

2023-2024 Bighorn Sheep Quota Recommendation Forms 2023-2024 Mountain Goat Quota Recommendation Forms

(Accompanies Commission Regulation 23-14)

Subspecies:	Des	sert	_	Unit	Group:	045		Year	2023
Survey and	Model Results								
Year	Survey Total	Survey 4-5 yr olo Rams	-	6+ yr old ms		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	138	8	1	4		250	144	9	9
2020-2021	76	2	ę	9		120	74	5	4
2022-2023	77	1		1		110	69	5	3
Trend	down	down	do	wn		down	down	down	down
Hunt Result	s and Translocati	on Removal			•				
Year	Rams Harvested	Average Age Harvested Rams		Hunter cess		Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	7	5.6	10	0%		6.2			
2020	6	5.8	86	8%		8			
2022	2	2.5	10	0%		5			
Trend	down	down	sta	ble		down			
			Ew	/es		Ram Resid	ent	Ram No	nresident
Previous Qu	iotas		Res	NR	Archery	Early	Late	Early	Late
2017							8		
2020						6	3		1
2022						2			
Trend						down			
	December detter	_			İ	Desid			-:
	Recommendation	S	% Unit		4	Resident	[Nonre	esident
Total Ram Quota	Early % Late %	Res % NR %		Unit(s)	Archery	Early	Late	Early	Late

2	100%	0%	100%	0%	100%	045	2	
	Archery				0%			
			-					

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

0

Recommend 2 resident ram tags in Early Season. Quota to remain conservative. This herd experinced a die-off in late 2020 from (M. ovi) from Unit 182. Rational for below 50% and 8% of total 1+ Rams in model: Total mature ram availability still largely unknown from die-off, only one mature ram observed on aerial survey in 2022 and overall age of the 2 harvested rams from last year was 2.5, well under NDOW's objective of 6+.years old.

Reporting Biologist:

Neill

Supervisor: Munson

		Des	sert			Unit	Group:	132		Year	2023
urvey and	Model Re	sults			-		-				
Year	Survey	/ Total	Survey 4 Ra	-	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 Rams
2017-2018	5	7	6	6	3	3		120	72	7	4
2020-2021	10)3	1	0	6	6		140	80	5	5
2022-2023	4	6	5	5	2	2		130	78	7	4
Trend	dov	wn	dov	wn	dov	wn		stable	stable	stable	stable
lunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha	arvested	Averag Harveste		% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2019	2	2	5.	.5	100)%		11.5	0	NA	NA
2021	3	3	e	6	75.	00		15.5	0	NA	NA
2022	3	3	5	5	100)%		5	0	NA	NA
Trend	u	р	sta	ble							
					Ew	es		Ram Reside	ent	Ram Nor	nresident
					Res	NR	Archery	Early	Late	E a star	
revious Qu	otas				1.03		, a onlong	Lany	Late	Early	Late
revious Qu	lotas				0	0	0	2	0	Early 0	Late 0
2019						1	-				
					0	0	0	2	0	0	0
2019					0	0	0	2	0 0	0	0 0
2019 2022 Trend		andation	e		0	0	0	2 4 4 up	0 0 0	0 0 0	0 0 0
2019 2022 Trend		endation	s		0 0 0	0	0	2 4 4	0 0 0	0 0 0	0
2019 2022 Trend		endation	s Res %	NR %	0	0	0	2 4 4 up	0 0 0	0 0 0	0 0 0
2019 2022 Trend Cam Quota	Recomme			NR %	0 0 0 % Unit	0 0 0	0 0 0	2 4 4 up Resident	0 0 0	0 0 0 Nonre	0 0 0
2019 2022 Trend Cam Quota Total Ram Quota	Recomme Early %	Late %	Res %		0 0 0 % Unit Split	0 0 Unit(s)	0 0 0	2 4 4 up Resident Early	0 0 0	0 0 0 Nonre Early	0 0 0
2019 2022 Trend Cam Quota Total Ram Quota 2	Recomme Early % 100% Archery	Late % 0% 0%	Res % 100%		0 0 0 % Unit Split 100%	0 0 0 Unit(s) 132	0 0 0	2 4 4 up Resident Early	0 0 0	0 0 0 Nonre Early	0 0 0
2019 2022 Trend Cam Quota Total Ram Quota	Recomme Early % 100% Archery	Late % 0% 0% mendatio	Res % 100% ons		0 0 0 % Unit Split 100%	0 0 0 Unit(s) 132 0	0 0 0	2 4 4 up Resident Early	0 0 0	0 0 0 Nonre Early	0 0 esident Late
2019 2022 Trend Cam Quota Total Ram Quota 2 we Remova Total Ewe	Recomme Early % 100% Archery al Recom	Late % 0% 0% mendatio	Res % 100% ons	0%	0 0 0 % Unit Split 100% 0%	0 0 0 Unit(s) 132 0	0 0 0	2 4 4 up Resident Early 2	0 0 0 Late	0 0 0 Nonre Early 0	0 0 esident Late
2019 2022 Trend Cam Quota Total Ram Quota 2 we Remova Total Ewe	Recomme Early % 100% Archery al Recom	Late % 0% 0% mendatio	Res % 100% ons	0%	0 0 0 % Unit Split 100% 0%	0 0 0 Unit(s) 132 0	0 0 0	2 4 4 up Resident Early 2	0 0 0 Late	0 0 0 Nonre Early 0	0 0 0

As of 2022, Units 131 and 164 are now combined with Unit 132 for a combined hunt. Of the four tags recomended last year, one ram was harvested in Unit 131 and three rams were harvested in Unit 132. The combined hunt unit group 131, 164, 132 quota reflects a conservative quota recommendation based solely on Unit 132 due to the uncertainty of ram availability in Units 131 and 164. For the 2023 season, two ram tags are being recomended for the combined unit group. An aerial survey is scheduled for this unit group in the fall of 2023.

Reporting Biologist:

Kirk

Supervisor:

Donham

Survey and	Model Re	sults									
Year	Survey			I-5 yr old ms	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	6	7	:	3	3	3		110	70	6	3
2020-2021	5	9	2	2	-	1		80	50	5	2
2022-2023	1	9	2	2	-	1		60	40	4	2
Trend	dov	wn	sta	ble	sta	ble		down	down	down	down
Year	Rams Ha	arvested		ge Age ed Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remova
2019	2	2		5	67	%		12.7	0	NA	NA
2021	1		•	7	100	100.00		2	0	NA	NA
2022	1		;	3	100%			8	0	NA	NA
Trend	dov	wn	do	wn	sta	ble		down			
					Ew	/es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
					0	0	0	3			
2019					0	0	0	1			
2022					0	0	0	0			
Trend								down			
	Recomme	ecommendations						Resident	:	Nonre	esident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
0	100%	0%	100%	0%	100%	131, 164		0		0	
0	10070	0 /0		0.0							

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

:

As of 2022, Units 131 and 164 are now combined with Unit 132 for a combined hunt. Of the four tags recomended last year, one ram was harvested in Unit 131 and three rams were harvested in Unit 132. The combined hunt unit group 131, 164, 132 quota reflects a conservative quota recommendation based solely on Unit 132 due to the uncertainty of ram availability in Units 131 and 164. For the 2023 season, two ram tags are being recommended for the combined unit group. An aerial survey is scheduled for this unit group in the fall of 2023.

