptomatic for CWD. This is the first documented case of CWD in elk in the Piney herd.

Ear tags are permanently attached to all elk that are captured and released as part of brucellosis surveillance and research initiatives and are retrieved when an animal is harvested or when a carcass is discovered. This undertaking enhances our understanding of elk distribution and dispersion, and improves our knowledge of how diseases may potentially spread among elk herds. Ear tags from one hunter-killed elk that was captured in a winter free-ranging population within this herd (Riley Ridge) was also harvested within the herd unit boundaries (hunt area 94). Also, ear tags returned from an elk captured at the Camp Creek feedground in hunt area 84 of the in the Fall Creek herd (E103) was harvested within the Piney herd in hunt area 86.

GPS collars on a sample of the elk are used to facilitate monitoring of feedground populations throughout the brucellosis transmission season with the goal of at least 5 collars deployed per feedground at any given time. This monitoring helps in identifying and addressing any potential risks of elk-cattle disease transmission, and enables the monitoring of elk response to adjustments in feeding strategies aimed at lowering disease transmission rates during the feeding season. Collars are programmed to record location data at 2-hour intervals for a duration of four years.

A total of five adult female elk were handled at feedgrounds this season within the Piney elk herd, with all sampled for exposure to *Brucella abortus*, the bacteria responsible for causing brucellosis. Three of the samples tested positive (Table 2). The sample size was not large enough to estimate seroprevalence in the herd, as captures were primarily to deploy GPS collars.

Table 2. 2024 Big Piney Elk Herd Unit Capture Summary

Feedground	# GPS collars deployed	# Captured	# Tested	# Positive	Seroprevalence
Franz	3	3	3	1	33%
McNeel	2	2	2	2	100%
Jewett	0	0	0	0	N/A
Bench Corral	0	0	0	0	N/A
Finnegan	0	0	0	0	N/A
<b>Totals =</b>	<b>5*</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>60%</b>

\*statistically insignificant *n* for estimated prevalence to be within +/- 15% of true prevalence

Winter 2023-24 was exceptionally mild and efforts required to redistribute elk from damage and cattle co-mingling situations were minimal compared to the previous winter. The utilization of a drone was implemented only once in this herd during a 28-minute flight, as compared to the 10 separate drone deployments with a total flight time of 674 minutes during the previous winter. This winter's drone flight successfully relocated 42 elk about 3 miles to the closest feedground from an unprotected privately-owned haystack.

Numerous game-proof fencing materials, purchased with funding through a cooperative agreement with APHIS have been distributed in the Piney elk herd over the decades. Once erected, stackyards prevent food rewards to elk in areas with high brucellosis transmission risk, discouraging their occupancy and minimizing the potential for co-mingling of elk and cattle. Of the 20 new stackyards provided to cattle producers in western Wyoming for this purpose in 2023, five stackyards were distributed to four cattle producers within the Piney herd.

### **Franz Feedground**

On February 15, three adult female elk were captured using chemical immobilization at the Franz feedground to deploy three GPS collars. One of the elk tested positive for exposure to *B. abortus*, as indicated in Table 2, however, the sample size is not sufficient to accurately estimate population seroprevalence.

### **McNeel Feedground**

On February 22, two adult female elk were captured using chemical immobilization at the McNeel feedground to deploy two GPS collars. Both elk tested positive for exposure to *B. abortus*, as indicated in Table 2, however, the sample size is not sufficient to accurately estimate population seroprevalence. On March 29<sup>th</sup>, a 2.5-yr old bull was observed to be extremely ill with bloody foam coming from its mouth and nose, with difficult breathing and unable to stand, and was euthanized. Samples were taken and lab results found significant growth of the bacterium *Pasteurella multocida* on tissues from multiple organs, indicating septicemic pasteurellosis. This illness, which is sometimes epidemic, was likely associated with difficulties with feeding on clean snow due to a relatively small feeding area for a large population of elk, and environmental conditions favorable to the bacteria.

### **Jewett Feedground**

No elk were captured at the Jewett feedground during the winter of 2023-24. Located in a higher precipitation zone, this feedground is typically one of the longer duration feeding sites. However, due to wolf activity coupled with extremely mild conditions this winter, elk dispersed from the feedground in mid-January, spending most of the winter on BLM-managed lands.

Several factors contributed to the successful winter free-ranging of this elk population for the majority of the winter season. Over the past decades, haystacks erected on private lands have reduced the potential for food rewards to elk. GPS collars deployed on elk have aided in monitoring distributions throughout the winter, providing near real time elk locations to help inform if hazing operations are required. Habitat treatments have been implemented on public lands associated with Jewett feedground, particularly in areas where co-mingling with cattle is of low risk. These treatments have resulted in an improvement in both the quantity and quality of forage available. Furthermore, above-average forage production levels were experienced during the 2023 growing season, attributed to the record snowfalls of 2022-2023 accompanied by ample spring rains. This led to an abundance of residual forage on federally managed lands.

### **North Piney Feedground**

North Piney is considered a “staging area” as opposed to a traditional feedground. Up to 400 elk are typically fed for less than a month, then migrate to the Bench Corral feedground, usually prior to January 1. No elk were fed at North Piney this winter.

### **Bench Corral Feedground**

Due to mild winter conditions and low snow levels experienced during the winter of 2023-24, this feedground was not operated and elk were allowed to free-range throughout the entire winter season. Bench Corral was also not operated during two similarly mild winters of 1993-4 and 1976-77. In winter 2017-18 elk were minimally fed over a 10-day period in late-Feb/early-March as a precaution during a snowfall event. Even during normal to severe winters, this feedground typically has a relatively short feeding season. Because an elk trap is not located at this feedground, regular disease surveillance is not conducted and current brucellosis seroprevalence is unknown. It’s worth noting that the seroprevalence at each specific feedground is strongly correlated with the average duration of the feeding season, particularly the feeding end date. Research has indicated that *Brucella*-induced abortions in elk peak in from March thru early May, so the earlier in the season managers can encourage elk to disperse, the lower the spread among elk and associated risk to cattle. Since the Bench Corral feedground is managed for a shorter feeding season due to its location in a relatively low precipitation zone with accompanying high access to native forage in late-winter/early spring, the transmission rate of *B. abortus* on the feedground is expected to be lower than average.

### **Finnegan Feedground**

No elk were captured at the Finnegan feedground during the winter of 2023-24.

## 2023 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2023 - 5/31/2024

HERD: EL107 - UPPER GREEN RIVER

HUNT AREAS: 87, 93, 95-96

PREPARED BY: DEAN CLAUSE

	<u>2018 - 2022 Average</u>	<u>2023</u>	<u>2024 Proposed</u>
Trend Count:	2,893	2,989	3,100
Harvest:	442	548	600
Hunters:	1,337	1,565	1,550
Hunter Success:	33%	35%	39 %
Active Licenses:	1,454	1,824	1,750
Active License Success	30%	30%	34 %
Recreation Days:	12,025	14,105	13,500
Days Per Animal:	27.2	25.7	22.5
Males per 100 Females:	34	33	
Juveniles per 100 Females	33	29	

Trend Based Objective (± 20%) 2,900 (2320 - 3480)

