

Elk Quota Recommendation Form

Unit Group: 061, 071

Date Prepared: _____

Population Objective: None - Habitat Based

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	209	750	309	1,268	28	41	4,400 (1,700)	75		50	8	71	217
2019-2020	496	1,042	433	1,971	48	42	4,700 (1,900)	48		49	19	48	245
2020-2021	397	1,329	517	2,243	30	39	5,000 (1,700)	62		59	17	64	190

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	25	3	20	3	30	4			40	5				40		50			
2020-2021	30	3	20	3	40	5			50	6				10		10			
2021-2022	30	3	16	2	30	3			40	4				8		8			8
Tag Trend	=	=	DEC	DEC	DEC	DEC	=	=	DEC	DEC	=	=	=	DEC	=	DEC	=	=	INC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	65				275	30			170	15				0	0	0			
2020-2021	65				310	45			180	25				0	0	0			
2021-2022	60	6			235	35			195	30				0	0	0			
Tag Trend	DEC	INC	=	=	DEC	DEC	=	=	INC	INC	=	=	=	=	=	=	=	=	=

Quota Rationale

Currently, the Percent of Bulls Harvested with 50-in. Main Beam or Greater is well below the objective of 25%-35 (3 year average), and is also below this unit group's previous 3 year average. Antlered elk quota recommendations reflect an effort to begin increasing this harvest metric toward objective. Antlerless elk quota recommendations are designed to maintain this population near its current level, however the demand/success formula increases total tags at times due to decreased success in particular hunts. Spike harvest remains an important tool to maintain bull ratios within acceptable levels in the herd, but not nearly at the same magnitude as in previous years.

Reporting Biologist: Allen

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 062, 064, 066-068

Date Prepared: _____

Population Objective: 500

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
	2018-2019	24	224					111	359	11			
2019-2020	102	158	38	298	65	24	600 (350)	33		39	17	68	55
2020-2021	78	298	116	492	26	39	700 (400)	52		33	32	72	22

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
	2019-2020	15	2	10	1	35	4			30	3				25	25	25		
2020-2021	4	1	7	1	20	2			15	1				5	5	5			
2021-2022	2	1	4	1	14	2			13	1				3	0	3			
Tag Trend	DEC	=	DEC	=	DEC	=	=	=	DEC	=	=	=	=	DEC	DEC	DEC	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
	2019-2020	40				150	25			35	6				55	15	250		
2020-2021	20				70	10			20	3				0	0	0			
2021-2022	10	1			65	9			0	0				0	0	0			
Tag Trend	DEC	INC	=	=	DEC	DEC	=	=	DEC	DEC	=	=	=	=	=	=	=	=	=

Quota Rationale

Antlerless quota recommendations are designed to allow for slow population growth towards the population objective of 500 adult elk. The antlered elk quota recommendation is designed to maintain the bull ratio near the current level.

Reporting Biologist: Allen

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 072,073,074

Date Prepared: _____

Population Objective: 1,420

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	439	614	219	1,272	71	36	1,300	40		25	23	62	262
2019-2020	476	404	146	1,026	118	36	1,200	32		21	22	67	172
2020-2021	140	217	140	497	65	65	1,100	29		18	21	61	73

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	75	10	70	10	190	20			190	20				40		40			15
2020-2021	110	15	55	7	180	18			180	18				20		20			16
2021-2022	60	8	30	4	100	10			100	10				20		20			15
Tag Trend	DEC	DEC	DEC	DEC	DEC	DEC	=	=	DEC	DEC	=	=	=	=	=	=	=	=	DEC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	40	5	50	6	140	15			130	15				22	6	70	55		
2020-2021	25	3	10	1	140	15			120	15				0	0	0	20		
2021-2022	10	1	7	1	65	7			50	5				0	0	0	5		
Tag Trend	DEC	DEC	DEC	=	DEC	DEC	=	=	DEC	DEC	=	=	=	=	=	=	DEC	=	=

Quota Rationale

This herd is currently below the population objective. The antlerless quota recommendation is designed to allow the herd to build back to objective. Currently, the Percent of Bulls Harvested with 50-in. Main Beam or Greater is below the objective of 25%-35%. The antlered elk tag recommendation is designed to move this harvest metric toward objective.