Reporting Biologist:

Kirk

Supervisor:

Donham

subspecies:	Des	sert		Unit	Group:	134, 251		Year	2023
Survey and I	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2019-2020	101	5	5	5		160	107	8	6
2021-2022	112	9	6	6		150	100	4	4
2022-2023						150	96	5	4
Trend	stable	up	sta	ble		stable	stable	up	stable
Year	Rams Harvested	Average Age Harvested Rams				Avg Days Hunted	Ewes Harvested	% Ewe Hunter	Ewes Nonleth
rear	Rams harvested	Harvostod Pama	% Ram Hunter Success			Hunted	Hanvastad	nunter	Nonietra
loui		Tial vesteu Rams	Succ	2622		Hunted	T lai vesteu	Success	Remova
2019	4	6.3	100			7.3	0	Success 0%	Remova 0
	4			0%					
2019		6.3	100	0% 1%		7.3	0	0%	0
2019 2021	2	6.3 6	100 40	0% 1% 7%		7.3 13	0 0	0% 0%	0 0
2019 2021 2022	2	6.3 6 4.5	100 40 67	0% 9% 7% wn		7.3 13 11	0 0 0	0% 0%	0 0 0
2019 2021 2022	2 2 stable	6.3 6 4.5	100 40 67 dov	0% 9% 7% wn	Archery	7.3 13 11 down	0 0 0	0% 0% 0%	0
2019 2021 2022 Trend	2 2 stable	6.3 6 4.5	100 40 67 dov	0% % % wn /es		7.3 13 11 down Ram Reside	0 0 0	0% 0% 0% Ram Nor	0 0 0 nresident
2019 2021 2022 Trend	2 2 stable	6.3 6 4.5	100 40 67 dov	0% % % wn /es		7.3 13 11 down Ram Reside Early	0 0 0	0% 0% 0% Ram Nor	0 0 0 nresident
2019 2021 2022 Trend Previous Qu 2019	2 2 stable	6.3 6 4.5	100 40 67 dov	0% % % wn /es		7.3 13 11 down Ram Reside Early 4	0 0 0	0% 0% 0% Ram Nor	0 0 0 nresident

Ram Quota	Recomme	endation	S					Resident		Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
3	100%	0%	100%	0%	100%	134, 251		3		0	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300

In 2011, a disease event caused a decline in lamb recruitment and affected adult survival. In recent years, higher lamb ratios have been observed, indicating a recovery of the population. Presumably, drought conditions have slowed this herd's rebound. Two new water development projects are scheduled to be built this summer in the Reveille range. This could help this herd expand south into unoccupied bighorn habitat. During the 2021 aerial survey, a lamb ratio of 41 lambs:100 ewes was classified. This ratio is higher than previous years and gives hope that this population will rebound. This hunt is difficult due to lower densities of bighorn sheep and large roadless areas. The Department received reports that snow conditions and bighorn distributions made this another difficult hunting season. With all this

Reporting Biologist:

Burkett

Supervisor: Bennett

Subspecies:		Des	sert			Unit	Group:	161		Year	2023
Survey and	Model Re	sults									
Year	Surve	y Total	-	l-5 yr old ms	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2018-2019	38	87	3	2	2	4		500	291	22	16
2021-2022	28	81	2	0	ç	9		550	335	19	17
2022-2023		-		-		-		400	246	15	13
Trend	do	wn	do	wn	dov	wn		down	down	down	down
Hunt Result	e and Tra	nelocati	on Romo	val							
Year	Rams H		Averaç		% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2018	ę	9	5	.7	90	1%		4.7			
2021	1	6	5	.8	94%			5	23	77%	
2022	1	1	5	.4	65%			7.7	22	44%	
Trend	do	wn	sta	ble	down			up	stable	down	
					Ew	/es		Ram Reside	ent	Ram Nor	nresident
Previous Qu	uotas				Res	NR	Archery	Early	Late	Early	Late
2019								5	3	0	2
2021					30	3		8	7	1	2
2022					45	5		8	7	1	1
Trend					up	up		stable	stable	stable	down
Ram Quota	Recomm	endation	s		% Unit			Resident	:	Nonre	sident
Tatal Dama	Early %	Early % Late % Res % NR %				Unit(s)	Archery	Early	Late	Early	Late
Total Ram Quota	Early 70				Split			-			
	45%	45%	90%	10%	100%	161	1	4	4	1	1

Ewe Removal Recommendations

ſ	Total Ewe Objective	# Reduce	% Reduce	Nonlethal		Harvest	2022% Succ	Res Tags	NR Tags
	224	22	9%		22		44%	45	5

Quota and Population Objective Rationale

Population Objective:

400

Poor harvest success, lower average age of harvested rams, and an extended average total days hunted in Unit 161, warrant a reduction in the ram quota. Drought conditions have compounded the effects of the high densities of sheep on summer range. The overutilization of habitat has been observed in the form of hedging in shrubs and a reduction of grass availability. This high density of sheep has reduced adult survival rates and produced a lower population estimate. Ewe tags recommendations will remain consistent with the previous year's quota to inhibit herd growth.

Reporting Biologist:

Burkett

Supervisor: Bennett

Subspecies:		Des	sert		·	Unit	Group:	163, 162		Year	2023
Survey and I	Model Res	sults	_	_			_			_	
Year	Survey	Total	Survey 4 Ra	-	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1⊦ Rams
2020-2021	169	9	1	8	1	1		320	205	12	9
2021-2022			-	-		-		320	206	13	9
2022-2023	33	3	2	2	2	2		110	77	5	3
Trend	dow	vn	do	wn	dov	wn		down	down	down	down
lunt Results	s and Trar	islocatio			[% Ewe	Ewes
Year	Rams Ha	rvested	Averaç Harveste	ge Age ed Rams	% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Nonleth Remova
2019	9		6	.8	100)%		5			
2021	8		6	.1	100)%		3.6			
2022	6		4	.5	75	%		7.3			
Trend	dow	vn	do	wn	dov	wn		up			
					Ew	es	6	Ram Reside	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2019								8		1	
2021							1	7		1	
2022							1	7		1	
Trend								stable		stable	
≀am Quota I	Recomme	commendations						Resident	:	Nonre	sident
Total Ram Quota	Early %				% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
1	90%	10%	90%	10%	100%	163, 162		1	0	0	0

Ewe Removal Recommendations

Archery

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

0%

Quota and Population Objective Rationale

0%

Population Objective:

400

The 2022 aerial survey was surprisingly low. Bighorn were largely absent from historical habitat. Several days were spent on the ground looking for bighorn sheep. A collaring effort took place in November of 2022. Two rams and three ewes were collared and all came back ELISA positive for Mycoplasma ovipneumoniae, indicating they have been exposed to the bacterium. This is evidence that the cause for the disappearance of bighorn sheep is due to a disease spillover. The population estimate has been decreased and the Department recommends to reduce the quota to one.

Reporting Biologist:

Burkett

Supervisor:

ubspecies:		Des	sert			Uni	t Group:	173N		Year	2023
Survey and	Model Re	sults									
Year	Survey	/ Total	Survey 4 Ra	•	-	6+ yr old ams		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2019-2020	4	5	4	4		1	1	130	109	9	6
2021-2022	30	6		1		0		120	103	9	6
2022-2023	-	-		-		-		120	74	5	4
Trend	stal	ble	do	wn	do	wn	1	stable	down	down	down
Hunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha		Avera			n Hunter cess		Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	1		8	3	33	3%		8.33			
2021	2	2	5	.5	50	0%		17.75			
2022	1		2	4	33	3%		6.3			
Trend	dov	wn	do	wn	do	wn		down			
					Ev	ves		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2020								3		1	
2021								4			
2022								3			
Trend								down			
Ram Quota I	Recomme	ndation	e					Resident		Nonre	sident
Total Ram Quota	Early %	Late %	s Res %	NR %	% Unit Split	Unit(s)	Archery		Late	Early	Late
Quota					Opin	2(2)				,	

Ewe Removal Recommendations

100%

5

Total Ew Objective	 Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

173N

173N MR

20%

80%

Quota and Population Objective Rationale

Management Ram Hunt

Population Objective:

1

4

300

This year marks the inaugural hunt for the 173N management ram tag. The management hunt will be confined to the hunt area's boundaries while the 173N hunter may hunt anywhere within 173N. These new boundaries are made up of US Forest Service designated wilderness and roadless areas. Being confined to these areas will relieve harvest of immature rams in the Seyler Peak area. Success in this Unit has remained low. This will continue to be a difficult hunt. Surveys in this unit range in sample size due to rugged terrain with thick limber pine, single leaf pinyon, and juniper. These factors also add to the complexity of the hunt. The Department recommends a slight increase in tags due to the chronic low success rates.