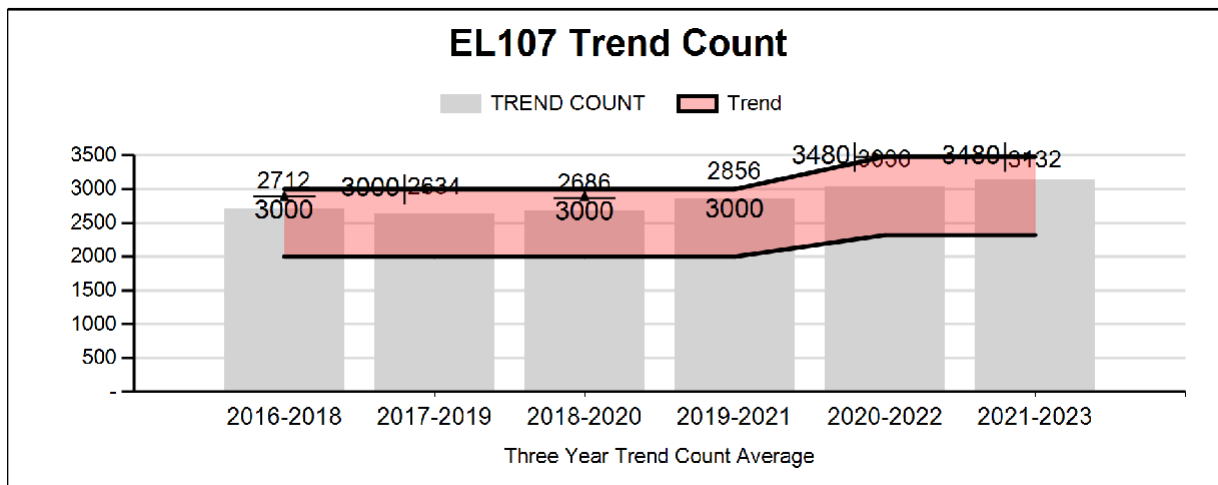
Management Strategy: Recreational

Percent population is above (+) or (-) objective: 3%

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

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

	<u>JCR Year</u>	<u>Proposed</u>
Females 2: 1 year old:	0%	0%
Males 2: 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



**2024 HUNTING SEASONS  
Upper Green River (EL107)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
87	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
87	Gen			Nov. 1	Nov. 20		Antlerless elk
87	1			Dec. 1	Jan. 31	10	Antlered elk valid within the interior of the Dell Creek Loop Road (Forest Road 30580 and Sublette County Road 23-114)
87	6			Dec. 1	Jan. 31	50	Cow or calf valid south and east of Dell Creek, north and west of North Fork of Fisherman Creek
87	7	Sept. 1	Sept. 30	Oct. 15	Nov. 20	150	Cow or calf
93	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	200	Any elk
93	1			Nov. 1	Nov. 30		Antlerless elk
93	6	Sept. 1	Sept. 30	Oct. 1	Nov. 30	275	Cow or calf
95	1	Sept. 1	Sept. 30	Oct. 15	Nov. 5	225	Any elk
95	2	Sept. 1	Sept. 30	Oct. 1	Nov. 5	30	Any elk valid within the Green River drainage upstream from the outlet of Lower Green River Lake, including that portion east and south of Mill Creek
95	4	Sept. 1	Sept. 30	Oct. 15	Nov. 5	150	Antlerless elk
95	5	Sept. 1	Sept. 30	Oct. 1	Nov. 5	25	Antlerless elk valid within the Green River drainage upstream from the outlet of Lower Green River Lake, including that portion east and south of Mill Creek
95	6	Sept. 1	Sept. 30	Oct. 15	Nov. 5	25	Cow or calf
96	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
96	Gen			Nov. 1	Nov. 20		Antlerless elk
96	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	275	Any elk
96	1			Nov. 1	Nov. 30		Antlerless elk
96	4	Sept. 1	Sept. 30	Oct. 1	Nov. 30	150	Antlerless elk
96	6	Sept. 1	Sept. 30	Oct. 1	Nov. 30	150	Cow or calf

**2024 Region W Nonresident quota: 2,775**

**2023 Hunter Satisfaction:** 62% Satisfied, 23% Neutral, 15% Dissatisfied

**2023 Management Summary**

**1.) Hunting Season Evaluation:** Hunting seasons in the past years have remained similar and successful in maintaining this herd unit within management goals. As a result of recent mild fall weather conditions, hunting success and overall harvest rates have declined, resulting in gradual herd growth. Although hunter numbers, harvest and success typically don't reflect much annual variation for the Upper Green elk herd as a whole, each hunt area is unique, resulting in different hunting strategies and seasons. This herd is managed as a "recreational herd" for a bull:100 cow ratio of 15-29 and has remained above this objective in recent years.

The addition of hunt area 87 to the Upper Green River herd unit occurred in 2022 upon the elimination of the Hoback elk herd (EL104).

The proposed 2024 hunting season will remain very similar to 2023 in providing liberal opportunities for both antlered and antlerless harvest within this herd by using a combination of general and limited quota licensed hunters. Hunt area 87 (Raspberry Ridge), new to this herd in 2022, will have similar season structures as in the past. A late season antlered hunt, 87 type 1 (10 licenses) will be maintained to address annual private land hay damage in a small portion of the area. Hunt areas 93 and 95 will offer the same seasons and licenses for limited quota hunters as in 2023. In hunt area 96, the combination of general and limited quota seasons and licenses will remain similar, except for the elimination of 96 type 2 licenses (n=10) valid late season in a small portion of the hunt area dominated by private lands. This license type was eliminated due to recent lack of private land access. An 'auxiliary management hunt' will be used in future years as needed to address damage and elk/cattle co-mingling issues.

Managers believe a high proportion of elk in this herd typically attend feedgrounds during most winters and are counted during big game surveys. Large carnivores (wolves and grizzly bears) have likely contributed to reduced hunter participation in the northern portion of this herd unit (hunt area 95), and are likely influencing elk productivity and survival. Lack of public access on private lands in hunt area 93 limits harvest and compromises female harvest goals within this herd. Additionally, a large portion of occupied elk habitat in hunt area 96 overlaps the Bridger Wilderness, limiting hunter accessibility and resulting in poor harvest rates during years with mild fall conditions when elk remain at higher elevations. Hunt area 87 is predominately national forest with good overall access, although persistent damage and elk/cattle co-mingling during the winter months remains a problem on some private lands.

**2.) Chronic Wasting Disease Monitoring & Management:** The Upper Green elk herd is a Tier 2 surveillance herd that was prioritized for CWD sampling from 2022-2024 with a collection goal of 200 CWD samples during the 3 year period. Due to a lack of wild game processors, sample collections have been challenging and rely mainly on field checked animals. From 2021-2023, 106 CWD samples have been collected/tested from adult, hunter-harvested elk with no positive animals for a 0.0% (0% - 3.4% with 95% CI) prevalence.

**3.) Population and Trend Evaluation:** Since 2012 a mid-winter trend count has been utilized to manage this herd instead of hand-derived population model estimates. This is a 'leaky' herd unit and as a result, a functional model has never been developed. The mid-winter trend objective for this herd is 2,900 elk (+/- 20%) for a range of 2,320 to 3,480 elk. The postseason 2023 winter trend count was 2,989 elk observed on Department-operated feedgrounds and native winter ranges. The 3-year average (2021-2023) winter trend count is 3,336 elk, within the management objective. Mild winter conditions during the 2023-24 winter resulted in no feeding at Soda Lake feedground, one of four feedgrounds in the herd unit, likely resulting in a lower trend count. Above average snow accumulations and colder temperatures during the 2022-23 winter resulted in a higher portion of elk located on feedgrounds compared to native winter range and a higher trend count. Winter and habitat conditions, wolf activity and timing of classification surveys have resulted in fluctuating trend count data on all four feedgrounds and native winter ranges in past years.



## Appendix A. Disease Management (E107)

A total of 45 medial retro-pharyngeal lymph nodes were collected from elk for CWD sampling within the Upper Green River elk herd unit from the beginning of hunting season through the end of the feeding season, with 43 samples from hunter harvested elk. One sample was not testable. An, additionally two samples were provided from hunters without reporting the age class, and were therefore not included in prevalence estimates. However, all samples tested negative and CWD has not been detected in elk within this herd. The Upper Green River elk herd is currently a priority herd, with the goal of collecting 200 samples from adult elk over three consecutive years. Currently in year 2, CWD samples now total 82; a total of 118 samples are needed to be collected during the 2024-25 hunting seasons in order to reliably estimate prevalence of CWD in this herd for the 3-year period.

