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SPECIES: Bighorn Sheep   PERIOD: 6/1/2020 - 5/31/2021
HERD: BS121 - DARBY MOUNTAIN
HUNT AREAS: 24   PREPARED BY: GARY FRALICK

	2015 - 2019 Average	**2020**	**2021 Proposed**
Trend Count:	50	67	45
Harvest:	1	1	1
Hunters:	1	1	1
Hunter Success:	100%	100%	100%
Active Licenses:	1	1	1
Active License Success	100%	100%	100 %
Recreation Days:	2	12	3
Days Per Animal:	2	12	3
Males per 100 Females:	220	83	
Juveniles per 100 Females	70	40	

Trend Based Objective (± 20%)	65 (52 - 78)
Management Strategy:	Special
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):

	JCR Year	**Proposed**
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%

BS121 Trend Count
TREND COUNT Trend

Three Year Trend Count Average	Trend Count	Trend
2013-2015	33	78
2014-2016	31	78
2015-2017	31	78
2016-2018	34	78
2017-2019	35	78
2018-2020	58	78

2021 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 (resident)

2020 Hunter Satisfaction: 100%

2021 Management Summary

1.) Hunting Season Evaluation: The 2021 bighorn sheep hunting season will be open for hunting for the 6th consecutive year. A total of one (1) limited quota license will be issued for any ram to a resident hunter. This hunting season will likely result in the harvest of one adult ram 2+ years old. The posthunt 2021 population trend count is projected at approximately 45-60 sheep.

2.) **Management Objective Review:** The population objective for the Darby Mountain herd was changed from 150 bighorn sheep to a trend-based objective of 65 sheep in 2016. Managers reviewed the objective internally during 2021 and determined an objective change is not warranted at this time.

3.) **Herd Unit Evaluation**: During summer ground surveys in 2020, a total of 46 bighorn sheep were observed. These observations comprised: 24 rams; 8 ewes; 6 juveniles; and 8 unclassified sheep. The first comprehensive posthunt helicopter survey since 2017 was conducted on March 3, 2021. A total of 67 sheep were observed with the following age/ sex composition: 24, 2+ year old rams; 1 yearling ram; 30 ewes; and 12 lambs. A sufficient number of rams were observed to justify the issuance of one (1) license for any ram in the 2021 hunting season. In recent years, pre-season lamb:ewe ratios indicate above average production. Posthunt observed lamb:ewe ratios were recorded at 40 lambs:100 ewes. Sheep distribution continues to be observed on Fish Creek and Darby Mountains, and along the windswept ridges in Middle Piney Creek, Straight Creek, North Piney Creek and South Cottonwood Cr eek west of Triple Peak. Bighorn sheep are typically observed along the crest of the Wyoming Range from Wyoming Peak north to Sheep Creek.

In 2020 the fifth 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 8.5 years of age or older.

2020 - JCR Evaluation Form

SPECIES: Elk   PERIOD: 6/1/2020 - 5/31/2021
HERD: EL104 - HOBACK
HUNT AREAS: 86-87   PREPARED BY: DEAN CLAUSE

	2015 - 2019 Average	2020	2021 Proposed
Trend Count:	1,069	1,520	1,300
Harvest:	204	325	450
Hunters:	719	885	1,000
Hunter Success:	28%	37%	45 %
Active Licenses:	728	894	1,000
Active License Success	28%	36%	45 %
Recreation Days:	4,617	5,483	6,500
Days Per Animal:	22.6	16.9	14.4
Males per 100 Females:	17	16	
Juveniles per 100 Females	28	28	

Trend Based Objective (± 20%)	1,100 (880 - 1320)
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	38%
Number of years population has been + or - objective in recent trend:	2

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

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

EL104 Trend Count
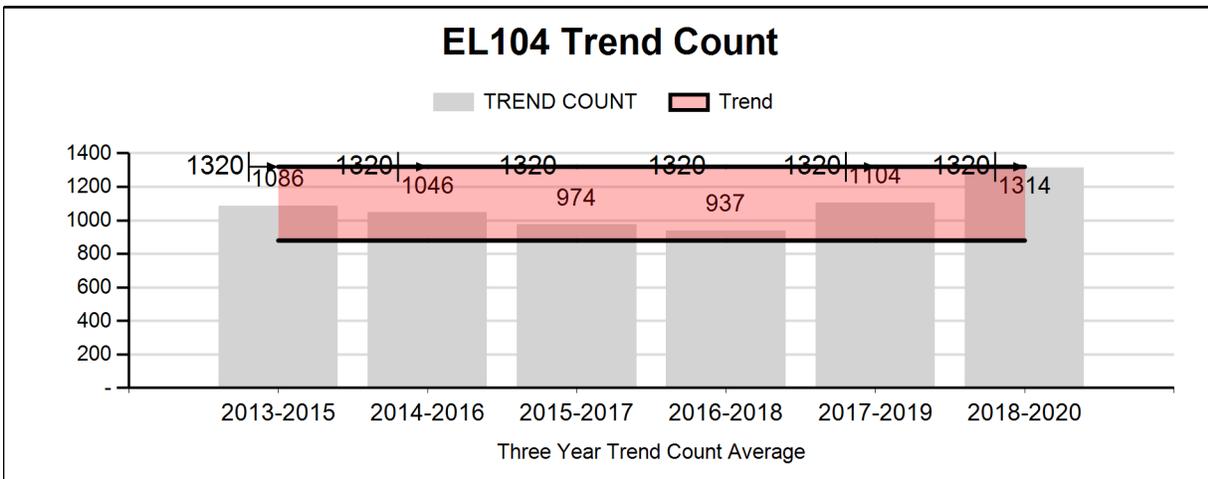
2021 HUNTING SEASONS
Hoback Elk (EL104)

Hunt Area	Type	Archery Dates Opens	Closes	Season Dates Opens	Closes	Quota	Limitations
86	Gen	Sept. 1	Sept. 25	Sep. 26	Oct. 31		Any elk
86	Gen			Nov. 1	Nov. 12		Antlerless elk
87	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
87	Gen			Nov. 1	Nov. 12		Antlerless elk
87	6			Dec. 1	Jan. 31	75	Cow or calf elk valid south and east of Dell Creek, north and east of U.S. Highway 191, and west of the North Fork of Fisherman Creek
87	7	Sept. 1	Sept. 30	Oct. 15	Nov. 12	50	Cow or calf elk

2020 Hunter Satisfaction: 70% Satisfied, 16% Neutral, 14% Dissatisfied

2020 Management Summary

1.) Hunting Season Evaluation: During the past 5 years, two major wildland fires (Cliff Creek and Roosevelt) have occurred within this herd unit influencing hunter participation, harvest and elk distribution. During the past two years it has become apparent that higher numbers of elk are wintering within this herd unit. It is speculated that increased forage resulting from these recovering fires possibly combined with increased hunting pressure in adjacent hunt areas with more liberal seasons has redistributed elk from previous wintering locations and herd unit winter trend counts are now exceeding objectives. Hunter harvest and success rates have been increasing, while hunter effort is declining the past two years.