Reporting Biologist:

Burkett

100%

0%

Supervisor: Bennett

Subspecies:		Des	ert			Unit	Group:	173S		Year	2023
Survey and I	Model Resul	lts									
Year	Survey To	otal	Survey 4 Rai	-	-	6+ yr old ims		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2018-2019	43		2	2		3		80	53	2	3
2020-2021	51		6	;		6		80	47	2	2
2022-2023	52		8	}		7		60	39	2	2
Trend	stable		up		ι	ıp		down	down	stable	stable
Hunt Results	s and Transl	locatio	on Remo	val			<u> </u>				
Year	Rams Harve		Averag Harveste	e Age		Hunter cess		Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2019	2		5.	5	10	0%		11.5			
2021	1		6	;	50)%		4.5			
2022	2		8	;	10	0%		5.8			
Trend	stable		u	р	L	ıp		up			
					Ev	ves		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2020								2			
2021								2			
2022								2			
Trend								stable			
							-				
Ram Quota I	Recommend	lation	S					Resident	:	Nonre	sident
Total Ram Quota	Early % La	ate %	Res % NR %		% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
2	100%	0%	100%	0%	100%	173S		2		0	
	Archery										

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

200

Unit 173S has been separated from the 173N model. With the models separated, the new population estimates are used this year in the quota recommendation form. This year's lamb ratio indicates that disease could still be cycling through the herd. A positive ELISA test from a capture and collaring project in 2022 confirmed that portions of the herd have been exposed to *Mycoplasma ovipneumoniae*. Mature rams continue to be classified on survey. The Department recommends that the quota remain the same at 2 tags.

Reporting Biologist:

Burkett

Supervisor: Bennett

Subspecies:		Dese	ert			Unit	Group:	181		Year	2023
Survey and	Model Result	S									
Year	Survey Tota	al	Survey 4 Ra	•	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	408		5	1	48			609	353	27	20
2020-2021	440		5	9	61			625	371	32	20
2022-2023	138		ç)	16			515	324	38	15
Trend	down		down		do	wn		down	down	up	down
Hunt Result	s and Transic	ocation	n Remo	val							
Year	Rams Harves	sted	Averaç Harveste		% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	21		6	.4	100)%		6.3			
2020	18		7.	.8	0.9	90		4.6			
2022	24		6	.8	92	92%		4.8			
Trend	up		do	wn	u	р		down			
					Ew	es		Ram Residen		Ram Nor	nresident
Previous Qu	iotas				Res	NR	Archery	Early	Late	Early	Late
2017	16							14		2	
2020	20							18		2	
2022	20							18		2	
Trend											
Ram Quota	Recommenda						Resident	t	Nonre	sident	
Total Ram Quota					% Unit Split	Unit(s)	Archery	East	West	East	West

Ewe Removal Recommendations

60%

Archery

22

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

181

100%

0%

Quota and Population Objective Rationale

40%

0%

93%

7%

Population Objective:

12

8

1

1

Bighorn sheep ram quota of 22. 50% of 6 year old plus is 38. With 8% total rams of 15. Direct 60% of total quota into 181 East involving NAS jurisdiction. Navy restrictions and congestion can be an issue in the first two weeks of the hunt. So raised tag quota slightly to reduce ram ratio without swamping the DOD land with hunters and the required EOD training. Have had heavy ram harvest for quite some time now.

Reporting Biologist:

Jason Salisbury

Supervisor: 1200

Subspecies:		Des	sert		-	Unit	t Group:	182	-	Year	2023
Survey and I	<u>Model Re</u>	sults									
Year	Survey	y Total	-	4-5 yr old ams	Survey 6 Rar	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	32	28	2	22	34	4		612	352	29	21
2020-2021	9	92	1	10	8	3		453	273	18	14
2022-2023		·				·		421	268	24	12
Trend	do'	wn	down		dov	wn		down	down	up	down
Hunt Results	s and Tra	Inslocati	on Remc	val							
Year	Rams H	Rams Harvested Average Age Harvested Rams				Hunter cess		Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	1	9	5	5.8	1000	10000%		5.09		· · ·	
2020	1	8	f	6	0.9	94		8.89			
2022	1	6	5	5.7	75	%		4.63			
Trend	do	wn	U	qu	dov	wn		up		[!	1
				,	Ew	/es		Ram Reside	ent	Ram No	nresident
Previous Qu	iotas				Res	NR	Archery	Early	Late	Early	Late
2017								12		2	
2020								18		2	I
2022							2	18		2	
Trend					<u> </u>			<u> </u>		<u> </u>	
Ram Quota	Recommendations							Resident	t	Nonre	esident
Total Ram Quota	Early % Late % Res % NR %			NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
9	100%	0%	90%	10%	100%	182		8		1	
	Archery	0%			0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Population Objective: **Quota and Population Objective Rationale** Re 50% of total rams in model is 24 rams with 8% of total rams =12. Increased harvest of mature rams following the dieoff coupled with increased lion mortalitity. Has resulted in a low overall ram segement in the population. Hunters had a tough time turning up mature rams in the high 150's during the hunt. Reduce total ram quota to 9 this year in line with lowered mature ram availability.

Reporting Biologist:

Salisbury

Supervisor: Munson

Subspecies:		Des	sert			Unit	Group:	183		Year	2023
Survey and I	Model Re	sults									
Year	Survey	/ Total	-	l-5 yr old ms	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	29	94	3	2	2	9		396	234	12	13
2020-2021	18	35	2	2	15			257	158	17	8
2022-2023	4	6	;	3	4	ļ		265	162	20	8
Trend	do	wn	do	wn	dov	wn		down	down	up	down
Hunt Results	s and Tra	nslocatio	on Remo	val							
Year	Rams Harvested Average Age Harvested Rams				% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	ç)	6	90%			4				
2020	Ę	5	7	.4	100.00			3.2			
2022	8	3	-	7	100)%		2.75			
Trend	u	р	do	wn	sta	ble		down			
					Ew	es	1	Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2017								9		2	
2020								6		1	
2022								7		1	
Trend								up		stable	
-	Recommendations							Resident	t	Nonre	sident
Total Ram Quota	Early % Late % Res % NR %			% Unit Split	Unit(s)	Archery	Early	Late	Early	Late	
9	100%	0%	90%	10%	100%	183		8		1	
	Archery				0%			-			

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

ive:

50% of total rams in model is = 20 rams with 8% of total rams= 8. Raise the total ram quota by 1. 2021 was the first year we saw increases in lamb survival following the die off that occurred three years previously. Hunters found mature rams but the B&C quality was lacking. Lots of rams observed in the 140-150 range. Can justify a small increase in ram harvest compared to last year.

Reporting Biologist:

Salisbury

Supervisor: Munson

Subspecies:		Des	sert			Unit	Group:	184		Year	2023
Survey and I	Model Re	sults									
Year	Survey	/ Total	Survey 4 Ra	•	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	12	26	Ç)	7	7		182	111	7	6
2020-2021	12	27	1	3	16			161	100	5	6
2022-2023	7	8	4	1	5			126	84	4	3
Trend	do	wn	do	wn	dov	wn		down	down	down	down
Hunt Results	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha	arvested	Averaç Harveste		% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	2	ļ	5.	.6	100%			3.75			
2020	Ę	5	5.	.4	100.00			6.66			
2022	5	5	7	7	100)%		1.8			
Trend	u	р	u	р	dov	wn		down			
					Ew	es	1	Ram Reside	ent	Ram No	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2017								4		1	
2020								4		1	
2022								3		1	
Trend											
Ram Quota I	Recomme	endation	s			1		Resident	:	Nonre	sident
Total Ram Quota	Early % Late % Res % NR %			% Unit Split	Unit(s)	Archery	Early	Late	Early	Late	
6				15%	100%	184	, a onlony	5	Eato	1	Eato
	Archery	0,0			0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

Recommend the 50% of 6 six year old rams for total harvest. Which is equal to 4 tags total. five resident tags with one non resident tag.