Reporting Biologist: Huebner

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 075

Date Prepared: _____

Population Objective: 100

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	37	65	20	122	57	31	100	64		29	26	54	25
2019-2020	21	55	27	103	38	49	90	29		50	17	48	28
2020-2021	43	59	28	130	73	47	1,100	60		25	24	86	6

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	3		4		15	2			15	1									12
2020-2021	2		2		10	1			10	1									11
2021-2022	3		2		9	1			9	1									9
Tag Trend	INC	=	=	=	DEC	=	=	=	DEC	=	=	=	=	=	=	=	=	=	DEC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	5		5		10				100	15				22	6	70			
2020-2021	1		3		6				120	15				0	0	0			
2021-2022	2		4		4				50	5				0	0	0			
Tag Trend	INC	=	INC	=	DEC	=	=	=	DEC	DEC	=	=	=	=	=	=	=	=	=

Quota Rationale

This herd is at population objective. The antlerless quota recommendation is designed to maintain this population at the current level (ALW Late Quota is combined with 072-074). Currently, the Percent of Bulls Harvested with 50-in. Main Beam or Greater is below the objective of 25%-35%. The antlered elk tag recommendation is designed to move this harvest metric toward objective.

Reporting Biologist: Huebner

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 076,077,079,081

Date Prepared: _____

Population Objective: 1,195

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	196	488	243	927	40	50	970	63		65	26	70	162
2019-2020	184	783	297	1,264	23	38	1,081	67		58	24	83	86
2020-2021	0	0	0	0	#DIV/0!	#DIV/0!	1,147	80		58	36	80	72

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	30	3	8	1	60	8			60	8				15		10			48
2020-2021	20	2	9	1	55	6			55	6				10		10			45
2021-2022	25	3	15	2	65	8			65	8				10		10			36
Tag Trend	INC	INC	INC	INC	INC	INC	=	=	INC	INC	=	=	=	=	=	=	=	=	DEC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	15	2	10	1	40				20		10	15	30	22	6	70			
2020-2021	6	1	15	1	40				20		10	10	30	0	0	0			
2021-2022	10	1	15	1	45				30		10	16	30	0	0	0			
Tag Trend	INC	=	=	=	INC	=	=	=	INC	=	=	INC	=	=	=	=	=	=	=

Quota Rationale

This herd showed a slight increase this year. The antlerless elk quota recommendation is designed to maintain the population within objective. Currently, the Percent of Bulls Harvested with 50-in. Main Beam or Greater is within the 3-year average objective of 25%-35%, and the antlered elk quota recommendation is designed to keep this metric within objective.

Reporting Biologist: Huebner

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 078, 105-107, and 109

Date Prepared: 4/11/2021

Population Objective: 340 +/- 10%

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
	2018-2019	101	151					68	320	67			
2019-2020	93	270	79	442	34	29	460	82		67	48	92	-44
2020-2021	122	251	105	478	49	42	580	79		87	55	79	-30

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
	2019-2020	10	1	6	1	12	1			11	1				10				
2020-2021	11	1	9	1	13	2			13	2				10					
2021-2022	15	2	12	1	15	2			15	1				15					
Tag Trend	INC	INC	INC	=	INC	=	=	=	INC	DEC	=	=	=	INC	=	=	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
	2019-2020	15		10		80													
2020-2021	15		15		95														
2021-2022	20	2	15	2	70				40										
Tag Trend	INC	INC	=	INC	DEC	=	=	=	INC	=	=	=	=	=	=	=	=	=	=

Quota Rationale

This herd continues to be above the population objective set in the Wells Resource Area Elk Plan. There was a late cow hunt added in an attempt to aid in driving this herd to objective. There are 2 major impediments to controlling this herd; one being the refuge afforded to the elk on the Big Springs Ranch (NGM owned) in Hunt Unit 078, and the refuge available to the elk on private properties in the Wood Hills and Independence Valley in Hunt Unit 107. To date, the owners of these properties have been more willing to live with the elk, as opposed to the prospect of elk hunters. Conversations will continue and workable solutions will be pursued. The harvest metrics on bulls continue to be very strong and 3-year averages continues to be above the objectives set in the Harvest Guidelines, for this reason there will be small increases across the suite of bull hunts. The 5 tag increase in the spike quota is to address poor historical success and to take advantage of the strong yearling cohort.