The 2021 hunting seasons will liberalize opportunities for "general" license hunters further into November to increase antlerless harvest. In conjunction to the general license season, fifty Type 7 cow/calf licenses are added valid in Area 87. Late season cow/calf limited quota licenses (Type 6) are also available as in past years to address crop damage and elk/livestock co-mingling in a portion of Area 87.

2.) Herd Unit Evaluation: A high proportion (>90%) of elk typically counted in this herd unit are located on feedgrounds during the winter due to deep snow conditions and little available native winter habitat. Elk are annually documented from ear tag returns and GPS collars moving into and out of this herd unit. In addition, winter trend counts can vary significantly from year to year. Elk depredation on private land haystacks and cattle and domestic bison feed lines continue to be a problem in most winters. Recent wildfires in the northwest and southeast portions of this herd unit have likely changed winter elk distribution.

3.) Population and Trend Evaluation: Starting in 2012, a mid-winter trend count was used to manage this herd unit instead of population model estimates. This is an extremely "leaky" herd unit and as a result, a functional computer simulation model has never been successfully developed. The post hunt population trend objective for this herd is 1,100 elk ($\pm$20%), with a range of 880 to 1,320 animals. The 2020 postseason winter trend count of 1,520 elk were observed on Department-operated feedgrounds and native winter ranges. The 2018- 2020 mid-winter three-year trend count average is 1,314 elk, near the upper trend objective for

this herd. This herd unit is designated as a "recreational" herd with a bull:100 cow ratio management objective of 15-29 bulls:100 cows. The 2020 bull:cow ratio was 16 with the previous five year average (2015-2019) of 17, both meeting this management objective.

2020 - JCR Evaluation Form

SPECIES: Elk   PERIOD: 6/1/2020 - 5/31/2021
HERD: EL106 - PINEY
HUNT AREAS: 92, 94   PREPARED BY: GARY FRALICK

	2015 - 2019 Average	2020	2021 Proposed
Trend Count:	2,189	2,005	2,100
Harvest:	849	831	790
Hunters:	2,922	2,662	2,700
Hunter Success:	29%	31%	29 %
Active Licenses:	3,113	2,850	2,700
Active License Success	27%	29%	29 %
Recreation Days:	24,218	21,705	21,500
Days Per Animal:	28.5	26.1	27.2
Males per 100 Females:	36	25	
Juveniles per 100 Females	31	25	

Trend Based Objective (± 20%)	2,400 (1920 - 2880)
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	-16.5%
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:	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%

EL106 Trend Count

2021 HUNTING SEASONS
PINEY ELK HERD UNIT (EL106)

Hunt Area	Type	Archery Dates		Season Dates		Quota	
92	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
92	6	Sept. 1	Sept. 30	Oct. 1	Nov. 23	150	Cow or calf
92	6	Sept. 1	Sept. 30	Nov. 24	Jan. 31		Cow or calf valid north of Hwy 354 and Sublette County Road 112, east of Sublette County Road 115, and south of South Beaver Creek
94	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
94	Gen	Sept. 1	Sept. 30	Nov. 1	Nov. 12		Antlerless elk
94	6	Sept. 1	Sept. 30	Oct. 1	Nov. 23	400	Cow or calf
94	7	Sept. 1	Sept. 30	Nov. 1	Nov. 30	100	Cow or calf valid north of Middle Piney Creek
	7	Sept. 1	Sept. 30	Dec. 1	Jan. 31		Cow or calf valid on private land north of North Piney Creek

2020 Hunter Satisfaction: 58% Satisfied, 23% Neutral, 19% Dissatisfied

2021 Management Summary

1.) **Hunting Season Evaluation**: The 2021 hunting seasons are designed to maintain hunting pressure in Hunt Area 94 where elk numbers, based on the current postseason survey, remain at or above desired levels. In Hunt Area 92, a reduction in hunting opportunity is proposed to address the declining number of elk attending the Jewett and Franz feedgrounds, and associated native winter ranges.

In Hunt Area 92, the desired population reduction based on trend counts on the Jewett and Franz feedgrounds and comments from hunters, has occurred since the liberalization of hunting opportunity in 2015. The general license portion of the November hunting season will be discontinued and the number of Limited Quota Type 6 licenses will be reduced from 200 to 150 licenses in order to affect a positive change in the number of elk counted on those two feedgrounds, and in response to hunter sentiment. Consequently, the reduction in hunting opportunity in 2021 should begin to stabilize the elk population in Hunt Area 92.

The emphasis to harvest adult female elk in Hunt Area 94 will continue for the 14th consecutive year by opening the limited quota antlerless elk hunt on October 1st and continuing general license and limited quota hunting opportunity into November. The number of days for the November portion of the general antlerless elk hunting season is November 1 to November 12. This season structure will allow general license hunters to maximize the November segment of the hunt to harvest elk that have moved to lower elevation, more accessible areas. The number of Type 6 and Type 7 licenses will remain unchanged from the numbers issued in 2019 and 2020. The addition of an area extension to the Type 7 license hunt from December through January on private lands north of North Piney Creek is an attempt to alleviate damage to stored crops and prevent elk from commingling with livestock.

2.) **Herd Unit Evaluation**: Substantial and sustained population reduction has been difficult to achieve in Hunt Area 94 despite some of the most liberal elk hunting seasons in western Wyoming. Management strategies have emphasized the harvest of antlerless elk with November hunting seasons and issuance of limited quota cow/calf licenses. Hunt Area 94, and specifically the Bench Corral feedground, has supported the highest number of elk throughout the herd unit (Appendix A). Consequently, hunting opportunities, especially for antlerless elk in Area 94 where trend counts continue to remain high, will continue to be liberal in order to affect the desired population reduction. Limited quota Type 6 cow/calf licenses have focused harvest on the antlerless segment of the population since these license holders may typically account for at least 35% of the antlerless harvest in the herd unit. Limited quota Type 7 cow/calf licenses have been designed to harvest elk that migrate to the Bench Corral feedground.