Reporting Biologist:

Salisbury

Subspecies:	Des	sert		Unit	Group:	202		Year	2023
Survey and	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	121	10	1:	2		188	115	8	6
2020-2021	65	9	6	;		150	109	8	4
2022-2023						138	97	5	4
Trend	up	up	down			down	down	down	down
Hunt Result	s and Translocatio	on Removal							
Year	Rams Harvested	Average Age Harvested Rams	% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	5	6.2	83% 2						
2020	5	5.4	100	.00		1.8			
2022	3	7	100)%		4.33			
Trend	down	up	sta	ble		up			
			Ew	es		Ram Reside	ent	Ram No	nresident
Previous Qu	iotas		Res	NR	Archery	Early	Late	Early	Late
2017						6			
2020						5			
2022					1	5			
Trend					stable	stable			
Ram Quota Total Ram	Recommendation	s	% Unit			Resident		Nonre	sident

Ram Quota	Necomin	enuation	3				Resident			Noniesident	
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
3	100%	0%	100%	0%	100%	202		3		0	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

50% 6 year old rams = 5.8% of total rams = 4 rams. Recommend a quota of 3 ram tags. Increased highway road mortalities coupled with increased lion predation on the ram segments.

Reporting Biologist:

Salisbury

Supervisor: Munson

Subspecies:	ubspecies: Desert			Unit	Group:	204		Year	2023
Survey and I	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	21	2	1			65	37	4	2
2020-2021	30	2	2	2		59	37	4	2
2022-2023						44	29	2	1
Trend	stable	stable	sta	ble		down	down	down	stable
Hunt Results	s and Translocatio	on Removal	-						
Year	Rams Harvested	Average Age Harvested Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	0								
2020	2	4.5	100	.00		2			
2022	1	7	100)%		1			
Trend	stable	stable	sta	ble		stable			
			Ew	es		Ram Reside	ent	Ram No	nresident
Previous Qu	otas		Res	NR	Archery	Early	Late	Early	Late
2017									
2020						2			
2022					1	2			
Trend					stable	stable			
Ram Quota I	Recommendation					Resident		Nonre	sident

_		Necomin	enuation	3					Resident		NOTIC	SILCIIL
	Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
	1	100%	0%	100%	0%	100%	204		1		0	
		Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Popu	lation	Obj	ective:

Recommend 1 tag total for ram harvest.

Reporting Biologist:

Salisbury

Supervisor: Munson

Unit Group: 205/207 Desert Year 2023 Subspecies: **Survey and Model Results** Survey 4-5 yr old Survey 6+ yr old 1+ Ewes 50% 6+ yr 8% of 1+ Pop Survey Total Year Rams Rams Population old Rams Rams Estimate 2017-2018 364 31 46 626 361 25 21 48 49 359 2020-2021 726 436 24 23 2022-2023 283 32 40 326 203 21 10 Trend down down down down down down down **Hunt Results and Translocation Removal** % Ewe Ewes % Ram Hunter Average Age Avg Days Ewes **Rams Harvested** Year Hunter Nonlethal Harvested Rams Success Hunted Harvested Success Removal 2017 13 6.4 86% 5.26 2020 10 6.8 100.00 4.6 6 2022 6.9 66% 5.14 Trend down up down up Ram Resident Ewes Ram Nonresident **Previous Quotas** NR Res Archerv Early Late Earlv I ate 2017 11 2 2020 10 1 2022 8 1 Trend down stable

Ran	n Quota I	Recomm	endation	s					Residen	t	Nonresident	
	otal Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
	10	100%	0%	90%	10%	70%	205		6		1	
		Archery				30%	207	0	3	0	0	0

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

Recommend 8% of total rams for harvest =10 tags split between 205 and 207. We had three unsuccessfuls in the harvest data. Recommend continued low ram harvest in unit to account for any unkown disease events that still maybe occurring.

Reporting Biologist:

Salisbury

Subspecies:	Des		Unit	Group:	206,208		Year	2023	
Survey and	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rar	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2017-2018	144	15	14	1		264	178	6	3
2020-2021	129	12	12	2		272	179	5	7
2022-2023	98	7	6			205	145	4	5
Trend	down	down	dov	vn		down	down	down	down
Hunt Result	s and Translocatio	on Removal	1					~ -	
Year	Rams Harvested	Average Age Harvested Rams	% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2017	5	5	839	%		6.16			
2020	1	7	0.2	25		2			
2022	3	6.75	759	%		4.5			
Trend	down	stable	up)		up			
			Ewe	es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas		Res	NR	Archery	Early	Late	Early	Late
2017									
2020									
2022									

Ram Quota	Recomm	endation	s					Resident		Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
4	100%	0%	100%	0%	100%	206,208		4		0	
	Archery				0%						

Ewe Removal Recommendations

Trend

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

50% of 6 year old plus in model = 4 rams tags. One ram was harvested out of the main Excelsiors all other harvest came out of Candalaria Hills, and Garfield Hills. Continue low ram harvest especially if most rams harvest comes out of the newly established sheep populations that include the Candalaria Hills and the Garfield Hills.

Reporting Biologist:

Salisbury

Subspecies:		Des	sert			Unit	Group:	211		Year	2023
Survey and	Model Re	sults									
Year	Survey	/ Total	Survey 4 Ra	-5 yr old ms	Survey 6 Rai			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2019-2020	32	15	3	6	1	9		450	274	18	13
2021-2022	24	11	2	5	1	9		400	265	16	12
2022-2023		_		-		-		360	239	16	10
Trend	do	wn	do	wn	sta	ble		down	down	stable	down
lunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha	arvested	Averaç Harveste		% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2019	1	2	6.	.8	92	%		5.2			
2021	ę)	6.	.9	69	%		4.2			
2022	ę)	7	7	75	%		6.6			
Trend	sta	ble	sta	ble	u	р		up			
		ble	sta	ble	Ew	es		Ram Reside			
Trend Previous Qu 2019		ble	sta	ble	l		l Archery	Ram Reside Early	ent Late	Ram Noi Early 1	nresident Late
Previous Qu		ble	sta	ble	Ew	es		Ram Reside Early 13		Early 1	
Previous Qu 2019		ble	sta	ble	Ew	es	Archery	Ram Reside Early		Early	
Previous Qu 2019 2021		ble	sta	ble	Ew	es	Archery 1	Ram Reside Early 13 10		Early 1 2	
2019 2021 2022 2022 Trend	uotas			ble	Ew	es	Archery 1	Ram Reside Early 13 10 10	Late	Early 1 2 1 up	
Previous Qu 2019 2021 2022	uotas			NR %	Ew	es	Archery 1 1	Ram Reside Early 13 10 10 stable Resident	Late	Early 1 2 1 up	Late
Previous Qu 2019 2021 2022 Trend Ram Quota Total Ram	uotas	endation	S		Ew Res % Unit	es NR	Archery 1 1	Ram Reside Early 13 10 10 stable Resident	Late	Early 1 2 1 up Nonre	Late
Previous Qu 2019 2021 2022 Trend Ram Quota Total Ram Quota	Recomme Early %	endation Late %	s Res %	NR %	Ew Res % Unit Split	es NR Unit(s)	Archery 1 1 Archery	Ram Reside Early 13 10 10 stable Resident Early	Late	Early 1 2 1 up Nonre Early	esident
Previous Qu 2019 2021 2022 Trend Ram Quota Total Ram Quota	Recomme Early % 90% Archery	endation Late % 0% 10%	s Res % 90%	NR %	Ew Res % Unit Split 100%	es NR Unit(s)	Archery 1 1 Archery	Ram Reside Early 13 10 10 stable Resident Early	Late	Early 1 2 1 up Nonre Early	Late
Previous Qu 2019 2021 2022 Trend Ram Quota Total Ram Quota 10	Recomme Early % 90% Archery	endation Late % 0% 10% mendatio	s Res % 90% Ons	NR %	Ew Res % Unit Split 100%	es NR Unit(s) 211	Archery 1 1 Archery	Ram Reside Early 13 10 10 stable Resident Early	Late	Early 1 2 1 up Nonre Early	Late

The average age of harvested rams remains high in Unit 211. A new strain of *Mycoplasma ovipnuemoniae* has been detected in adjacent Units. A disease spillover is expected to have occurred. Ground surveys observed few lambs in ewe groups. The average days hunted was high with a continued low ram hunter success. The Department recommends a reduction in the total ram quota to 10.