Reporting Biologist: Roberts

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 091

Date Prepared: _____

Population Objective: 125 (NV side)

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	31	80	27	138	39	34	380	88			33	100	2
2019-2020				0	--	--	360	89			63	100	14
2020-2021	5	52	33	90	10	63	430	90			44	100	14

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020					9														
2020-2021					11														
2021-2022	4				12														2
Tag Trend	INC	=	=	=	INC	=	=	=	=	=	=	=	=	=	=	=	=	=	INC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020					5				5										
2020-2021					5				5										
2021-2022					5				5										
Tag Trend	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Quota Rationale

An adjustment was made to the Unit 091 population model based on elk observation data and harvest metrics, which resulted in an increase in population estimate. The average age of bulls harvested, the percentage of 6 points in the harvest, and the percentage of bulls with 50 inch main beams or better all remain high. As a result, the antlered elk tag quota recommendation shows an increase in 2021. An antlered elk archery hunt will be offered in Unit 091 for the first time in 2021.

Reporting Biologist: Huebner

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 104, 108, and 121

Date Prepared: 4/8/2021

Population Objective: Up to 912

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
	2018-2019	77	338					148	563	23			
2019-2020	42	431	79	552	10	18	950	57			45	62	56
2020-2021	88	260	113	461	34	43	900	61			46	76	96

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
	2019-2020	10	1	7	1	50	7								NA				
2020-2021	10	1	6	1	65	8								NA			1		1
2021-2022	11	1	10	1	80	9								15					
Tag Trend	INC	=	INC	=	INC	INC	=	=	=	=	=	=	=	DEC	=	=	DEC	=	DEC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
	2019-2020	10		10		40	4			15	2	25	10	10					
2020-2021	8		10		90	10			20	2	25	10	10						
2021-2022	10	1	10	1	50	5			20	2	25	10	15						
Tag Trend	INC	INC	=	INC	DEC	DEC	=	=	=	=	=	=	INC	=	=	=	=	=	=

Quota Rationale

This herd was slightly above population objective last year and was subjected to elevated harvest during the 2020 hunting season to reach objective. The current recommended quotas are more reflective of harvest levels needed to maintain this population at objective of around 900 adult animals. There were two emergency depredation hunts initiated in December and January to bolster the established Steptoe Valley depredation hunt. The excessively dry conditions led elk to seek refuge on the Lages Junction fields in Hunt Units 106 and 121, much later in the year than has been historically documented. For this reason the late depredation cow quota is being increased by 5 tags, and there will be increased vigilance and sensitivity to any surges in elk use on private properties. Emergency hunts will continue to be utilized as needed. The harvest metrics on bulls continue to be very strong and 3-year averages continues to be above the objectives set in the Harvest Guidelines, for this reason there will small increases across the suite of bull hunts. A spike hunt is being initiated in 2021, with a conservative quota being proposed.

Reporting Biologist: Roberts

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 111-115

Date Prepared: 4/10/2021

Population Objective: 2250 +/-20% (1,800-2,700)

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
	2018-2019	299	672					255	1,226	44			
2019-2020	453	923	253	1,629	49	27	2,800	66	NA	64	49	81	186
2020-2021	388	786	304	1,478	49	39	2,700	75	NA	58	41	77	232

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
	2019-2020	35	4	35	4	100	10	NA	NA	90	9	NA	NA	NA	NA	NA	NA	10	1
2020-2021	35	4	30	4	100	12	NA	NA	110	13	NA	NA	NA	NA	NA	NA	8	2	6
2021-2022	30	3	9	1	80	9	NA	NA	90	10	NA	25	NA	50	NA	50			
Tag Trend	DEC	DEC	DEC	DEC	DEC	DEC	=	=	DEC	DEC	=	DEC	=	DEC	=	DEC	DEC	DEC	DEC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
	2019-2020	70	0	40	0	130	8	NA	NA	170	8	0	0	0	0	0	0	0	0
2020-2021	100	0	35	0	165	9	NA	NA	200	10	0	0	0	0	0	0	0	0	0
2021-2022	70	8	34	4	150	15	NA	NA	175	17	0	50	0	0	0	0	0	0	0
Tag Trend	DEC	INC	DEC	INC	DEC	INC	=	=	DEC	INC	=	INC	=	=	=	=	=	=	=