Ear tags are permanently attached to all elk that are captured and released as part of brucellosis surveillance and research initiatives and are retrieved when an animal is harvested or when a carcass is discovered. This undertaking enhances our understanding of elk distribution and dispersion, and improves our knowledge of how diseases may potentially spread among elk herds. Ear tag returns from elk captured at Dell Creek feedground were reported from 14 elk, with 11 harvested in hunt area 87, and 3 harvested in hunt area 84. Two of the elk harvested in HA84 were reported with harvest locations; one in the Granite Creek drainage and one near the Hoback River.

A total of 79 elk were captured at two feedgrounds within the Upper Green herd unit this winter, with 34 yearling and older females that were sampled for exposure to *Brucella abortus*, the bacterial responsible for causing brucellosis, with thirteen samples testing positive indicating a 38% seroprevalence (Table 1). However, only one feedground (Dell Creek) was adequately sampled for a statistically valid estimate of seroprevalence, and capture efforts on Green River lakes feedground were primarily to deploy GPS collars (Table 1). GPS collars on a sample of the elk are used to facilitate monitoring of feedground populations throughout the brucellosis transmission season with the goal of at least 5 collars deployed per feedground at any given time. This monitoring helps in identifying and addressing any potential risks of elk-cattle disease transmission, and enables the monitoring of elk response to adjustments in feeding strategies aimed at lowering disease transmission rates during the feeding season. Collars are programmed to record locations at 2-hour intervals for a duration of four years.

Table 1. 2024 Upper Green River Elk Herd Unit Capture Summary

Feedground	# GPS collars deployed	# Captured	# Tested	# Positive	Seroprevalence
Soda Lake	0	0	0	0	N/A
Black Butte	0	0	0	0	N/A
Green River Lakes	2	2	2	0	0%
Dell Creek*	10	77	32	13	41%
<b>Totals =</b>	<b>12</b>	<b>79</b>	<b>34</b>	<b>13</b>	<b>38%</b>

\*statistically significant *n* for estimated prevalence to be within +/- 15% of true prevalence

Numerous game-proof fencing materials, purchased with funding through a cooperative agreement with APHIS have been distributed in this elk herd over the recent decades. Once erected, stackyards prevent food rewards to elk in areas with high brucellosis transmission risk, discouraging their occupancy and minimizing the potential for co-mingling of elk and cattle. Among the 20 new stackyards provided to cattle producers in Western Wyoming for this purpose in 2023, two stackyards were delivered to one landowner within the Upper Green River herd.

### **Soda Lake Feedground**

Due to mild winter conditions and low snow levels during the winter of 2023-24, the Soda Lake feedground was not operated and elk were allowed to free-range throughout the entire winter season. This feedground was also not operated during two similarly mild winters of 2020-21 and 2009-10. Even during normal to severe winters, this feedground typically has a relatively short feeding season. Because an elk trap is not located at this feedground, regular disease surveillance is not conducted and current brucellosis seroprevalence level is unknown. It's worth noting that the seroprevalence at individual feedgrounds is strongly correlated with the average duration of the feeding season, particularly the feeding end date. Research has indicated that *Brucella*-induced abortions in elk peak in March, April and May, so the earlier in the season managers can encourage elk to disperse, the lower the spread of the disease among elk and associated risk to cattle. Given that the management strategy at Soda Lake focuses on maintaining short feeding seasons to reduce disease transmission among elk, *B. abortus* seroprevalence among elk attending Soda Lake feedground is likely lower than average.

Numerous factors have led to repeated successful winter free-ranging of this segment of the Upper Green River elk herd population. Over recent decades, haystacks on private lands have reduced the potential for food rewards to elk. A 25-mile long elk fence constructed in the 1950's spans from the south end of Soda Lake Wildlife Habitat Management Area north to near New Fork Lake, intended to keep elk from drifting west onto private lands. GPS collars deployed on elk have aided in monitoring distributions throughout the winter, providing near real time elk locations to help inform if hazing operations are required. Numerous habitat treatments have been implemented on native ranges in areas suitable for wintering elk, leading to an improvement in both the quantity and quality of forage and a reduction in feedground dependency. Additionally, above-average forage production levels experienced during the 2023 growing season, attributed to the record snowfalls in winter 2022-2023 accompanied by ample spring rains, resulted in an abundance of residual forage on federally managed lands.

### **Black Butte Feedground**

No elk captures were attempted at the Black Butte elk feedground this season.

### **Green River Lakes Feedground**

On February 21, two adult female elk were captured via chemical immobilization at the Green River Lakes feedground in order to deploy two GPS collars. Neither tested positive for brucellosis (Table 1). There are currently 4 satellite collars deployed on elk that typically attend this feedground.

### **Dell Creek Feedground**

On February 14, a total of 77 elk were captured, including 32 test-eligible individuals (yearling and adult females), and 10 adult females were equipped with GPS collars, for a total of 14 GPS equipped

elk currently deployed at this feedground. Tests conducted at the WGFD Health Laboratory indicated that 41% (13 out of 32) had been exposed to *B. abortus* (Table 1), including 4 of the 10 yearlings in the sample. This result is consistent with the findings from the most recent surveillance effort in 2022, which reported a seroprevalence of 31%. An increase was expected due to the previous harsh winter and extended feeding season. The highest brucellosis seroprevalence ever documented at any feedground was 88% at the Dell Creek feedground in 2018. Given that the management strategy for Dell Creek feedground focuses on maintaining relatively long feeding seasons to maximize controlled separation between elk and nearby cattle herds, the prevalence of *B. abortus* on the feedground is expected to remain above average.

## 2023 - JCR Evaluation Form

SPECIES: Elk  
 HERD: EL108 - PINEDALE  
 HUNT AREAS: 97-98

PERIOD: 6/1/2023 - 5/31/2024

PREPARED BY: DEAN CLAUSE

	<u>2018 - 2022 Average</u>	<u>2023</u>	<u>2024 Proposed</u>
Trend Count:	2,013	1,943	1,950
Harvest:	426	557	550
Hunters:	1,390	1,262	1,300
Hunter Success:	31%	44%	42 %
Active Licenses:	1,487	1,446	1,500
Active License Success	29%	39%	37 %
Recreation Days:	10,435	10,424	10,500
Days Per Animal:	24.5	18.7	19.1
Males per 100 Females:	25	26	
Juveniles per 100 Females	31	40	

Trend Based Objective (± 20%) 1,900 (1520 - 2280)

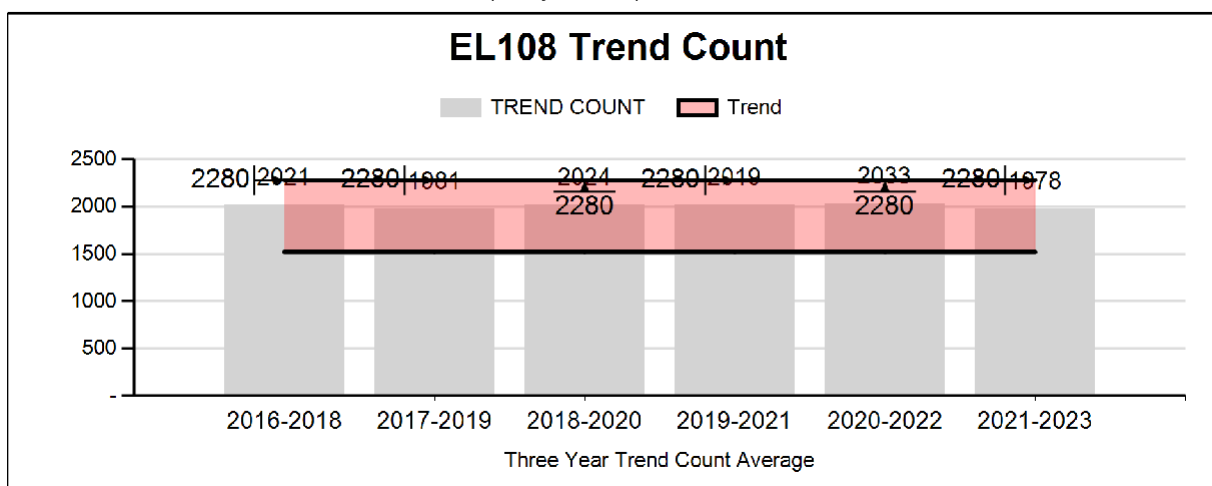
Management Strategy: Recreational

Percent population is above (+) or (-) objective: 2%

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

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

	<u>JCR Year</u>	<u>Proposed</u>
Females 2: 1 year old:	0%	0%
Males 2: 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