Reporting Biologist:

Burkett

Supervisor: Bennett

Subspecies:		Des	sert			Unit	Group:	212		Year	2023
Survey and	Model Re	sults									
Year	Survey	y Total	-	I-5 yr old ms	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2019-2020	23	30	4	7	1	6		400	230	23	14
2021-2022	24	19	4	5	3	3		350	198	30	12
2022-2023	1:	31	1	8	3	1		250	150	21	8
Trend	do	wn	do	wn	do	wn		down	down	down	down
Hunt Result	e and Tra	nelocati	on Pomo	val							
Year	Rams H		Avera	ge Age ed Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2019	1	3	7	.8	93	8%		2.2			
2021	1	7	7	.8	94	%		3.3			
2022	1	6	7	.2	84	%		5.7			
Trend	do	wn	sta	ıble	dov	wn		up			
					Ew	/es	1	Ram Reside	ent	Ram Nor	nresident
Previous Qu	iotas				Res	NR	Archery	Early	Late	Early	Late
2019								6	6	1	1
2021							1	7	7	1	2
2022							2	9	7	1	1
Trend							up	up	stable	stable	down
Ram Quota I	Recomm	endation	s					Resident	:	Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
8	90%		90%	10%	100%	212	1	6		1	
	Archery	10%			0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

400

The 2022 aerial survey yielded another year of low lamb ratios. Reduced lamb ratios are concerning for the future of this herd, but many mature rams are still observed on survey. The cause of the lower lamb ratios can be attributed to drought and disease. The average age for harvested rams is still high. Although, ram hunter success dropped and average days hunted increased. With all this taken into consideration, the Department recommends a reduction in total ram tags to 8.

Reporting Biologist:

Burkett

Supervisor:

Subspecies:		Des	sert			Unit	Group:	213		Year	2023
Survey and I	Model Re	sults									
Year	Survey	y Total	Survey 4 Ra		Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2018-2019	29	97	5	4	1	9		400	202	22	15
2021-2022	-	-	-	-	-	-		330	175	23	12
2022-2023	9	5	1	2	1	2		120	69	11	4
Trend	do	wn	do	wn	do	wn		down	down	down	down
lunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams H		Averaç Harveste	ge Age	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2018	1	4	6	.1	100	0%		2.2	28	68%	
2021	1	6	6.	75	67	'%		4.5	10	67%	
2022	1	0	5	.6	63	63%		7.4	-	-	
Trend	do	wn	sta	ble	sta	ble		up			
					Ew	/es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2018					40	4		7	6	2	1
2021					15	1	2	7	6	2	2
2022					-	-	2	6	6	1	1
Trend							stable	down	stable	down	down
Ram Quota I	Recomm	endation	s					Resident	:	Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
4	80%	0%	80%	20%	100%	213	1	2		1	
	Archery	20%			0%						
			•			-					

Total Ewe Objective # Reduce % Reduce Nonlethal Harvest 2022% Succ Res Tags NR Tags

Quota and Population Objective Rationale

Population Objective:

400

Drought and disease have caused this herd to decline rapidly. Aerial surveys in 2022 revealed a low sample size and low ram ratio. The average age of harvested rams declined to 5.6. Average days hunted increased to 7.4 and hunter success was poor at 67%. These metrics all indicate a decline in the population. The Department recommends a reduced total ram quota of 4.

Reporting Biologist:

Burkett

Supervisor:

Subspecies:

Desert

Unit Group: 221, 223, 241

Year **2023**

Survey and Model Results

Year	Survey Total	Survey 4-5 yr old Rams	Survey 6+ yr old Rams	Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2020-2021	201	18	15	240	144	15	8
2021-2022				220	137	12	7
2022-2023	194	7	13	210	133	11	7
Trend	down	down	down	stable	stable	stable	stable

Hunt Results and Translocation Removal

Year	Rams Harvested	Average Age Harvested Rams	% Ram Hunter Success	Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2020	6	7.3	100%	4.2			
2021	6	7.3	71%	6.75			
2022	6	7	100%	6			
Trend	stable	stable	up	stable			

			Ewes	1	Ram Reside	Ram Nonresident		
Previous Qu	Previous Quotas		NR	Archery	Early	Late	Early	Late
2020					7			
2021					8			
2022					6			
Trend	Trend				down			

Ram Quota	Recomm	nendatio	ns			Resident		Nonre	Nonresident		
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
6	100%	0%	100%	0%	40%	221,222		2			
	Archery				60%	241		4			

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300

Severe drought conditions and continuing effects of *Mycoplasma ovipnumoniae* infection have reduced lamb survival and recruitment into the adult population leading to a slightly decreasing population. Hunt success and average days hunted has remained stable the last two years. Due to harvest metrics, and available mature rams the Department recommends a similar tag quota to last year.

Reporting Biologist:

Shanks

Supervisor: Ben

Subspecies:	Des	sert		Unit	Group:	243		Year	2023
Survey and I	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rar	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2019-2020	158	14	1	1		180	111	8	5
2021-2022	168	13	9)		170	108	9	5
2022-2023	-	-	-			180	126	8	4
Trend	stable	stable	dov	wn		stable	up	down	down
Year	Rams Harvested	Average Age Harvested Rams	% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter	Ewes Nonleth
Tear	Rams Harvested	Harvested Rams	Succ	ess		Hunted	Harvested	Success	Remova
2020	4	5.8	100			5.75			
2021	4	6.8	60	%		5.5			
2022	5	7.6	100)%		6.6			
Trend	up	up	u	o		up			
			Ew	es		Ram Reside	ent	Ram Nor	nresident
Previous Qu	otas		Res	NR	Archery	Early	Late	Early	Late
2020						5			
2021						5			
2022						5			
Trend						stable			
								1	
Ram Quota F Total Ram	Recommendation	S	% Unit	1	ļ	Resident		Nonre	sident

	Necomm	enuation	3					Resident	•	NOME	SILLEIN
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
5	100%	0%	100%	0%	100%	243		5		0	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300

This bighorn population has undergone a slight decrease over the past 4 years, yet a record survey of 168 sheep was conducted in 2021. No formal surveys were conducted in 2022. The decrease in population size is likely due to low lamb survival caused by severe drought conditions experienced the past 2 years. The mature ram segment of this herd is still strong as supported by survey data and hunt metrics. Hunter success has fluctuated over the past 3 years due to limited road access and difficulty in accessing the unit, but average age of harvested rams remains high. The Department recommends no change in quota.