Quota Rationale

The antlered elk harvest metrics for Percent 6-pt, Percent 50" Main Beam or Better, and average age of harvested bulls all declined in 2020, however the Percent 50" Main Beam or Better remains at the top end of the guideline objective of 35%-45% (3 year average). Current antlered elk quota recommendations are designed to address the noticeable drop in harvest metrics in 2020, and maintain the quality currently carried in Area 11. Antlerless elk quota recommendations are designed to maintain the population near the center of population objective. Antlerless and Antlered Depredation quota recommendations are designed to address a specific elk/agriculture conflict issue in Unit 115.

Reporting Biologist: Menghini

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 131,132,108B

Date Prepared: 4/11/2021

Population Objective: 300 +/- 20% Adults

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	47	99	29	175	47	29	310		51		39	67	39
2019-2020	43	72	15	130	60	21	260		32		42	69	28
2020-2021	34	81	23	138	42	28	230		49		38	60	17

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	10	2	6				55	6											
2020-2021	8	1	10				60	6											
2021-2022	7	1	7				60	7											
Tag Trend	DEC	=	DEC	=	=	=	=	INC	=	=	=	=	=	=	=	=	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	8	2	20	2	50	5								10	10	25			
2020-2021	3	1	5	1	20	2								0	0	0			
2021-2022	2	1	2	1	10	1								0	0	0			
Tag Trend	DEC	=	DEC	=	DEC	DEC	=	=	=	=	=	=	=	=	=	=	=	=	=

Quota Rationale

The historic average observed calf ratio in this unit group is 36 calves:100 cows. For 2019, 2020 and 2021 the ratios have been 29, 21 and 28 respectively. Currently, the Percent of Bulls Harvested with 50-in. Main Beam or Greater is above the 3-year average objective of 25%-35%. The population estimate is currently below population objective. Antlerless elk quota recommendations reflect an effort to address lowered recruitment rates and allow for a slight increase to population objective. Antlered elk quota recommendations remain largely unchanged, but if bull harvest metrics continue to be above objective, recommendations may increase in 2022. Primitive weapon antlered elk quotas decreased due to demand/success formula.

Reporting Biologist: Clint Garrett

Supervisor: Tom Donham

Elk Quota Recommendation Form

Unit Group: 221-223

Date Prepared: 4/10/2021

Population Objective: 1600 +/-20% (1,280-1,920)

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			50-in Beam (%)	6 Pt (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L			
2018-2019	188	513	176	877	37	34	1,700	79	NA	60	24	60	160
2019-2020	232	464	116	812	50	25	1,600	63	NA	40	39	79	94
2020-2021	165	288	125	578	57	43	1,800	65	NA	65	34	68	85

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	20	2	8	2	60	7	NA	NA	60	6	NA	NA	NA	NA	NA	NA	7	2	6
2020-2021	25	3	7	1	70	8	NA	NA	70	8	Na	NA	NA	NA	NA	NA	8	0	4
2021-2022	25	2	4	1	65	7	NA	NA	65	7	NA	NA	NA	25	NA	25			
Tag Trend	=	DEC	DEC	=	DEC	DEC	=	=	DEC	DEC	=	=	=	DEC	=	DEC	DEC	=	DEC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	45	0	25	0	95	0	NA	NA	85	0	0	0	0	0	0	0	15	0	15
2020-2021	45	0	25	0	90	0	NA	NA	80	0	0	0	0	0	0	0	10	0	10
2021-2022	25	3	25	3	80	8	NA	NA	70	8	0	0	0	0	0	0	10	0	10
Tag Trend	DEC	INC	=	INC	DEC	INC	=	=	DEC	INC	=	=	=	=	=	=	=	=	=

Quota Rationale

The antlered elk harvest metrics for Percent 6-pt, Percent 50" Main Beam or Better, and average age of harvested bulls all declined in 2020, however the Percent 50" Main Beam or Better remains within the guideline objective of of 25%-35% (3 year average). Antlered elk quota recommendations are designed to maintain harvest metrics within guideline objectives. Antlerless elk quota recommendations are reflective of an effort to stay within population objective. Some Resident antlerless quota recommendations are seeing a decrease, but that is primarily a function of tags being redistributed to new nonresident cow hunts.