**2024 HUNTING SEASONS  
Pinedale Elk (EL108)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
97	Gen	Sept. 1	Sept. 19	Oct. 1	Oct. 15		Any elk
97	Gen			Oct. 16	Nov. 20		Antlerless elk
97	1	Sept. 1	Sept. 19	Sept. 20	Oct. 31	225	Any elk
97	1			Nov. 1	Nov. 30		Antlerless elk
97	6	Sept. 1	Sept. 19	Sept. 20	Nov. 30	175	Cow or calf elk
98	Gen	Sept. 1	Sept. 19	Oct. 1	Oct. 15		Any elk
98	Gen			Oct. 16	Nov. 20		Antlerless elk
98	1	Sept. 1	Sept. 19	Sept. 20	Oct. 31	350	Any elk
98	1			Nov. 1	Nov. 30		Antlerless elk
98	1			Dec. 1	Jan. 31		Antlerless elk valid between Scab Creek and the East Fork River
98	4	Sept. 1	Sept. 19	Sept. 20	Nov. 30	75	Antlerless elk
98	4			Dec. 1	Jan. 31		Antlerless elk valid between Scab Creek and the East Fork River
98	6	Sept. 1	Sept. 19	Sept. 20	Nov. 30	300	Cow or calf elk
98	6			Dec. 1	Jan. 31		Cow or calf elk valid between Scab Creek and the East Fork River

**2024 Region W Nonresident quota: 2,775**

**2023 Hunter Satisfaction:** 64% Satisfied, 21% Neutral, 15% Dissatisfied

**2023 Management Summary**

**1.) Hunting Season Evaluation:** Harvest strategies using a combination of limited quota and general licensed hunters combined with lengthy seasons have been successful in maintaining this herd unit within management goals. Snow accumulation at higher elevations during the hunting seasons greatly influences antlerless harvest in this herd, and hunter success is reflectively variable. Bull harvest (type 1 licenses) success is typically higher due to seasons opening early (Sept. 20) during the end of the rut. Mild fall weather conditions during 2021 resulted in low hunter success, increased hunter effort (days/harvest), and poor female harvest. Conversely, 2022 seasons had much better success and harvest due to more conducive fall hunting conditions (i.e., more snow). Although mild conditions persisted throughout the 2023 seasons, hunting success was fairly high with a near record estimated harvest of 404 total elk in hunt area 98.

The proposed 2024 hunting seasons remain similar to past years for this herd unit, using a combination of general and limited quota licensed hunters for both hunt areas 97 and 98. Limited quota license holders will be provided additional antlerless opportunities with the season extended to Nov. 30 for the third consecutive year. Additional opportunities will be provided to general licensed hunters for antlerless elk after the any elk season closes on October 15, as in past years. A late season hunt will remain in hunt area 98 to keep elk out of stored hay and reduce co-mingling with livestock on private lands.

Managers believe a high proportion of elk in this herd typically attend feedgrounds during most winters. Some interchange (~10%) of elk has been documented between the Pinedale herd and the adjacent South Wind River herd to the southeast via GPS collars and ear tags. More than half of the U.S. Forest Service lands in this herd are designated as Wilderness (Bridger Wilderness) where access is limited to foot or horseback travel. The remaining Forest Service lands outside Wilderness have moderate vehicle and trail access. Lack of public access on private lands in hunt area 98 along Scab and Silver Creeks provides a refuge for elk and limits harvest opportunities. Years with persistent deep snow at higher elevations results in elk distributing to lower elevations where access is easier for hunters, resulting in increased harvest. Weather is a very influential factor on harvest rates, especially for antlerless elk, in this herd unit.

**2.) Chronic Wasting Disease Monitoring & Management:** The Pinedale elk herd is a Tier 2 surveillance herd that was prioritized for CWD sampling from 2019-2021. Due to somewhat limited Forest Service access, a large amount of wilderness within the national forest, and low harvest due to mild conditions, sample collections have been challenging. During the past three years (2021-2023), 153 CWD samples have been collected/tested with 2 positive animals for a 1.4% (0.2% - 5.0% with 95% CI) prevalence.

**3.) Population and Trend Evaluation:** The mid-winter trend count objective for the Pinedale elk herd is 1,900 elk, with a range of 1,520-2,280 (+/-20%) animals. The 2023 trend count was 1,943 elk observed on Department-operated feedgrounds and native winter ranges. Due to mild winter conditions during 2023-2024, no elk were fed at Fall Creek, one of the three feedgrounds located in this herd. The 2021-2023 three-year winter trend count average is 1,978 elk, which is within the herd objective. This herd unit is designated as a 'recreational' herd with a bull:100 cow ratio management objective for 15- 29 bulls:100 cows. The 2023 bull:cow ratio was documented at 26, similar to the 2018-2022 average of 25, meeting the management objective.

**4.) Chapter 56 Permit (ID #69) – Elk hunt area 98**

- Valid 1/1/2024 – 12/31/2024 in Pinedale Region
- Authorization to remove up to 50 elk
- Sublette County – several participating WGFD employees in harvest
- Total harvest = 24 elk (22 cows and 2 spikes) on 2/29/24 and 3/1/24

## Appendix A. Disease Management (E108)

A total of 51 retro-pharyngeal lymph nodes were collected from elk for CWD sampling within the Pinedale elk herd unit from the beginning of hunting season through the end of feeding season, with 49 samples from hunter harvested elk. Despite finding CWD-positive elk from hunter-killed samples in hunt area 98 during each of the two previous hunting seasons, all samples were negative.

Ear tags are permanently attached to all elk that are captured and released as part of brucellosis surveillance and research initiatives and are retrieved when an animal is harvested or when a carcass is discovered. This undertaking enhances our understanding of elk distribution and dispersion, and improves our knowledge of how diseases may potentially spread among elk herds. Ear tag returns from nine hunter-killed elk that were captured at feedgrounds within this herd were harvested within the herd unit boundaries, except for one. That elk was a 2.5 year old adult female captured on the Fall Creek feedground as a yearling during winter 2023 and was harvested near Bull Lake in HA127 on the Wind River Indian Reservation during late December 2023.

A total of seven adult female elk were captured on feedgrounds within the Pinedale herd this winter, all were sampled for exposure to *Brucella abortus*, the bacterial responsible for causing brucellosis, and two tested positive, indicating a 29% seroprevalence. However, the sample size was not statistically adequate for estimating prevalence and captures were primarily geared toward deploying GPS collars (Table 1). GPS collars on a sample of the elk are used to facilitate monitoring of feedground populations throughout the brucellosis transmission season with the goal of at least 5 collars deployed per feedground at any given time. This monitoring helps in identifying and addressing any potential risks of elk-cattle disease transmission, and understanding elk response to adjustments in feeding strategies aimed at lowering disease transmission rate during the feeding season. Collars are programmed to record locations at 2-hour intervals for a duration of four years.