Reporting Biologist:

Shanks

Supervisor: Bennett

Subspecies:		Des	sert			Unit	Group:	244		Year	2023
Survey and	Model Re	sults									
Year	Survey	/ Total	Survey 4 Ra	-	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2020-2021	9	4	8	3	1	0		140	87	4	4
2021-2022	-	-	-	-	-	-		110	70	4	3
2022-2023	6	7	4	1	7	7		105	65	5	3
Trend	do	wn	do	wn	do	wn		stable	stable	up	down
Hunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha		Averaç Harveste	je Age	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	Ę	5	8.	.8	100	0%		6			
2021	4	1	7.	.3	100	0%		9.7			
2022	3	3	9.	.7	100	0%		6			
Trend	do	wn	u	р	sta	ble		down			
Previous Qu	iotas				Ew Res	ves NR	Archery	Ram Resid Early	ent Late	Ram Noi Early	nresident Late
2020							7 e.i.e.i j	5			
2021								3		1	
2022								2		1	
Trend								down		stable	
Ram Quota	Recomme	endation	s					Resident		Nonre	esident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
3	100%	0%	100%	0%	100%	244		3		0	
	Archery				0%						
Ewe Remov	al Recom	mendatio	ons								
Total Ewe Objective	# Re	duce	% Re	duce	Nonle	ethal		Harvest	2022% Succ	Res Tags	NR Tags
Quota and	Populati	ion Obje	ective Ra	ationale			Рор	ulation Ol	ojective:	225	

This population has been relatively stable with a slight decline in recent years due in part to drought. Movement between the Arrow Range and adjacent ranges is suspected, especially in years with poor forage conditions. The 2022 fall survey indicated sufficient mature rams in this unit, therefore we recommend no change in total quota for 2023.

Reporting Biologist:

Wood

Supervisor: E

Subspecies:	Des	sert		Unit	Group:	245,133		Year	2023
Survey and	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rai	•		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 Rams
2020-2021	113	8	5	;		140	84	5	4
2021-2022				-		140	84	4	4
2022-2023	85	2	7	,		130	79	4	4
Trend	down	down	u	p		stable	stable	stable	stable
Year	Rams Harvested	Harvested Rams	Succ	ess		Hunted	Ewes Harvested	Hunter Success	Nonleth Remov
Year	Rams Harvested	Average Age Harvested Rams	% Ram Succ			Avg Days	Ewes Harvested		Ewes Nonleth
2020	4	6	100	۱%		2		0000000	Remov
2020	4	7	100			7			
2022	4	7	100			4.3			
Trend	stable	stable	sta			down			
			Ew	es		Ram Resid	ent	Ram Nor	nresiden
Previous Qu	otas		Res	NR	Archery	Early	Late	Early	Late
2020						4			
2021						4			
2022						4			
Trend						stable			
	D	_				D			
	Recommendation	S	0/ 11 **			Resident	I	Nonre	sident
Total Ram			% Unit						

1	kam Quota I	Recomm	endation	S					Resident		Nonre	sident
	Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
	3	100%	0%	100%	0%	100%	245,133		3		0	
		Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

200

This population is slightly decreasing due to lower lamb recruitment in recent years. Over the past 3 years, hunter success has remained 100%, the average number of days hunted has remained low, and the average age of harvested rams has increased. Although average age has remained strong the quality of rams and the lack of replacement of ram cohorts in the population due to poor lamb recruitment is causing the Department to recommend a slight tag decrease.

Reporting Biologist:

Shanks

Supervisor:

Subspecies:		Des	sert			Unit	Group:	252		Year	2023
Survey and	Model Re	sults									
Year	Survey	y Total	Survey 4 Ra	-5 yr old ms	Survey 6 Rai			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1⊦ Rams
2020-2021	8	7	6	6	1	0		120	93	5	2
2021-2022	-	-	-	-		-		100	77	5	2
2022-2023	4	4	3	3	4	ŀ		60	50	3	1
Trend	do	wn	do	wn	dov	wn		down	down	down	down
Hunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha	arvested	Averaç Harveste		% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	4	4	7	.8	100)%		3.8			
2021	2	2	8	.5	100)%		11			
2022	2	2	7	.5	100)%		9.5			
Trend	sta	ble	sta	ble	stal	ble		down			
Previous Qu	iotas				Ew Res	es NR	Archery	Ram Reside Early	ent Late	Ram Noi Early	nresident Late
2020								4			
2021								3			
2022								2			
Trend								down			
Ram Quota	Recomme	endation	s				l	Resident		Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
1	100%	0%	100%	0%	100%	252		1		0	
	Archery				0%						
· · ·			ons								
	al Recom	mendati							2022%		
Ewe Remov Total Ewe Objective	al Recom # Re			duce	Nonle	ethal		Harvest	Succ	Res Tags	NR Tags
Ewe Remov Total Ewe				duce	Nonle	ethal		Harvest		Res Tags	NR Tags

The Stonewall bighorn population has experienced low lamb ratios for the past eight years. This is attributed to *Mycoplasma ovipneumoniae*, causing high lamb mortality, and resulting in a severe population decline. Mature rams are still present in this population, but a drop of 1 tag is warranted because of a drop in the 50% of 6+ year old ram segment of the herd.

Reporting Biologist:

Burkett

Supervisor: E

Subspecies:		Des	sert			Unit	Group:	253		Year	2023
Survey and	Model Res	sults									
Year	Survey	Total		l-5 yr old ms	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2018-2019	14	8	2	4	2	9		180	100	14	6
2021-2022	11	7	1	9	1	9		130	80	16	4
2022-2023	10	5	1	4	1	3		120	77	16	3
Trend	dov	vn	do	wn	do	wn		stable	stable	stable	down
lunt Result	s and Trar	nslocatio	on Remo	val							
Year	Rams Ha	rvested		ge Age ed Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remova
2018	6		8	.5	86	%		2.3	11		
2021	8		7	.8	100	0%		2.9	-		
2022	5		8	.6	83	%		6.7	-		
Trend	dov	vn	sta	ble	do	wn		up			
					Ew	es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2018								7			
2021								6		1	
2022								5		1	
Trend								down		stable	
Ram Quota I	Recomme	ndation	c				I	Resident		Nonre	sident
Total Ram	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
					-			4		-	
Quota	100%	0%	80%	20%	100%	253		4		1	

e Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300

Estimated lamb recruitment in this population has been depressed since 2015, the same year two harvested rams tested positive for *M. ovi*. In an effort to monitor disease prevalence and connectivity with adjacent mountain ranges, we collared and tested 15 bighorn sheep (9 ewes, 6 rams) in this herd in November 2022. Above-average precipitation in the autumn and winter provided a temporary reprieve from prolonged drought, though herd-level effects may not be seen. The demographics of this population skew to older age classes, and we recommend a reduction in quota to 5 (4 resident and 1 non-resident).

Reporting Biologist:

Wood

Supervisor:

Subspecies:	Des	sert	Uni	t Group:	254		Year	2023
Survey and I	Model Results							
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6+ yr old Rams		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1⊦ Rams
2020-2021	158	14	10		170	113	7	4
2021-2022					120	85	5	3
2022-2023	114	13	10		113	78	5	3
Trend	down	down	stable		stable	stable	stable	stable
N/	Rams Harvested	Average Age	% Ram Hunter		Avg Days	Ewes	Hunter	Nonleth
							Hunter	Nonletha
Year	Rains Haivesteu	Harvested Rams	Success		Hunted	Harvested	Success	Remova
Year 2020	3	Harvested Rams 8	Success 100%		Hunted 4.7	Harvested		Remova
							Success	
2020	3	8	100%		4.7		Success 	
2020 2021	3 4	8 7.5	100% 80%		4.7 2.3		Success 	
2020 2021 2022	3 4 5	8 7.5 7.6	100% 80% 100%		4.7 2.3 5.6		Success 	
2020 2021 2022	3 4 5 up	8 7.5 7.6	100% 80% 100% up	Archery	4.7 2.3 5.6 up Ram Reside		Success 	
2020 2021 2022 Trend	3 4 5 up	8 7.5 7.6	100% 80% 100% up Ewes		4.7 2.3 5.6 up Ram Reside	 	Success Ram Nor	 nresident
2020 2021 2022 Trend	3 4 5 up	8 7.5 7.6	100% 80% 100% up Ewes		4.7 2.3 5.6 up Ram Reside Early	 	Success Ram Nor	 nresident
2020 2021 2022 Trend Previous Qu 2020	3 4 5 up	8 7.5 7.6	100% 80% 100% up Ewes		4.7 2.3 5.6 up Ram Reside Early 3	 	Success Ram Nor	 nresident