Reporting Biologist: Menghini

Supervisor: Donham

Elk Quota Recommendation Form

Unit Group: 262

Date Prepared: 3/17/2021

Population Objective: _____

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			6-Point or Better (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L		
2018-2019	9	58	10	77	16	17	170	100			67	--
2019-2020	10	5	1	16	200	20	170	67			75	--
2020-2021	1	16	1	18	6	6	160	67			100	--

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2019-2020	1		1		3														
2020-2021	1		1		3														
2021-2022	1		1		3														
Tag Trend	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020																			
2020-2021																			
2021-2022																			
Tag Trend	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Quota Rationale

In 2021, five bull elk tags are recommended to be apportioned across three weapon classes: Archery - 1, ALW – 3 and muzzleloader - 1. Bull elk quota recommendations are unchanged from authorized hunt quotas in 2019 and 2020. The paucity of aerial survey data obtained in 2020 and 2021 limits the ability to model any recent population fluctuations relative to the population estimate of 170 in 2019. The 2021 elk population estimate is 160 and represents a slight contraction. A minor population contraction was deemed reasonable due to unfavorable environmental conditions brought about by protracted drought.

Reporting Biologist: Pat Cummings

Supervisor: Joe Bennett

Elk Quota Recommendation Form

Unit Group: 161 - 164, 171 - 173

Date Prepared: 3/26/2021

Population Objective: 850

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			6-Point or Better (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L		
2018-2019	77	179	65	321	43	36	850	100	41	38	68	83
2019-2020	106	312	107	525	34	34	800	100	38	42	63	87
2020-2021	93	260	71	424	36	27	750	100	33	11	54	42
2021-2022	0	0	0	0	#DIV/0!	#DIV/0!	750	100	44	32	49	38

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2018-2019	20	2	30	3	5	1	40	4	40	4									
2019-2020	20	2	30	3	8	1	40	5	40	5									
2020-2021	20	2	20	2	7	1	35	4	35	4									
2021-2022	15	2	15	2	7	1	35	4	35	4				15					
Tag Trend	=	=	DEC	DEC	DEC	=	DEC	DEC	DEC	DEC	=	=	=	=	=	=	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2018-2019	30		20		65	7			80	10				15	30	100	40		
2019-2020	30		20		65	7			80	10				15	20	75	40		
2020-2021	25	2	20		60	7			70	8							20		
2021-2022	20	2	20	2	70	7			75	7							10		
Tag Trend	DEC	INC	=	=	DEC	=	=	=	DEC	DEC	=	=	=	DEC	DEC	DEC	DEC	=	=

Quota Rationale

No formal survey was conducted in 2021. After averaging calf ratios, our model estimates the population at approximately 750. A reduction in quota recommendations is warranted as the population is modeled approximately 100 individuals below the pre-established objective. The population objective, which is published in the Central Nevada Elk Plan is 850. The demand success formula and population cap is driving the antlerless quotas. We are redistributing tags from the wilderness hunt, where higher success is achieved, to the ALW hunts for antlerless quotas.

Reporting Biologist: Burkett

Supervisor: Bennett

Elk Quota Recommendation Form

Unit Group: 231

Date Prepared: 3/19/2021

Population Objective: 550

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			6-Point or Better (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L		
2019-2020	103	179	69	351	58	39	500	74		60	54	105
2020-2021	38	86	34	158	44	40	500	77		51	60	84
2021-2022				0	--	--	500	80		54	61	90

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2018-2019	20	2	10	1	40	4			45	5									14
2019-2020	20	2	6	1	40	5			45	5									15
2020-2021	20	2	6	1	40	5			45	5				10		10			15
Tag Trend	=	=	DEC	=	=	INC	=	=	=	=	=	=	=	=	=	=	=	=	INC

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	35		25		55	5			80	8				10	10	25	25		
2020-2021	20		15		55	6			60	7				0	0	0	35		
2021-2022	20	1	10	1	45	5			50	5				0	0	0	30		
Tag Trend	DEC	=	DEC	=	=	INC	=	=	DEC	DEC	=	=	=	DEC	DEC	DEC	INC	=	=

Quota Rationale

The modeled population estimate for this herd remained stable this year. Success of the bull rifle hunts was slightly higher than past years, while the percent of bulls 6-point or better increased slightly. The herd appears to be sustaining a high level of antlerless harvest due to ingress from adjacent Area 22 and Utah. The department recommends a slight decrease in antlerless quota across all weapon types and no change to bull quotas.