Table 1. 2024 Pinedale Elk Herd Unit Capture Summary

Feedground	# GPS collars deployed	# Captured	# Tested	# Positive	Seroprevalence
Muddy Creek	4	4	4	1	25%
Scab Creek	3	3	3	1	33%
Fall Creek	0	0	0	0	N/A
<b>Totals =</b>	<b>7*</b>	<b>7</b>	<b>7</b>	<b>2</b>	<b>29%*</b>

\*statistically insignificant *n* for estimated prevalence to be within +/- 15% of true prevalence

Numerous game-proof fencing materials, purchased with funding through a cooperative agreement with USDA APHIS have been distributed in this elk herd unit over recent decades. Once erected, stackyards prevent food rewards to elk in areas with high brucellosis transmission risk, discouraging their occupancy and minimizing the potential for co-mingling of elk and cattle. None of the 20 new stackyards provided to cattle producers in western Wyoming in 2023 for this purpose were erected within the Pinedale elk herd unit.

### **Muddy Creek Feedground**

On February 23, four adult female elk were captured using chemical immobilization at the Muddy Creek feedground in order to deploy four GPS collars. Among the captured elk, one of them tested positive for brucellosis, as indicated in Table 1. There are currently 9 satellite collars on elk that spend winter at this feedground.

### **Scab Creek Feedground**

Extensive trap repair and maintenance was carried out at the Scab Creek elk feedground to support brucellosis surveillance efforts this year. However, due to a mild winter that made it challenging to keep elk on the feedground, plans for elk trapping were postponed until 2025 to minimize the risk of elk displacement and potential co-mingling with cattle. In an effort to deploy GPS collars with minimal disturbance, three adult female elk were chemically immobilized on February 20th, bringing the total of currently deployed collars at this feedground to eight. Among these newly captured elk, one tested positive for brucellosis (Table 1).

On February 24th, USDA APHIS Wildlife Services utilized a helicopter and aerial gunning to conduct the lethal removal of wolves within the predator zone and inadvertently displaced most of the elk from the Scab Creek feedground into a high risk situation for spreading brucellosis to cattle. Elk hazing efforts conducted by the WGFD over the subsequent two-week period involved six drone flights logging nearly 10 hours of flight time moving elk groups of up to 600 animals while utilizing tracked side-by-sides, snowmobiles, and pickup trucks for ground transportation. Twenty-four elk were lethally removed from cattle feedlines on private lands across four days to deter elk. Elk redistribution efforts were successful, and carcasses from lethal removals were donated to members of the public.

### **Fall Creek Feedground**

Due to mild winter conditions and low snow levels experienced during the winter of 2023-2024, the Fall Creek feedground was not operated and elk were allowed to free-range throughout the entire winter season. This marks the first time that elk were not fed at this feedground at all during winter. In 2020-21, a similarly mild winter, elk were minimally fed over a 4-day period in late-Feb/early-March as a precaution during a snowfall event, and during the mild winter of 2009-10, a portion of the feedground elk population (n=275) were fed for 27 days in effort to conduct elk trapping activities associated with a disease reduction effort.

Numerous factors led to successful winter free-ranging of this elk population. Over recent decades, haystacks on private lands have reduced the potential for food rewards to elk. GPS collars deployed on elk have aided in monitoring distributions throughout the winter, providing near real time elk locations to help inform if hazing operations are required. Numerous habitat treatments have been implemented on native ranges associated in areas suitable for wintering elk, leading to an improvement in both the quantity and quality of forage and a reduction in feedground dependency for this herd segment. Additionally, above-average forage production experienced during the 2023 growing season, attributed to the record snowfalls of 2022-2023 accompanied by ample spring rains, resulted in an abundance of residual forage on federally managed lands.

The absence of the supplemental feeding leads to significant reductions in brucellosis transmission and prevalence among elk, translating to lower risk to cattle. Furthermore, since CWD is known to be present in this elk herd, the lack of concentrated feeding areas slows the spread of the disease and potential harmful effects on the population by preventing them from congregating at high densities on a small area for a prolonged period of time. This also virtually eliminates the occurrence of necrotic stomatitis (aka hoof rot).



## 2023 - JCR Evaluation Form

SPECIES: Moose

PERIOD: 6/1/2023 - 5/31/2024

HERD: MO105 - SUBLETTE

HUNT AREAS: 3, 5, 10, 20-25

PREPARED BY: DEAN CLAUSE

	<u>2018 - 2022 Average</u>	<u>2023</u>	<u>2024 Proposed</u>
Trend Count:	1,176	979	1,200
Harvest:	146	133	130
Hunters:	158	146	145
Hunter Success:	92%	91%	90%
Active Licenses:	158	146	145
Active License Success	92%	91%	90 %
Recreation Days:	1,260	1,351	1,250
Days Per Animal:	8.6	10.2	9.6
Males per 100 Females:	70	70	
Juveniles per 100 Females	43	46	

Trend Based Objective (± 20%) 1,500 (1200 - 1800)

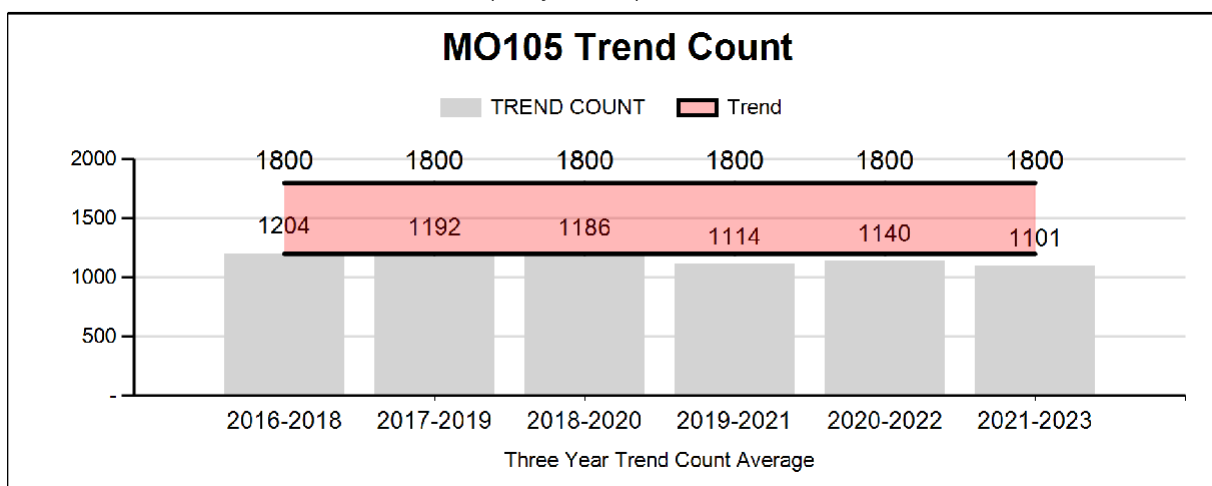
Management Strategy: Special

Percent population is above (+) or (-) objective: -34.7%

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):**

	<u>JCR Year</u>	<u>Proposed</u>
Females 2: 1 year old:	0%	0%
Males 2: 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



**2024 HUNTING SEASONS  
Sublette Moose (MO105)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
3	1	Sept. 1	Sept. 19	Sept. 20	Oct. 31	15	Antlered moose (13 residents; 2 non-resident)
5	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	20	Antlered moose (19 residents; 1 non-residents)
10	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	8	Antlered moose (7 residents; 1 non-residents)
20	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	15	Antlered moose (14 residents; 1 non-residents)
21	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	2	Antlered moose (2 residents)
22	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	5	Antlered moose (4 residents; 1 non-resident)
23	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	10	Antlered moose (9 resident; 1 non-resident)
24	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	20	Antlered moose (18 residents; 2 non-residents)
25	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	44	Antlered moose (40 residents; 4 non-residents)
25	4	Sept. 1	Sept. 30	Oct. 1	Oct. 31	5	Antlerless moose, except cow moose with calf at side (4 residents; 1 non-resident)

**License Summary:** Type 1 = 139 licenses (126 residents; 13 non-residents); Type 4 = 5 licenses (4 residents; 1 non-resident)

**2023 Management Summary**

**1.) Hunting Season Evaluation:** Moose harvest during the 2023 season continued to maintain high success at 91% with hunter effort around 10 days/harvest for the overall herd unit. Hunt areas within the herd ranged from 0%-100% success and 1-16 days/harvest for bulls. Managers also attempt to maintain an average age of harvest for bulls around 4.0 years or higher to provide hunters with opportunities to harvest ‘trophy’ class bulls. The previous 5-year average age for harvested bulls is 4.2 years old. An average antler width of 38 inches was reported in this herd during 2023, derived from 55% of successful moose hunters that submitted antler information with tooth collections.