4.) **Chronic Wasting Disease Management**: The Piney elk herd is a Tier 2 surveillance herd that will be prioritized for CWD sampling in 2023 and 2024. However, during routine CWD surveillance at check stations and in the field during 2019 and 2020, a total of 29 CWD samples were collected from hunter-harvested elk with no CWD positive elk yet documented in this herd unit (Table 1). Currently, CWD management activities are focused on proper carcass disposal and surveillance through hunter-harvested elk, road-kills, and any elk exhibiting signs of sickness. In addition, the Department is employing general disease management principles on feedgrounds such as low-density feeding and reducing the length of the feeding season when feasible to reduce animal-to-animal contact rates and elk densities.

Table 1. Chronic wasting disease prevalence of hunter-harvested elk in the Piney Herd Unit.

Years	CWD Prevalence and sample size (*n*) - *Hunter Harvested Animals Only*
	Adult Elk Prevalence (CI = 95%)
2019-2020	0% (0-10.6%), *n* =29

							Ratio:100 Females			
Appendix A. Piney Elk Herd Unit, posthunt herd composition data, 2015-2020.										
2015	Adult Males	Yrlng Males	Total Males	Cows	Calves	Total	Adult Males	Yrlng Males	Total Males	Calves
92 JFG	44	22	66	319	172	557				
92 FFG	22	7	29	136	25	190				
92 NR	41	0	41	1	1	43				
94 FFG	40	37	77	266	76	419				
94 NPFG	0	0	0	0	0	0				
94 BCFG	147	73	220	488	100	808				
94 NR	43	13	56	63	22(30)	276				
TOTAL	337	152	489	1273	396(135)	2293	26	12	38	31
2016										
92 JFG	43	58	101	438	124	663				
92 FFG	119	40	159	271	88	518				
92 NR	13	1	14	0	1	15				
94 FFG	22	30	52	285	73	410				
94 NPFG	0	0	0	0	0	0				
94 BCFG	211	88	299	599	262	1160				
94 NR	23	12	35	7	3(200)	245				
TOTAL	431	229	660	1600	551(200)	3011	27	14	41	34
2017										
92 JFG	33	49	82	330	66	478				
92 FFG	54	4	58	106	13	177				
92 NR	16	2	18	0	0(64)	82				
94 FFG	21	26	47	284	51	382				
94 NPFG	0	0	0	0	0	0				
94 BCFG	NS	NS	NS	NS	NS	NS				
94 NR	53	3	56	2	0(315)	315				
TOTAL	177	84	261	722	130(379)	1492	24	12	36	18
2018										
92 JFG	38	28	66	316	81	463				
92 FFG	76	11	87	107	19	213				
92 NR	8	0	8	10	3	21				
94 FFG	23	18	41	308	115	464				
94 NPFG	0	0	0	0	0	NS				
94 BCFG	30	26	56	540	172	768				
94 NR	120	4	124	2	0(95)	221				
TOTAL	295	87	382	1283	390(95)	2150	23	7	30	30
2019										
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 NPFG	0	0	0	0	0	0				
94 BCFG	43	76	119	662	171	952				
94 NR	130	30	160	0	0(329)	489				
TOTAL	275	184	459	1235	341(522)	2557	22	15	37	28
2020										
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 NPFG	0	0	0	0	0	0				
94 BCFG	24	25	49	489	62	600				
94 NR	86	5	91	1	1(385)	478				
TOTAL	174	94	268	993	274(470)	2005	17	9	27	28

2020 - JCR Evaluation Form

SPECIES: Elk
HERD: EL107 - UPPER GREEN RIVER
HUNT AREAS: 93, 95-96

PERIOD: 6/1/2020 - 5/31/2021

PREPARED BY: DEAN CLAUSE

	2015 - 2019 Average	2020	2021 Proposed
Trend Count:	2,739	2,701	2,600
Harvest:	412	441	500
Hunters:	1,266	1,257	1,300
Hunter Success:	33%	35%	38 %
Active Licenses:	1,371	1,370	1,300
Active License Success	30%	32%	38 %
Recreation Days:	11,106	11,392	11,500
Days Per Animal:	27.0	25.8	23
Males per 100 Females:	31	36	
Juveniles per 100 Females	34	35	

Trend Based Objective (± 20%)	2,500 (2000 - 3000)
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	8%
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):

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

EL107 Trend Count

TREND COUNT   Trend

| 2789 | 2886 | 2779 | 2712 | 3000|2634 | 2686 |
| 3000 | 3000 | 3000 | 3000 | | 3000 |

| 2013-2015 | 2014-2016 | 2015-2017 | 2016-2018 | 2017-2019 | 2018-2020 |

Three Year Trend Count Average
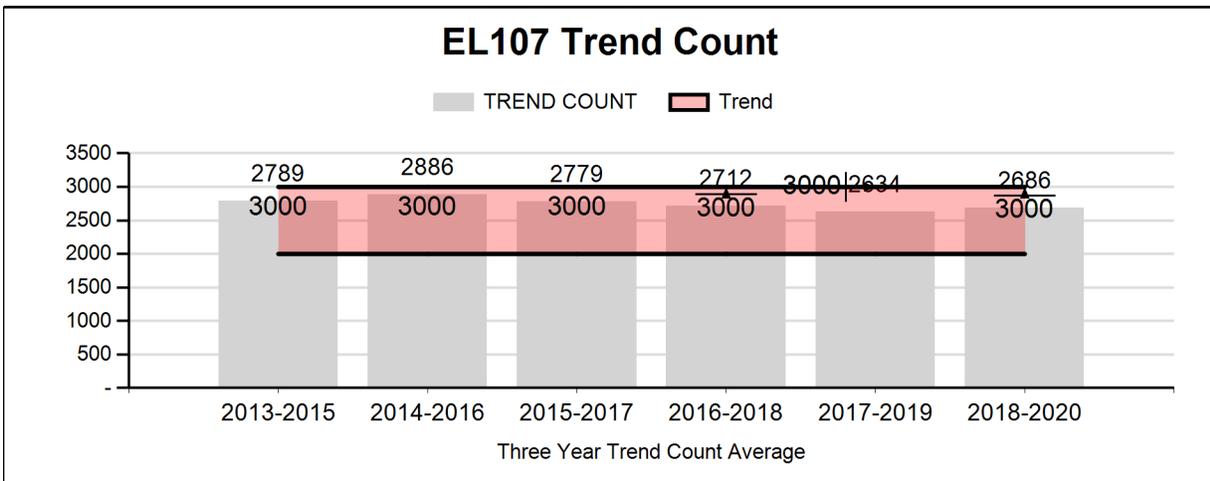
2021 HUNTING SEASONS
Upper Green River (EL107)