F	Ram Quota	Recomme	endation	S		Resident			Nonresident			
	Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
	3	100%	0%	100%	0%	100%	254		3		0	
		Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

225

The Falcon guzzler project was completed in January 2023, and the Department conducted an emergency water haul to the Eagle Basin guzzler during September surveys despite good precipitation. It is suspected that sheep in this population, especially rams, move seasonally between the Specter Range and the NNSS to the north and/or Last Chance Range to the south. In November, six bighorn sheep were collared (3 ewes, 3 rams) as part of an effort to monitor movement and connectivity between these adjacent ranges. One ewe tested positive for M. ovi. Two specialty tagholders harvested from this unit in 2022 (Dream and Heritage) in addition to the three standard tags with a 100% success rate. Due to known disease prevalence, low lamb ratios for the past three years, and high harvest in 2022,

Reporting Biologist:

Wood

Supervisor: Bennett

Subspecies:		Desert I	Bighorn			Unit	Group:	261		Year	2023
Survey and	Model Re	sults									
Year		y Total	Survey 4 Ra	-	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2020-2021	1.	17	7	7	1	6		140	89	7	4
2021-2022	-	-	-	-	-	-		120	73	5	3
2022-2023	6	2	3	3	7	7		110	69	5	3
Trend	do	wn	do	wn	dov	wn		down	down	stable	stable
Hunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams H	arvested	Averaç Harveste		% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonlethal Removal
2020	4	4	9.	.5	100	0%		8			<u> </u>
2021	Ę	5	6	.2	100)%		6.8			
2022		1	8	3	33	%		12.5			
Trend	do	wn	u	р	dov	wn		up			
Previous Qu	iotas				Ew	es		Ram Resid	ent	Ram No	nresident
					Res	NR	Archery	Early	Late	Early	Late
2020								3			
2021								5			
2022								3			
Trend								down			
Dam Overte			_				I	Desident		l Norma	
Ram Quota	Recomm	endation	s		% Unit			Resident	[Nonre	esident
Quota	Early %	Late %	Res %	NR %	Split	Unit(s)	Archery	Early	Late	Early	Late
2	100%	0%	100%	0%	100%	261		2		0	
	Archery				0%						
Ewe Remov	al Baaam	mondoti	ono								
Total Ewe		menuali	0115				1	I	2022%	I	
Objective	# Re	duce	% Re	educe	Nonle	ethal		Harvest	Succ	Res Tags	NR Tags
							•				<u> </u>
Quota and	Populati	ion Obje	ective Ra	ationale			Pop	ulation Ol	ojective:	225	
Due to extrer 2020 through growth remai Due to low hu quota of 2 tag	n 2022. His Ins negativ unter succ	storical fa ve in mod cess, incre	III surveys Iels. Migra	indicate ation is po	lamb rationssible to	os betwe /from adj	en 30 ar jacent ra	nd 50 lamb nges (Nop	os:100 ewe ah, Restin	s, but popu g Spring, F	ulation ⁻ uneral).

Reporting Biologist:

Wood

ubspecies:		Des	sert			Unit	Group:	262		Year	2023
urvey and	Model Re	sults									
Year	Survey		Survey 4 Ra	•	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 Rams
2018-2019	15	52	1	2	1	4		150	95	10	4
2021-2022	8	3	2	2	ç)		140	88	6	5
2022-2023	3	7		1	5	5		120	74	5	4
Trend	do	wn	do	wn	do	wn		down	down	down	down
lunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha		Averaç Harveste	je Age	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2018	2	1	7	.3	80	1%		4.4			
2021	2	2	-	7	40	1%		7.7			
2022	3	3	8	3	100	0%		3.7			
Trend	u	р	sta	ble	u	р		down			
					Ew	/es	1	Ram Resid	ent	Ram No	nresident
revious Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2018								4		1	
2021								5			
2022								3			
Trend								down			
Ram Quota	Recomme	endation	S				l	Resident		Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
3	100%	0%	100%	0%	100%	262		3		0	
	Archery				0%						
total Ewe	al Recom	mendatio	ons						2022%		
Objective	# Re	duce	% Re	educe	Nonle	ethal		Harvest	Succ	Res Tags	NR Tags
Quota and								ulation Of		600	

Weather conditions prevented us from surveying the middle and upper Spring Mountains/La Madre area of this unit in 2022. We recommend an increased survey effort in 2023 for a comprehensive assessment of distribution, ram age class, and lamb productivity throughout the unit. Ram quality and hunter effort indicate there are sufficient mature rams, and the Department recommends no change in quota for 2023.

Reporting Biologist:

Wood

Supervisor:

Subspecies:		sert			onic	Group:	263		Year	2023
Survey and	Model Results									
Year	Survey Total	-	I-5 yr old ms	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2018-2019	226	1	1	2	8		250	157	22	7
2021-2022	165	8	8	1	9		200	114	11	6
2022-2023	211	1	4	1	5		230	120	13	6
Trend	up	u	р	do	wn		up	stable	up	stable
Junt Pocult	s and Translocat	ion Pomo	val							
Year	Rams Harvested	Avera	ge Age ed Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2018	11	8	.7	100)%		2.5			
2021	8	8	.9	100)%		3.4			
2022	4	8	8	80	%		7.6			
Trend	down	sta	ıble	do	wn		up			
				Ew	es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	iotas			Res	NR	Archery	Early	Late	Early	Late
2018							8		1	
2021							7		1	
2022							4		1	
Trend							down		stable	
						I	Resident	t	Nonre	sident
Ram Quota I	Recommendatio	ns								
Ram Quota Total Ram Quota	Recommendation	n s Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
Total Ram			NR % 15%		Unit(s) 263	Archery	Early 5	Late	Early 1	Late

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

400

This unit was surveyed in 2022 and the most recent survey prior was conducted in 2018. Estimates for lamb recruitment have been poor for the past ten years based on survey data, range conditions, and prolonged drought. However, based on the observed age classes of the most recent survey, we believe recruitment may have been higher than estimated between the 2018 and 2022 survey years. Younger age classes may have been underestimated, however mature ram estimates remain the same. The Department recommends an increase in quota to 6 for 2023.

Reporting Biologist:

Wood

Supervisor: B

Subspecies:		Des	sert			Unit	Group:	264-266		Year	2023
Survey and	Model Re	sults									
Year	Survey	y Total		l-5 yr old ms	Survey 6 Ra			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2019-2020	3	9	(C	()		140	86	11	4
2021-2022	-	-	-	-	-	-		90	54	5	2
2022-2023	-	-	-	-	-	-		70	44	4	2
Trend								down	down	down	stable
Hunt Result	s and Tra	nslocati	on Romo	val							
Year	Rams H		Avera		% Ram Suce			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2019		2	8	3	10	0%		1.5			
2021	2	2	6	.5	10	0%		3.5			
2022	2	2	8	3	10	0%		5			
Trend	sta	ble	u	р	sta	ble		up			
					Ew	/es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	iotas				Res	NR	Archery	Early	Late	Early	Late
2019								1			
2021								2			
2022								2			
Trend								stable			
			_								
Ram Quota	Recomm	endation	s		0/ 11 :4	r –		Resident		Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
	100%	0%	100%	0%	100%	264-266		2		0	
2	10070	070									

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

600

Units 264-266 were combined as a unit group in 2021. Bighorn sheep densities remain low in the Newberry and Eldorado Mountains due to the impacts of disease and prolonged drought. Hunter success has been good with a small increase in hunter effort. The Department recommends no change in quota for 2023.