Success, hunter effort and bull quality vary among individual hunt areas somewhat due to weather conditions, license allocations and local population fluctuations. Although license allocations have remained near 150 the past few years, the total number of licenses issued has declined from a total of 630 licenses in 2002, to 150 in 2023, a total decrease of 480 (76%). These reductions by license type since 2002 equates to declines of 98% (230 to 5) cow/calf (type 4) licenses and 64% (400 to 145) bull (type 1) licenses. The 2024 moose seasons in this herd unit will be reduced by five licenses in hunt area 5 to maintain bull quality, and one license in HA25 for statewide quota mathematical equity (90% resident and 10% non-resident) for a total of 139 type 1 licenses. Five type 4 licenses will again be available in hunt area 25, for a total herd quota of 145 licenses.

**2.) Herd Unit Evaluation:** Undetermined moose deaths have been documented within this herd during past years. The significance of these spring mortalities are currently unknown, and it

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

**3.) Population and Trend Evaluation:** Data for this herd unit suggest this moose population declined during the late 1990's, stabilized in 2004 and 2005, slowly increased through 2013, and has stabilized to present. Starting in 2013, a mid-winter trend count was approved as the management objective for this herd unit instead post-hunt population estimates. The mid-winter trend objective for this herd is 1,500 moose ( $\pm 20\%$ ), a range of 1200 – 1800 animals. The postseason 2023 mid-winter trend count of 979 moose was much lower than the count of 1331 in 2022 but similar to the 2021 count (Table 1.) The most recent 3-year average (2020- 2023) trend of 1,101 moose is below the trend objective. Below normal snow accumulations were attributed to the low trend counts in both 2021 and 2023 compared to 2022 where winter snow accumulations were well above average along with winter temperatures below average. Moose classification data from the 2023 postseason survey flights documented a bull ratio of 70:100 cows and calf ratio of 46:100 cows, similar to the previous 5-year average bull:cow:calf ratio of 70:100:43. Maintaining comparable classification survey efforts (flight time) compared to previous years can provide managers a reliable data set that reflect population trends in this herd unit. These mid-winter trend counts do not reflect the actual moose population, as not all areas with wintering moose are surveyed and not all moose are observed in those areas that are surveyed.

Table 1. Trend counts by Hunt Area for the Sublette Moose Herd Unit, 2014-2023.

<u>Hunt Area</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
3	22	32	20	26	10	288	313	248	355	279
4	224	235	366	280	314	-	-	-	-	-
5	34	73	33	65	47	53	98	90	34	89
10	10	31	16	19	36	22	3	9	-	13
20	65	49	36	60	35	54	21	7	25	12
21	7	17	23	1	11	15	13	-	16	-
22	17	13	2	11	2	-	22	13	32	1
23	37	32	17	32	16	25	-	16	31	13
24	-	-	-	-	-	-	-	-	-	-
<u>25</u>	<u>664</u>	<u>517</u>	<u>774</u>	<u>620</u>	<u>739</u>	<u>794</u>	<u>626</u>	<u>611</u>	<u>838</u>	<u>572</u>
<b>Total</b>	<b>1080</b>	<b>999</b>	<b>1287</b>	<b>1114</b>	<b>1210</b>	<b>1251</b>	<b>1096</b>	<b>994</b>	<b>1331</b>	<b>979</b>

\*Areas 3 and 4 combined into Area 3 starting postseason of 2019

**4.) Harvest Age and Antler Width Data:** A total of 74 teeth representing approximately 54% of the reported 2023 harvest were aged using cementum annuli analysis. The 2023 tooth sample size was the lowest reported over the past 10 years, ranging between 54% and 72% of the total harvest. The 2023 tooth ages from the WGFD lab tallied an average age of 4.4 (median age = 4.0), remaining relatively similar at approximately 4.0 years during the past two decades (Figure 1). The low sample sizes used to derive female ages in recent years results in erratic and unreliable trends.

An average antler width of 38 inches, similar to most years, was reported in this herd during 2023, derived from 48% of successful bull moose hunters that submitted antler information with tooth collections.

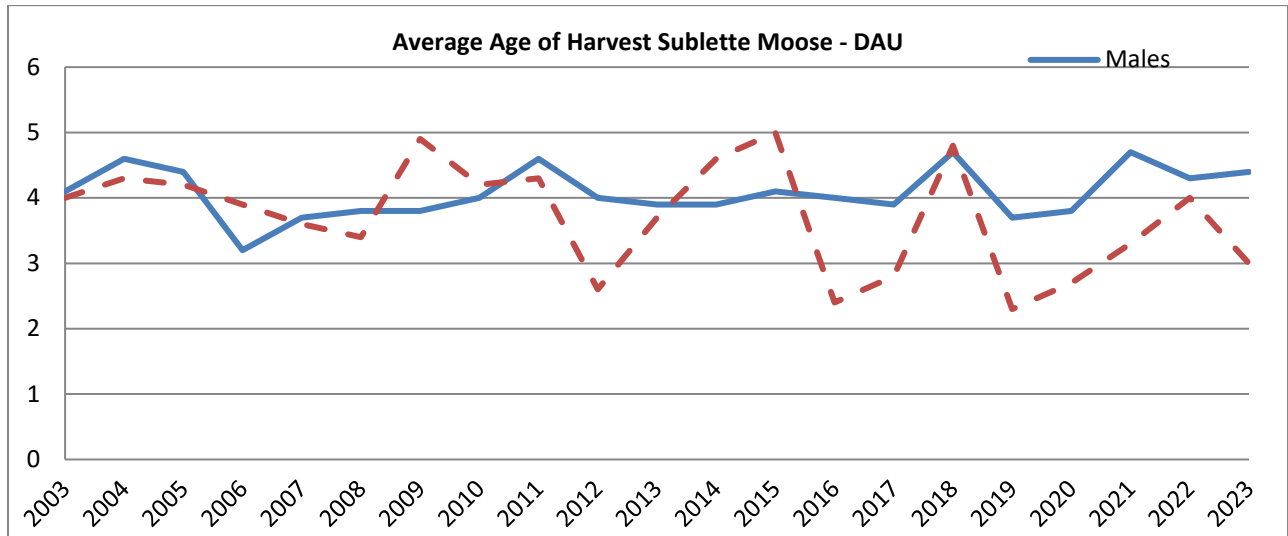


Figure 1. Average age of harvested male and female moose, Sublette Herd Unit, 2003-2023.