Hunt Area	Type	Archery Dates Opens	Archery Dates Closes	Season Dates Opens	Season Dates Closes	Quota	Limitations
93	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	175	Any elk
93	1			Nov. 1	Nov. 30		Antlerless elk
93	6	Sept. 1	Sept. 30	Oct. 1	Nov. 30	275	Cow or calf elk
95	1	Sept. 1	Sept. 30	Oct. 15	Nov. 5	200	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	125	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 elk
96	Gen	Sept. 1	Sept. 30	Oct. 15	Oct. 31		Any elk
96	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	250	Any elk
96	1			Nov. 1	Nov. 30		Antlerless elk
96	2			Dec. 1	Jan. 31	20	Any elk valid west of the elk fence and south of New Fork Lakes Road.
96	6	Sept. 1	Sept. 30	Oct. 1	Nov. 30	275	Cow or calf elk
96	7			Dec. 1	Jan. 31	25	Cow or calf elk valid west of the elk fence and south of New Fork Lakes Road

2020 Hunter Satisfaction: 64% Satisfied, 18% Neutral, 18% Dissatisfied

2020 Management Summary

1.) Hunting Season Evaluation: Hunting seasons in recent years have remained similar, and generally successful in maintaining this herd unit within management goals. As a result of mild fall weather conditions during 2018 and 2019, hunting success and overall harvest rates declined somewhat in this herd, but improved in 2020. Although hunter numbers, harvest and success typically don't show much annual variation for the herd unit, the three individual hunt areas are unique resulting in different hunting strategies and seasons. This herd is managed as a "recreational herd" with a bull:100 cow ratio objective of between 15 to 29; observed bull ratios have been above objective in recent years.

The 2021 hunting season remains similar to past years for this herd unit, using a combination of general and limited quota licensed hunters. Area 93 will have an extended season closing November 30 this year to provide increased opportunities for antlerless elk. Area 96 Type 1 licenses are increased (+50) to provide further opportunity for bull harvest and to move bull:cow ratios towards objective. A late season hunt will remain in Area 96 (Type 2 & Type 7) west of the elk fence and south of New Fork Lake Road to discourage elk from damaging stored crops and reducing elk co-mingling with livestock on private lands.

2.) Herd Unit Evaluation: Managers believe a high proportion (>90 %) of elk typically counted in this herd unit are located on feedgrounds during most winters. Large carnivores (wolves and grizzly bears) have reduced hunter participation in the northern portion of this herd unit (Area 95), and may be influencing elk productivity and survival. Lack of public access on private lands in Area 93 is limiting harvest and compromising female harvest goals within this herd. A large portion of occupied elk habitat in Area 96 lies within the Bridger Wilderness, limiting hunter accessibility, resulting in poor harvest rates on years with mild fall conditions when elk remain at higher elevations.

3.) Population and Trend Evaluation: Since 2012, a mid-winter trend count has been utilized to manage this herd unit instead of population model estimates. This is a "leaky" herd unit and as a result, a functional computer simulation model has never been successfully developed. The mid-winter trend objective for this herd is 2,500 elk, with a range of 2,000 to 3,000 animals (+/- 20%). The 2020 trend count was 2,701 elk observed on Department-operated feedgrounds and native winter ranges. Mild winter conditions resulted in one of the three feedgrounds (Soda Lake) in this herd unit to not require winter supplemental feeding and elk remained on native ranges all winter. The 2018-2020 trend average is 2,686 elk, which is within this herd's objective range. Winter and habitat conditions, wolf activity and timing of classification surveys have resulted in fluctuating trend count data on all three feedgrounds and native winter ranges in past years.

2020 - JCR Evaluation Form

SPECIES: Elk   PERIOD: 6/1/2020 - 5/31/2021
HERD: EL108 - PINEDALE
HUNT AREAS: 97-98   PREPARED BY: DEAN CLAUSE

	2015 - 2019 Average	2020	2021 Proposed
Trend Count:	2,031	2,107	2,050
Harvest:	446	459	550
Hunters:	1,541	1,464	1,500
Hunter Success:	29%	31%	37 %
Active Licenses:	1,614	1,565	1,500
Active License Success	28%	29%	37 %
Recreation Days:	10,808	10,023	10,500
Days Per Animal:	24.2	21.8	19.1
Males per 100 Females:	23	26	
Juveniles per 100 Females	29	29	

Trend Based Objective (± 20%)	1,900 (1520 - 2280)
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	11%
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):

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

EL108 Trend Count
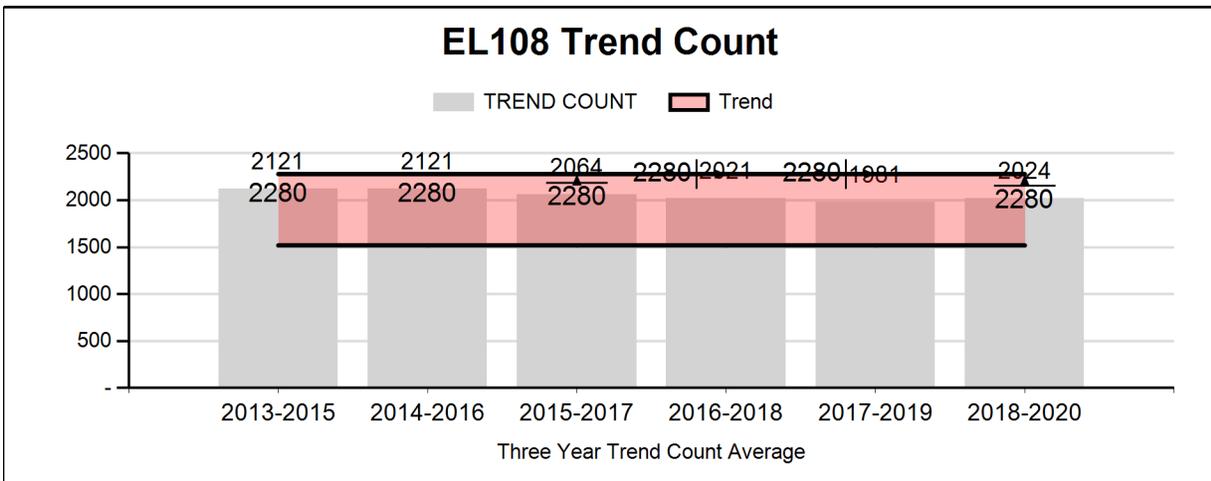
Hunt Area	Type	Archery Dates Opens	Closes	Season Dates Opens	Closes	Quota	Limitations
97	Gen	Sept. 1	Sept. 19	Oct. 1	Oct. 15		Any elk
97	Gen			Oct. 16	Nov. 12		Antlerless elk
97	1	Sept. 1	Sept. 19	Sept. 20	Oct. 31	225	Any elk
97	1			Nov. 1	Nov. 30		Antlerless elk
97	6	Sept. 1	Sept. 19	Sept. 20	Nov. 30	1175	Cow or calf elk
98	Gen	Sept. 1	Sept. 19	Oct. 1	Oct. 15		Any elk
98	Gen			Oct. 16	Nov. 12		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