Reporting Biologist: Sallee

Supervisor: Bennett

Elk Quota Recommendation Form

Unit Group: 241-242

Date Prepared: 3/19/2021

Population Objective: 200

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			6-Point or Better (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L		
2019-2020	5	16	11	32	31	69		67			50	1
2020-2021	3	12	4	19	25	33		72			25	2
2020-2021				0	--	--		100			80	6

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2018-2019	2		2		3														1
2019-2020	2		2		3														1
2020-2021	2		2		4														1
Tag Trend	=	=	=	=	INC	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless Archery		Antlerless Muzzleloader		Antlerless ALW Early		Antlerless ALW Mid		Antlerless ALW Late		Antlerless Depredation Hunt 4107			Antlerless Mgmt Hunt (DELK)			Antlerless Wilderness Hunt 4181		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2019-2020	5				6														
2020-2021	3				10														
2021-2022	3				10														
Tag Trend	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Quota Rationale

This population does not have a formal population model due to limited numbers and low elk density within the Area. Success of the bull rifle hunt was high, and total antlerless harvest increased from previous years. The population appears to be sustaining the current level of harvest; therefore, I recommend a harvest level similar to last year. The hunt season dates shifted for the upcoming season, with muzzleloader taking place during the rut and rifle any legal weapon shifting to a post-rut hunt. I recommend increasing the any legal weapon quota by one tag to increase opportunity during a period where success may be lower.

Reporting Biologist: Sallee

Supervisor: Bennett

Elk Quota Recommendation Form

Unit Group: 251

Date Prepared: 3/26/2021

Population Objective: 0

Herd & Harvest Results

Year	Survey Count			Total	Bull Ratio (Obs)	Calf Ratio (Obs)	Pop Est (August)	Bull Rifle Success (%)			6-Point or Better (%)	Total Antlerless Harvest
	Bull	Cow	Calf					E	M	L		
2018-2019				0	--	--						
2019-2020				0	--	--						
2019-2020				0	--	--			20		0	0
2020-2021				0	--	--			60		67	0

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlered

Year	Bull Archery		Bull Muzzleloader		Bull ALW Early		Bull ALW Mid		Bull ALW Late		Bull Depredation Hunt 4102			Spike Hunt 4651			Landowner Incentive Tags		
	4161	4261	4156	4256	4151	4251	4151	4251	4151	4251	E	M	L	E	M	L	A	M	ALW
2017-2018											5								
2018-2019											5								
2019-2020											5								
2020-2021											5								
Tag Trend	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Approved (Previous Year) and Recommended (Current Year) Tag Quota - Antlerless

Year	Antlerless		Antlerless		Antlerless		Antlerless		Antlerless		Antlerless Depredation			Antlerless Mgmt Hunt			Antlerless Wilderness		
	4111	4211	4176	4276	4181	4281	4151	4251	4151	4251	E	M	L	A	M	ALW	E	M	L
2017-2018					20														
2018-2019					10														
2019-2020					10														
2020-2021					10														
Tag Trend	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

Quota Rationale

The Central Nevada Elk plan as updated in 2004 designates this area as a non-establishment elk area. Trail camera data along with ancillary sightings indicate that elk occur in the Kawich range year-round. This hunt was established to stay in compliance with the Central Nevada Elk Plan. We expect success rates to be low on these depredation hunts due to low elk densities and the thick habitat in the Kawich range. No cow elk have been harvested during the depredation hunt. Reports indicate that cows were observed but were not harvested. I recommend no change to antlerless or antlered quota. Antlerless animals in this unit group have been difficult to hunt. Ancillary observations place a group of 30-40 cows and calves residing here full-time.

Reporting Biologist: Burkett

Supervisor: Bennett