## 2023 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2023 - 5/31/2024

HERD: MD104 - SUBLETTE

HUNT AREAS: 130-131, 138-142, 146, 150-156

PREPARED BY: DEAN CLAUSE

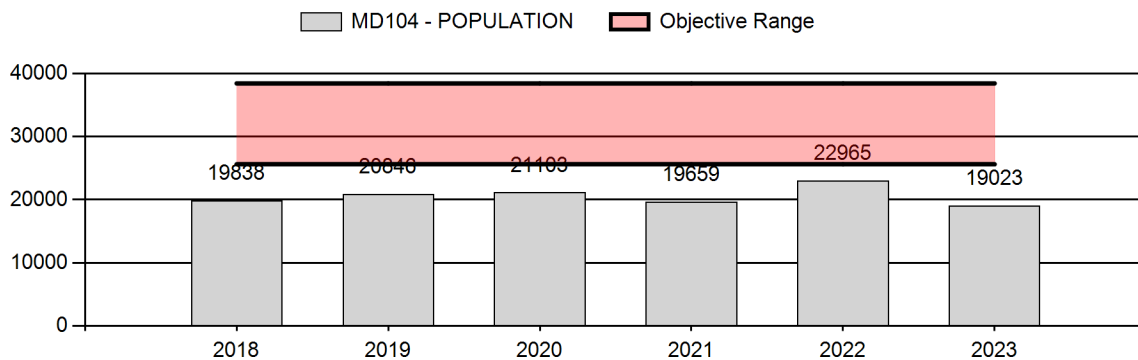
	<u>2018 - 2022 Average</u>	<u>2023</u>	<u>2024 Proposed</u>
Population:	20,882	19,023	21,000
Harvest:	1,377	583	450
Hunters:	4,123	2,421	2,000
Hunter Success:	33%	24%	22%
Active Licenses:	4,164	2,421	2,000
Active License Success:	33%	24%	22%
Recreation Days:	21,959	13,259	10,000
Days Per Animal:	15.9	22.7	22.2
Males per 100 Females	35	34	
Juveniles per 100 Females	69	60	

Population Objective (± 20%) :	32000 (25600 - 38400)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-40.6%
Number of years population has been + or - objective in recent trend:	7
Model Date:	3/1/2024

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ♦ 1 year old:	0%	0%
Males ♦ 1 year old:	19%	15%
Proposed change in post-season population:	-17%	+17%

## Population Size - Postseason



**2024 HUNTING SEASONS  
Sublette Deer (MD104)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
130	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 6		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
130	1	Sept. 1	Sept. 30	Oct. 15	Oct. 31	5	Antlered mule deer four (4) points or more on either antler or any white-tailed deer
131	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 6		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
138	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
138,139, 140,142, 143	3	Sept. 1	Sept. 30	Oct. 1	Nov. 30	50	Any white-tailed deer
139	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
140	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
141	1	Sept. 1	Sept. 30	Oct. 1	Oct. 21	50	Antlered mule deer four (4) points or more on either antler or any white-tailed deer
141	1			Oct. 22	Oct. 31		Antlered mule deer four (4) points or more on either antler or any white-tailed deer on national forest
142	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
146	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
150	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
148,150, 151,152, 155,156	3	Sept. 1	Sept. 14	Sep. 15	Nov. 30	75	Any white-tailed deer
148,150, 151,152, 155, 156	8	Sept. 1	Sept. 14	Sep. 15	Nov. 30	75	Doe or fawn white-tailed deer
151	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
152	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
153	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
154	Gen	Sept. 1	Sept. 14	Sep. 15	Sep. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer

155	Gen	Sept. 1	Sept. 14	Sept. 15	Sept. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer
156	Gen	Sept. 1	Sept. 14	Sept. 15	Sept. 25		Antlered mule deer four (4) points or more on either antler or any white-tailed deer

\*hunt areas with green font are not part of the Sublette Herd Unit.

**2024 Region H nonresident quota:** 350 licenses

**2023 Hunter Satisfaction:** 36% Satisfied, 29% Neutral, 35% Dissatisfied

### 2023 Management Summary

**1.) Hunting Season Evaluation:** The 2023 hunting seasons were more conservative in response to above average winter deer losses due to harsh winter conditions during 2022-23. Deep snow and cold temperatures persisted on all winter ranges resulting in lower survival for both adult and juvenile animals. Since 2016, this herd has seen little growth, and remains below the population objective range of 25,600 to 38,400 deer, although the buck ratio objective (range of 30-45 bucks:100 does) has been maintained. The 2023 hunting season limited harvest to bucks with an antler point restriction (ARP) of three points or better on either antler. Limited quota doe/fawn licenses (6 & 7) near the town of Farson and lower Green River were eliminated, and any deer harvest opportunities on youth general licenses were restricted to buck only harvest. For 2024, general license hunting opportunities will be more conservative, opening on September 15 and closing September 25 (5 days shorter than in 2023; 11 days shorter than in 2022) with an APR of four points or better in most hunt areas within the herd. The APR should facilitate maintaining buck ratios within management objectives, and will be removed as buck ratios improve. The type 3 and type 8 licenses provide limited white-tailed deer harvest in the herd unit. Limited quota licenses (type 1) in Areas 130 and 141 and Non-resident Region H licenses were reduced from 400 licenses in 2023 to 350 licenses in 2024.

Winter survival, habitat condition and quality on winter ranges, and habitat loss (direct and indirect) from gas and residential development are the primary issues influencing population dynamics in this herd unit. During the past 10 years, the Sublette deer herd experienced three winters that resulted in above average fawn mortality (> 50% loss). Winter conditions experienced in 2018-19 resulted in winter fawn losses of 50+%, and the winter of 2016-17 resulted in considerable mortality when fawn losses were estimated near 85% and adult mortality near 35%. During the winter of 2010-11, fawn mortality estimates exceeded 70%. The 2022-23 winter was similar to 2016-17, although tough winter conditions persisted much longer into spring, and the number of days recorded with below zero (F) temperatures broke long term records. The severe 2022-23 winter conditions resulted in above average winter deer mortality with an estimated fawn loss around 70%, and estimated adult female mortality neared

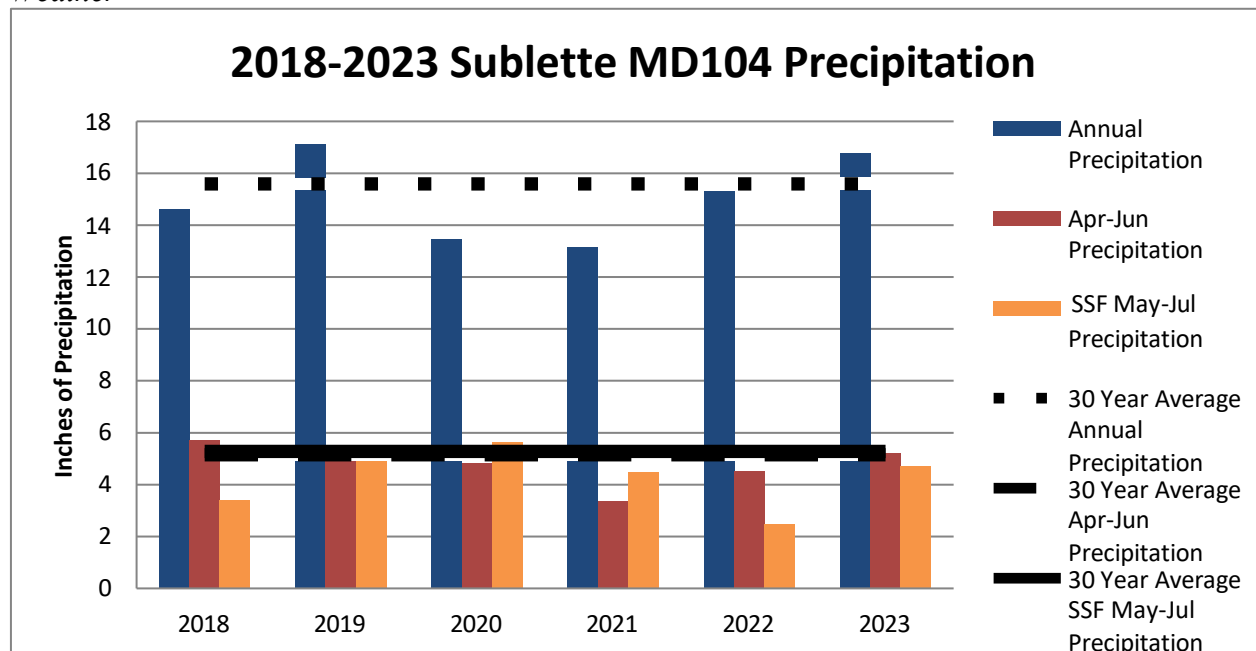
30%. This winter loss and foreseeable reduction in buck ratios triggered managers to implement an APR, shorten seasons, and reduce quotas in 2023 to maintain buck ratios. Winter fawn mortality estimates average around 30% on most years when winter severity is moderate to average. Current annual growth on key winter browse species has varied among years, but the overall habitat conditions remain poor with some improvement on certain years.