2020 Hunter Satisfaction: 55% Satisfied, 25% Neutral, 20% Dissatisfied

2020 Management Summary

1.) Hunting Season Evaluation: Harvest strategies using a combination of limited quota and general licensed hunters and lengthy seasons have been somewhat successful in maintaining this herd unit within management goals. Fall weather, especially snow accumulation at higher elevations, greatly influences antlerless harvest in the herd unit. With antlerless harvest relying so much on weather conditions, hunter success is much more variable in this herd. 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 2020 resulted in low hunter success, increased hunter effort (days/harvest) and poor female harvest, well below the 5-year average. However, the 2016 season resulted in harvest rates well above the 5-year average due to heavy snow accumulations at high elevations that persisted through almost the entire hunting season.

The 2021 hunting season remains similar to past years for this herd unit, using a combination of general and limited quota licensed hunters for both Area 97 and Area 98. Limited quota license holders will be provided additional antlerless opportunities with season lengths increased to Nov. 30. A late season hunt will remain in Area 98 to keep elk out of stored hay and reduce elk co-mingling with livestock on private lands.

2.) Herd Unit Evaluation: Managers believe a high proportion (>90%) of elk typically counted in this herd unit are located on feedgrounds during most winters. Some interchange (~10%) of elk has been documented between the Pinedale herd and the adjacent herd unit to the southeast (South Wind River Herd Unit) via GPS collars and ear tags. More than half of the U.S. Forest Service lands 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 and deep snow at higher elevations results in elk distributing to lower elevation where access is better for hunters, resulting in increased harvest. Weather is a very influential factor on harvest rates, especially for antlerless elk, in this herd unit. Past elk removals during the brucellosis test and removal project and research within this herd has contributed to maintaining population management objectives.

3.) Population and Trend Evaluation: Beginning in 2012, a mid-winter trend count has been utilized to manage this herd unit instead of population model estimates. This is a somewhat "leaky" herd and a functional simulation model has not been successfully developed. The mid-winter trend objective for this herd is 1,900 elk with a range of 1,520 to 2,280 animals (+ 20%). The 2020 trend count was 2,107 elk observed on Department-operated feedgrounds and native winter ranges. Mild winter conditions in 2020 resulted in elk not being fed at one (Fall Creek) of the three feedgrounds in the herd unit. The 2018-2020 trend average is 2,024 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 2020 bull:cow ratio was 26 with the previous five-year (2014-2018) average of 23, meeting this management objective. The bull harvest annually reported for this herd is questionable, as managers are confident that most elk are classified each year, yet reported bull harvest ranges from 50% to 60% of the total classified, indicating poor harvest report accuracy or potential bull emmigration from the herd during fall/winter prior to trend counts.

4.) Chronic Wasting Disease Management: This is a Tier 2 surveillance herd that was prioritized for CWD sampling in 2018, 2019 and 2020. Due to somewhat limited access and a large amount of Wilderness within the National Forest, collecting harvest information and CWD samples is challenging. During the past three years (2018-2020), 134 CWD samples have been collected with no positive animals detected (table 1). Efforts will once again target this herd unit during 2021 to reach the goal of 200 CWD samples.

Table 1. CWD prevalence for hunter-harvested elk in the Pinedale Elk Herd, 2018-2020.

Years	CWD Prevalence and sample size (n) - Hunter Harvested Animals Only
	Adult Elk Prevalence (CI = 95%)
2018-2020	0% (0-2.7%), $n = 134$

2020 - JCR Evaluation Form

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

PERIOD: 6/1/2020 - 5/31/2021

PREPARED BY: DEAN CLAUSE

	2015 - 2019 Average	2020	2021 Proposed
Trend Count:	1,172	1,096	1,300
Harvest:	166	153	150
Hunters:	183	158	160
Hunter Success:	91%	97%	94%
Active Licenses:	183	158	160
Active License Success	91%	97%	94%
Recreation Days:	1,484	1,221	1,220
Days Per Animal:	8.9	8.0	8.1
Males per 100 Females:	71	66	
Juveniles per 100 Females	44	46	

Trend Based Objective (± 20%)	1,500 (1200 - 1800)
Management Strategy:	Special
Percent population is above (+) or (-) objective:	-26.9%
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%

MO105 Trend Count

TREND COUNT   Trend

1800   1800   1800   1800   1800   1800
1160   1122   1133   1204   1192   1186

2013-2015   2014-2016   2015-2017   2016-2018   2017-2019   2018-2020

Three Year Trend Count Average

<div align="center">
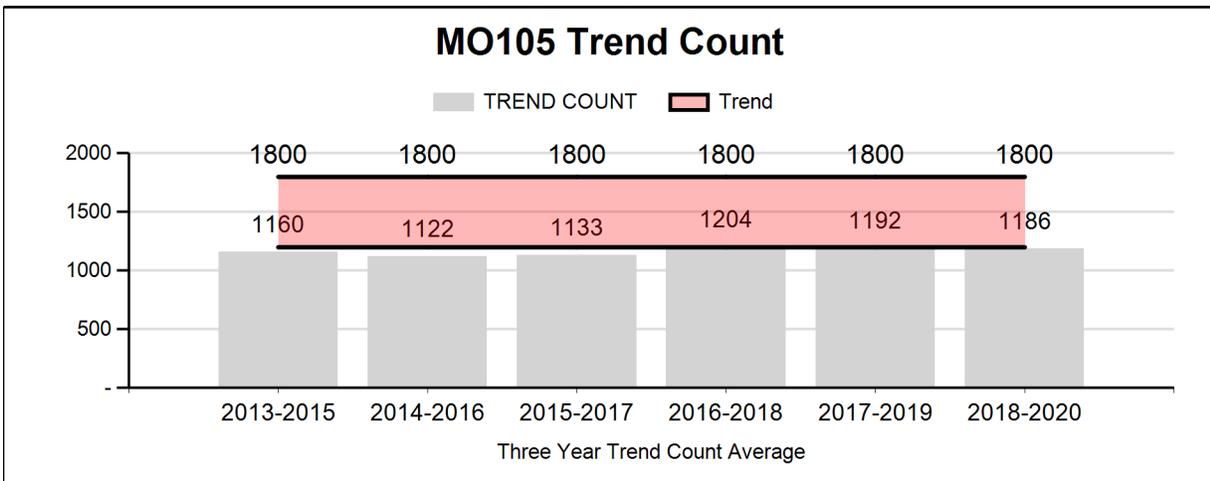
2021 HUNTING SEASONS
Sublette Moose (MO105)

</div>

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
3	4	Sept. 1	Sept. 19	Sept. 20	Oct. 31	5	Antlerless moose, except cow moose with calf at side; valid off national forest
5	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	25	Antlered moose
10	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	8	Antlered moose (6 residents; 2 non-residents)
20	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	15	Antlered moose
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
23	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	15	Antlered moose
24	1	Sept. 1	Sept. 14	Sept. 15	Oct. 31	20	Antlered moose
25	1	Sept. 1	Sept. 30	Oct. 1	Oct. 31	47	Antlered moose (37 residents; 10 non-residents
25	4	Sept. 1	Sept. 30	Oct. 1	Oct. 31	5	Antlerless moose, except cow moose with calf at side

2020 Management Summary

1.) Hunting Season Evaluation: Moose harvest during the 2020 season continues to maintain high success (90%+) with hunter effort around 8 days/harvest for the overall herd unit. Hunt areas within the herd ranged from 80%-100% success and 6–13 days/harvest. Managers also attempt to maintain an average age of harvest for bulls around 4 years or older to provide hunters with opportunities to harvest "trophy" class bulls. The past 5-year average age for harvested bulls is 4.0. An average antler width of 37 inches was reported in this herd during 2020, derived from 68% 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 and license allocations. Although license allocations have remained similar at 160 (150 Type 1 & 10 Type 4) in recent years, the total number of licenses issued declined from 630 in 2002, to 160 in 2020, a total decrease of 470 (75%). These reductions by license type since 2002 equate to declines of 96% (230 to 10) cow/calf (Type 4) licenses and 63% (400 to 150) bull (Type 1) licenses.

The 2021 moose seasons in this herd unit are identical to 2020 seasons, with 150 Type 1 and 10 Type 4 licenses.

2.) Herd Unit Evaluation: Undetermined moose mortalities have been documented within this herd during past years, most often during spring. The significance of these 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, predation, etc. may all be contributing to limited population growth in this herd.

3.) Population and Trend Evaluation: Data for the Sublette moose herd suggest this population declined during the late 1990's, stabilized in 2004 and 2005, slowly increased through 2013, and has stabilized at present. Beginning in 2013, a mid-winter trend count was approved as the management objective for this herd instead of post-hunt population estimates. The mid-winter trend objective for this herd is 1,500 moose, with a range of 1200 – 1800 animals (+ 20%). The 2020 mid-winter trend count was 1,096 moose and the most recent 3-year average (2018-2020) trend is 1,186 moose. Below normal snow accumulations and reduced flight budgets were responsible for the lower overall trend count in 2020 (Table 1). Previous population modeling efforts for this herd typically produced estimates higher, usually ~75% higher, than what annual trend counts document. Maintaining comparable classification survey efforts (flight time) compared to past years 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, 2011-2020.

Hunt Area	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
3	38	21	24	22	32	20	26	10	288	313
4	320	319	346	224	235	366	280	314	*	*
5	44	82	79	34	73	33	65	47	53	98
10	8	4	0	10	31	16	19	36	22	3
20	28	13	32	65	49	36	60	35	54	21
21	23	18	11	7	17	23	1	11	15	13
22	27	49	47	17	13	2	11	2	0	22
23	26	52	55	37	32	17	32	16	25	0
24	0	0	0	0	0	0	0	0	0	0
25	754	742	806	664	517	774	620	739	794	626
Total	**1268**	**1300**	**1400**	**1080**	**999**	**1287**	**1114**	**1210**	**1251**	**1096**

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

4.) Harvest Age and Antler Width Data: A total of 110 teeth from moose harvested in 2020 were aged using cementum annuli analysis. The 2020 tooth age results from the WGFD lab showed an average age of 3.8 (median age = 4.0) derived from 72% of reported harvest for bulls and an average age of 2.7 (median age = 2.0) derived from 88% of reported harvest for cows. Average age of harvest for bulls has remained relatively static at approximately 4.0 years during the past 10+ years (Figure 1), with a slight harvest age increase in 2018 and decrease in 2019 that can not be fully explained. The low sample sizes used to derive female ages in recent years results in erratic and unreliable trends (Figure 1). An average antler width of 37 inches for bull moose was reported in this herd during 2020, derived from 68% of successful moose hunters that submitted antler information with tooth collections.
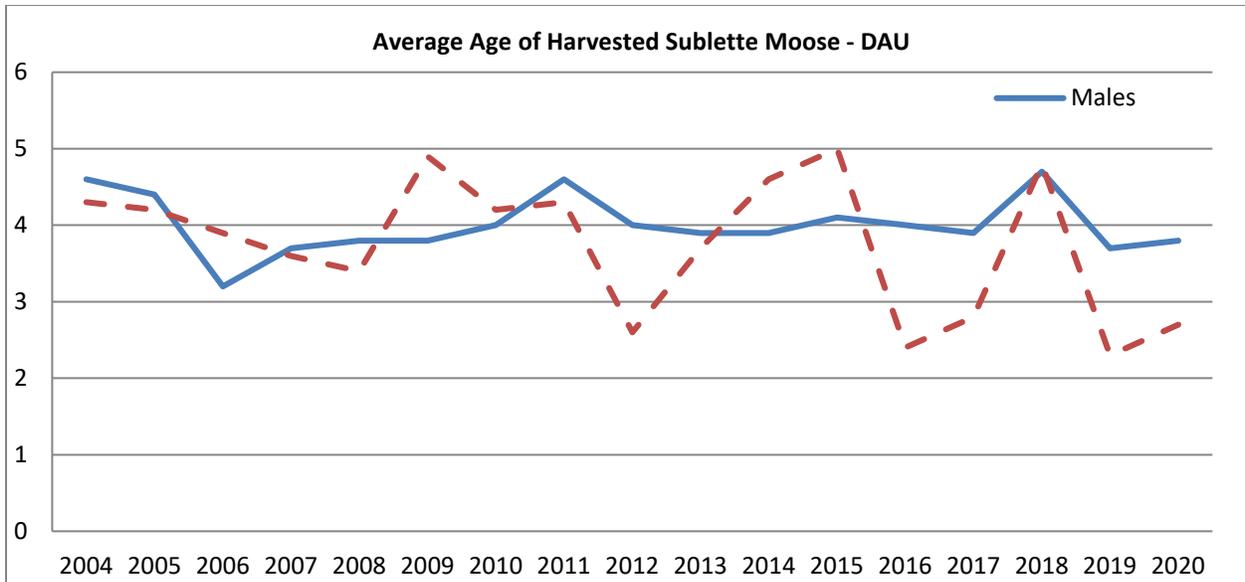
Figure 1. Average age of harvested male and female moose, Sublette Herd Unit, 2004-2020.