Gas field development has and will continue to impact deer numbers within this herd. The Pinedale Anticline gas field development overlaps with crucial winter range located on the Mesa, where annual population estimates indicate deer numbers have declined by roughly 40% from 2001–2017. Studies have demonstrated that deer avoid areas with intensive winter gas development, resulting in less forage available for wintering deer within and adjacent to gas development. Overall hunter satisfaction has been good within this herd in most years, even following years with above average winter mortality and fewer deer.

**2.) Management Objective Review:** The Sublette Deer Herd has approached or maintained a population near the objective of 32,000 only three times since 1993, and when high population levels have been observed, typically the next hard winter results in above average mortality. Local managers believe lowering the population objective is likely warranted, and could help sustain a more stable populations. However, with the current low deer population mostly due to extreme winter conditions during 2022-23, the timing for any proposed objective change will likely be better received by the public when the population has increased from current levels. Thus, we recommend no changes to the objective at this time. The next herd unit objective review is scheduled for 2029 and pending population performance, a population objective change will likely be proposed.

**3) Mule Deer Habitat Information:**

*Weather*





### *Precipitation*

The Parameter-Elevation Relationships on Independent Slopes Model (PRISM) was utilized to estimate precipitation by calculating a climate-elevation regression for each Digital Elevation Model grid cell (4km resolution) for the Sublette mule deer herd during the water year from October 2022 through September 2023. Annual precipitation was slightly above the 30 year average, however, a lack of climate data collection stations in low elevations, which received well above average moisture during the severe winter of 2022-23, is not reflected in this measurement. Precipitation during the growing season (April – June) and precipitation that fell between May and July, contributing to plant growth in higher elevation seasonal ranges, were at or slightly below average.

### *Winter Severity*

Most low elevation winter ranges experienced below or slightly below average monthly snow fall accumulation between November 2023 and April 30, 2024. SNOWTEL sites at higher elevations showed the snow water equivalent ranging from 89-109% of the median as of May 13, 2024 suggesting soil moisture conditions near average or slightly below average at most locations to begin the 2024 growing season. Average monthly temperatures recorded from locations near winter ranges were all consistently warmer than the long-term monthly averages between November 2023 and February 2024. Overall, winter conditions provided deer access to forage and did not significantly restrict movement.

### *Significant Events*

Several habitat improvement efforts occurred within the herd unit during 2023. Approximately 8,618 acres were treated with aerial herbicide to control cheatgrass, ranging from the Prospect Mountains to summer range habitats in Teton, County. 15 miles of fence were modified or converted to wildlife-friendly standards, including the placement of 16 crossing structures located on winter range habitats. Additional mechanical prep for future prescribed fire operations were also completed on Monument Ridge.

### *Habitat Monitoring*

Winter range shrub transects were monitored at six locations throughout the Mesa/Irish Canyon/Long Draw winter ranges during fall of 2023 to evaluate trends in annual leader growth of Wyoming big sagebrush and antelope bitterbrush. Results show that growth was near double the long-term average for all sites.

Irish Canyon + Long Draw - Bitterbrush

2023 = 4.70"

Average = 2.67"

Irish Canyon + Long Draw - Sagebrush

2023 = 2.07"

Average = 0.95"

Mesa - WY Big Sagebrush

2023 = 1.78"

Average = 0.75"

### Rapid Habitat Assessments

In 2015, Department personnel initiated the Rapid Habitat Assessment methodology to survey important mule deer habitats. This method strives to capture large-scale habitat quality metrics to better understand how the habitat is functioning for the current population of mule deer. In the Sublette Herd during 2023 department personnel completed 4,033 acres of aspen, rangeland, and special surveys within the Pinedale and Jackson Regions. Of these acres, 3.8% were meeting objectives and the remaining 96.2% were considered partially meeting objectives, but trending down.

**3.) Chronic Wasting Disease Management:** The Sublette mule deer herd is a Tier 1 surveillance herd that has been identified as an ongoing priority area for CWD sampling. A total of 325 hunter-harvested CWD samples have been collected from deer in this herd during 2021-2023. During this 3-year period, four adult bucks have tested positive for CWD for a 2.5% (4/325) prevalence, while no positive deer have been found in any other sex/age class (Table 1). An adult female was the first deer to test positive in this herd in April, 2017.

Table 1. CWD prevalence for hunter-harvested mule deer in the Sublette Mule Deer Herd, 2021-2023.

Year(s)	Percent CWD-Positive and (n) – <i>Hunter Harvest Only</i>		
	Adult Males (CI = 95%)	Yearling Males	Adult Females
2023	6.3% (n=63)	0% (3)	0% (2)
2021-2023	2.5% (1.0-4.8%, n=325)	0% (50)	0% (14)

**4.) Population and Trend Evaluation:** The postseason population objective for this herd unit is 32,000 deer (+/- 20%). Models are utilized annually using harvest, sex/age ratios, and survival data to project population estimates and trends for this herd. During the previous decade, a time-specific juvenile and constant adult survival spreadsheet model provided the best overall performance compared to other models, following population trends quite well along with realistic population estimates. The 2023 postseason spreadsheet population estimate is near 16,000 deer. A new model program, Integrated Population Model (IPM) has also been utilized since 2021 and will most likely be the main model used for the Sublette Herd in future years. Excluding some issues identified in 2021 with the IPM, the 2022 IPM estimate appears to produce population trends and estimates that are also realistic and somewhat similar the past spreadsheet model. The 2023 postseason IPM population mean estimate is 19,000 deer, a difference of about 3,000 deer between the two models. Tough winter conditions during 2022-23 resulted in known winter losses estimated at 30% for adult females and 70% for fawns. Overall, the 2023 IPM postseason population estimate suggests a decline of roughly 17%, but the population likely experience a more considerable decrease. The 2023 postseason classification ratio data resulted in higher buck and fawn ratios than expected following the high mortality observed during the 2022-23 winter, and is likely a reason that the IPM suggest a more moderate decline.

During February and March of 2022 a sightability survey was conducted for the first time in the Sublette herd, and estimated a 2021 postseason population of 20,025 deer (raw count = 15,153 X 1.19 (sightability inflation) X 1.11 (sampling inflation)). Sightability surveys can be very useful for grounding abundance estimates in the models, and for evaluation of past and current models.

Another sightability survey, currently planned for 2027, should help align the IPM following the uncertain population decline from the 2022-23 winter, and assist managers with tracking the herd's rebound. Trend counts from postseason classification counts also reflect the population trends quite well in this herd, as survey time and coverage has remained mostly similar from year to year. The 2023 documented buck ratios were 34:100 does (6 yearling bucks:100 does) and similar to the past 5-year average.