2020 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2020 - 5/31/2021

HERD: MD104 - SUBLETTE

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

PREPARED BY: DEAN CLAUSE

	2015 - 2019 Average	2020	2021 Proposed
Population:	23,094	21,103	23,800
Harvest:	1,540	1,628	1,600
Hunters:	4,289	4,521	4,500
Hunter Success:	36%	36%	36%
Active Licenses:	4,303	4,586	4,500
Active License Success:	36%	35%	36%
Recreation Days:	22,767	24,601	24,600
Days Per Animal:	14.8	15.1	15.4
Males per 100 Females	39	35	
Juveniles per 100 Females	62	67	

Population Objective (± 20%) :	32000 (25600 - 38400)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-34.1%
Number of years population has been + or - objective in recent trend:	4
Model Date:	02/05/2021

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

	JCR Year	Proposed
Females ≥ 1 year old:	1.6%	1.5%
Males ≥ 1 year old:	30%	27%
Total:	7%	6%
Proposed change in post-season population:	0%	+12%

Population Size - Postseason
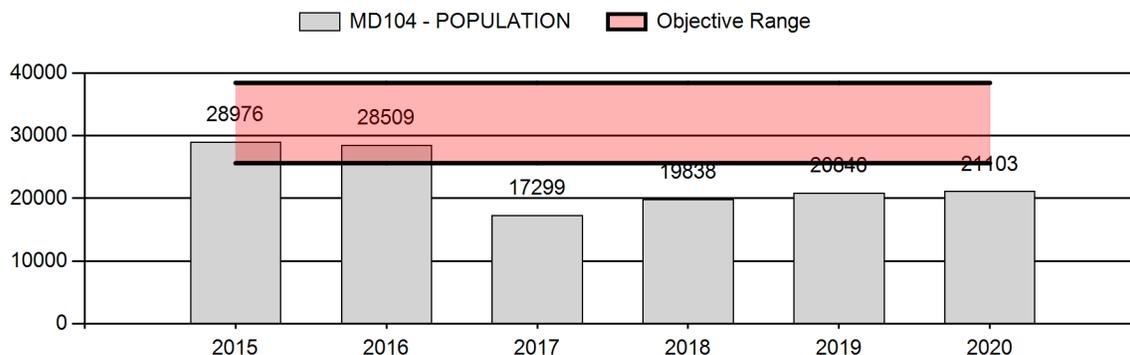
2021 HUNTING SEASONS
Sublette Deer (MD104)

Hunt Area	Type	Archery Dates Opens	Archery Dates Closes	Season Dates Opens	Season Dates Closes	Quota	Limitations
130	Gen	Sept. 1	Sept. 30	Oct. 1	Oct. 6		Antlered mule deer or any white-tailed deer
130	1	Sept. 1	Sept. 30	Oct. 15	Oct. 31	15	Antlered mule or any white-tailed deer
130	6	Sept. 1	Sept. 30	Oct. 1	Oct. 31	75	Doe or fawn valid on private land within Sweetwater County
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
131,132, 133,134, 135, 168	3	Sept. 1	Sept. 30	Oct. 1	Nov. 30	25	Any white-tailed deer
131	6	Sept. 1	Sept. 30	Oct. 1	Oct. 31	50	Doe or fawn valid within the Farson-Eden Irrigation Project
131	7	Sept. 1	Sept. 30	Oct. 1	Oct. 31	50	Doe or fawn valid west of the Blue Rim (Sweetwater County Road 5) and west of the Old Stauffer Roads (Sweetwater County Road 7) and south of the OCI Entrance Road (Sweetwater County Road 6)
138	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer 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	Oct. 6		Antlered mule deer or any white-tailed deer
140	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer
141	1	Sept. 1	Sept. 30	Oct. 1	Oct. 21	80	Antlered mule deer or any white-tailed deer
141	1			Oct. 22	Oct. 31		Antlered mule deer or any white-tailed deer on national forest
142	Gen	Sept. 1	Sept. 14	Sept. 15	Oct. 6		Antlered mule deer or any white-tailed deer
146	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer
150	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule or any white-tailed deer
148,149, 150,151, 152,155, 156	3	Sept. 1	Sept. 14	Sep. 15	Nov. 30	25	Any white-tailed deer
148,149, 150,151, 152,155, 156	8	Sept. 1	Sept. 14	Sept. 15	Nov. 30	75	Doe or fawn white-tailed deer
151	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer

152	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer
153	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer
154	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer
155	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule or any white-tailed deer
156	Gen	Sept. 1	Sept. 14	Sep. 15	Oct. 6		Antlered mule deer or any white-tailed deer

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

2021 Region H nonresident quota: 600 licenses

2020 Hunter Satisfaction: 51% Satisfied, 24% Neutral, 25% Dissatisfied

2020 Management Summary

1.) Hunting Season Evaluation: The 2020 hunting seasons continued to be conservative, limiting most hunters to buck harvest allowing for population growth in the herd. An antler point restriction (APR) limiting harvest to bucks with three or more points was instated from 2017-2019 following the extremely harsh winter of 2016/17 to help maintain buck ratios at the objective of 30-45 bucks:100 does. The APR was removed in most hunt areas in 2020 as it was determined no longer necessary to maintain buck ratios within the objective and to provide additional buck harvest opportunity. Doe/fawn harvest has been limited to youth hunters and limited Type 6/7 licenses to address private land damage. Since 2016, this herd has seen little growth and remains below the population objective range of 25,600 to 38,400 deer. The 2021 hunting seasons limit harvest to bucks using general license hunters for most hunt areas, opening on September 15 and closing October 6, except for youth hunters and limited quota doe/fawn licenses (125 Type 6 & 7) near the town of Farson and along the Green River to address damage concerns on private lands. The addition of Type 8 licenses (n=75) will provide additional white-tailed doe harvest opportunties in the Jackson Region. Limited quota Type 1 & 3 licenses will be maintained as in past years.

2.) Herd Unit Evaluation: 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. During the past 10 years, this deer herd experienced three winters that resulted in above average fawn mortality (>50% loss). Winter conditions experienced in 2018-19 resulted in winter fawn loss of 50+% and the winter of 2016-17 resulted in a significant deer die-off where fawn loss was estimated near 85% and adult mortality near 35%. During the winter of 2010-11, fawn mortality estimates exceeded 70%. 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 unit. 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 oil and gas infrastructure. Overall hunter satisfaction has been good within this herd in most years, even following years with increased winter mortality and generally fewer deer on the landscape.

3.) Population and Trend Evaluation: A spreadsheet model uses harvest, sex/age ratios and survival data to project population estimates and trends for this herd unit. The Time-Specific Juvenile and Constant Adult Survival (TSJ,CA) Model exhibits the best overall fit compared to other models (Fit = 101 and Relative AICc = 212) resulting in a 2020 postseason population estimate of approximately 21,000 deer, below the desired objective of 32,000 ($\pm$ 20%) for this herd unit. Trend counts from postseason classification counts also reflect the population trends quite well in this herd since survey time and coverage has remained similar in the past, except for 2020 when budgetary restrictions resulted in a 30% reduction in survey effort.

4.) Chronic Wasting Disease Management: This is a Tier 1 surveillance herd identified as an ongoing priority area for CWD sampling. A total of 263 CWD samples from hunter harvested mule deer were collected in this herd from 2018-2020. During this 3-year period, 1.4% (3/214) of adult bucks tested were CWD positive, while no positive deer were found in any other sex/age class (Table 1). However, the first documented case of CWD in the Sublette herd was an adult doe found dead and sampled in HA138 near the Pinedale airport in 2017.

Table 1. CWD prevalence for hunter-harvested mule deer in the Sublette Mule Deer Herd, 2018-2020.

Year(s)	Percent CWD-Positive and (*n*) – *Hunter Harvest Only*		
	Adult Males (CI = 95%)	Yearling Males	Adult Females
2020	**0.9% (n=109)**	0% (16)	0% (14)
2018-2020	**1.4% (0.3-4%, n=214)**	0% (23)	0% (26)

5.) Weather and Habitat Evaluation:

2016-2020 Sublette MD104 Precipitation
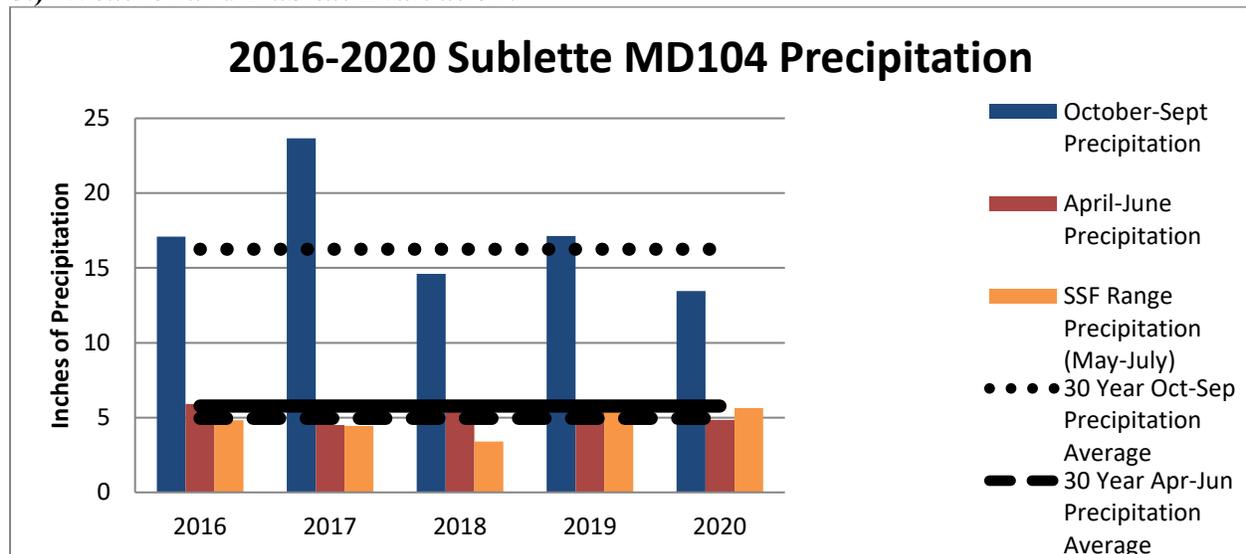
Precipitation
The Parameter-Elevation Relationships on Independent Slops Model (PRISM) was utilized to estimate precipitation by calculating a climate-elevation regression for each Digital Elevation Model grid cell (4km resolution) for the Sublette Mule Deer Herd Unit during the water year from October 2019 through September 2020. Annual precipitation was below the 30 year average and was the lowest in the past five years. Precipitation during the growing season (April – June) and during the summer use periods were both near the 30 year averages. Overall, 2019-2020 winter precipitation was near average with near normal spring and early summer precipitation while dry conditions persisted for the rest of the water year contributing to the lower overall precipitation.

Winter Severity
Generally, most of the low elevation winter ranges experienced below average monthly snow accumulation during the 2020-2021 winter. As of March 2, 2021, SNOTEL locations in the high elevations of the Sublette herd indicate snow water equivalent ranging from 60 - 119%, suggesting the possibility of reduced soil moisture for early growing season conditions in certain areas.

Significant Events
Several habitat improvement projects were carried out within the herd unit during 2020. Approximately 1,176 acres of mechanical and chemical enhancements took place in mountain big sagebrush and mixed mountain shrub communities and 28,897 acres of cheatgrass treatments were carried out through aerial and ground application of herbicide. Other projects include over 6 miles of fence modified to wildlife-friendly standards, 7 wildlife-crossing gates installed on Hwy 28 along with 9 miles of adjustments made to increase the bottom strand height and approximately 325 acres of conifer piling and burning in aspen communities. On-going restoration projects, such as noxious weed management, are slated to continue over the next two years within wildfires that have occurred recently. More detailed information can be obtained by reading the Pinedale Region report within the 2020 Strategic Habitat Plan (SHP) Annual Report.

Habitat Monitoring
Winter Range Shrub transects were not monitored in 2019 by Department personnel, but monitoring associated with past and future treatments was conducted throughout the herd unit and is discussed in more detail in the 2020 SHP Report.

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 providing for the current population of mule deer. The overall end result of this effort is to provide a standardized habitat component for discussions about how mule deer objectives should or should not be adjusted based on the general concept of carrying capacity. In the Sublette Herd during 2020 department personnel completed 1,468 aces of aspen surveys, 2,230 acres of rangeland surveys and 3,401 acres of specialized surveys totaling 7,099 acres within the Pinedale and Jackson Regions.