Reporting Biologist:

Wood

Supervisor: E

Subspecies:	Des	sert		Unit	Group:	267		Year	2023
Survey and I	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rar	•		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2019-2020	251	14	23	3		300	200	12	8
2021-2022	296	13	9			320	190	12	8
2022-2023	305	31	16	6		360	210	12	8
Trend	up	up	up	C		up	up	stable	stable
Year	s and Translocatio Rams Harvested	Average Age	% Ram			Avg Days	Ewes	% Ewe Hunter	Ewes Nonleth
Year	Rams Harvested	Harvested Rams	Succ			Hunted	Harvested		
1 Cui		That voolog T tarrie	0400			mantoa		Success	Remova
2019	10	7.1	100			2.9		Success	Remova
	10 9)%				Success	Remova
2019		7.1	100)% %		2.9		Success	Remova
2019 2021	9	7.1 7.1	100 909)% %)%		2.9 4.2		Success	Remova
2019 2021 2022	9 8	7.1 7.1 7.2	100 90 ⁴ 100	0% % 0% Dle		2.9 4.2 7.6	ent	Ram Nor	
2019 2021 2022	9 8 down	7.1 7.1 7.2	100 90 ⁰ 100 stat	0% % 0% Dle	Archery	2.9 4.2 7.6 up Ram Reside	ent Late		
2019 2021 2022 Trend	9 8 down	7.1 7.1 7.2	100 90 ⁴ 100 stat	0% % 0% ble es		2.9 4.2 7.6 up Ram Reside		Ram Nor	nresident
2019 2021 2022 Trend	9 8 down	7.1 7.1 7.2	100 90 ⁴ 100 stat	0% % 0% ble es		2.9 4.2 7.6 up Ram Reside Early	Late	Ram Nor Early	nresident Late
2019 2021 2022 Trend Previous Qu 2019	9 8 down	7.1 7.1 7.2	100 90 ⁴ 100 stat	0% % 0% ble es		2.9 4.2 7.6 up Ram Reside Early 9	Late	Ram Nor Early 1	nresident Late

R	am Quota	Recomm	endation	S					Resident		Nonre	sident
	Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
	10	90%	0%	90%	10%	100%	267	1	8		1	
_		Archery	10%			0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

350

This year saw the second-highest number of bighorn sheep classified on survey in this unit, though the number of lambs observed was very low. Despite prolonged drought conditions, this population appears to be growing. This population is modeled together with Unit 268 due to high connectivity between ranges. Bighorn sheep in these units do not have a documented history of *M. ovi* and remain some of the only *M. ovi*-free extant herds in the west. None of the four one-horn ram tags issued for combined units 267 and 268 were filled in 267. A new archery hunt was implemented for 2023 with a single tag. The Department recommends an increase in quota for a total of ten tags (8 resident, 1 non-resident, and 1 archery).

Reporting Biologist:

Supervisor: Bennett

Subspecies:		Des	sert			Unit	Group:	268		Year	2023
Survey and	Model Re	sults									
Year	Survey	/ Total	-	l-5 yr old ms	Survey 6 Rai			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2019-2020	48	30	3	1	5	4		650	310	37	25
2021-2022	38	30	3	4	6	0		550	245	48	23
2022-2023	49	99	7	0	7	6		520	240	38	15
Trend	u	р	u	р	u	р		stable	stable	down	down
Hunt Result	s and Tra	nslocatio	on Remo	val							
Year	Rams H		Averaç		% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remova
2019	3	1	7.	.6	97	%		5.8	50	80%	
2021	4	0	7	.3	98	%		4.8	46	62%	
2022	3	4	7	.3	95	%		5.6	19	52%	28
Trend	do	wn	sta	ble	sta	ble		stable	down	down	
					Ew	es		Ram Reside	ent	Ram Nor	nresident
Previous Qu	iotas				Res	NR	Archery	Early	Late	Early	Late
2020					72	8	-	28		4	
2021					76	9		37		7	
2022					36	4		33		5	
Trend					down	down		down		down	
	_						1	_		1	
Ram Quota	Recomm	endation	S		o/ 11 ·/	1		Resident		Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
38	100%	0%	87%	13%	100%	268		33		5	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal		Harvest	2022% Succ	Res Tags	NR Tags
219	21	9%	0	21		52%	36	4

Quota and Population Objective Rationale

Population Objective:

500

There were more bighorn sheep observed and in larger groups in the North Muddy Mountains, California Ridge, and Weisser Ridge this year than in the previous ten years, likely due to monsoonal precipitation and green-up during autumn surveys. A new hardline water development was installed in Valley of Fire State Park, and a weather station was installed at the Five Ram guzzler to monitor local conditions. The ewe quota was reduced in 2022 due to the transfer of thirty-two bighorn sheep (28 ewes, 4 rams) to Utah to use as a clean source herd. Future transfers to Utah are being considered over the next several years, though not in 2023. Four one-horn ram tags were issued for combined Units 267 and 268, and three one-horn rams were harvested in 268. The Department recommends a quota of 38 total ram tags and 40 total ewe tags. **Reporting Biologist:** Wood **Supervisor:** Bennett

Ver. 1.2, Rev. 3/16/2022

Subspecies:	Des	sert	Uni	t Group:	271,242		Year	2023
Survey and I	Model Results							
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6+ yr old Rams		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2019-2020	144	15	12		300	188	14	9
2021-2022	77	9	9		280	172	13	8
2022-2023	-	-	-		230	156	12	7
Trend	down	down	down		down	down	down	down
Year	Rams Harvested	Harvested Rams	Success		Hunted	Harvested	Hunter Success	Nonleth Remova
		Average Age	% Ram Hunter		Avg Days	Ewes	% Ewe	Ewes
		Harvested Rams	Success		Hunted	Harvested	Success	Remova
	-	-	2221					
2020	9	8	88%		6.4			
2020 2021	8	7.5	77%		6.4 8.6			
					-			
2021	8	7.5	77%		8.6			
2021 2022	8 5	7.5 8.4	77% 71%		8.6 10.1	ent	Ram Nor	nresident
2021 2022 Trend	8 5 down	7.5 8.4	77% 71% stable	Archery	8.6 10.1 up Ram Reside	ent Late	Ram Nor Early	nresident Late
2021 2022	8 5 down	7.5 8.4	77% 71% stable Ewes		8.6 10.1 up Ram Reside			
2021 2022 Trend Previous Qu	8 5 down	7.5 8.4	77% 71% stable Ewes		8.6 10.1 up Ram Reside Early		Early	
2021 2022 Trend Previous Qu 2020	8 5 down	7.5 8.4	77% 71% stable Ewes		8.6 10.1 up Ram Reside Early 9		Early 1	

_	Ram Quota Recommendations								Resident			Nonresident	
	Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late	
	5	100%	0%	90%	10%	100%	271,242		4		1		
		Archery				0%							

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

400

This bighorn population has declined in recent years due to potential disease exposure, drought and poor lamb recruitment. The most recent aerial survey in 2021 was very low, however there was no evidence of an all age-class die off. Recent aerial survey data and poor lamb recruitment were indications that we were overestimating this population leading the Department to model this population down. Harvest metrics including success and average days hunted are also trending in down and up respectively. The Department is recommending a slight tag decrease due to population trend and harvest metrics.

Reporting Biologist:

Shanks

Supervisor: Bennett

Subspecies:	ubspecies: Desert					Unit	Year	2023				
Survey and I	Model Re	sults										
Year	Survey	Total	-	l-5 yr old ms	Survey 6 Rai			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams	
2019-2020	5	5	-	7	5	5		90	58	6	3	
2021-2022		-	-	-	-	_		70	45	3	2	
2022-2023		-	-	-		-		60	37	3	2	
Trend	Frend							down	down	stable	stable	
Year	Rams Ha		tion Removal Average Age Harvested Rams		% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remova	
2019	0)			09	%		7.0				
2021	1		8		100)%		1				
2022	1		8	3	100)%		11				
Trend	stal	ble	sta	ble	sta	ble		up				
						Ewes		Ram Resident			Ram Nonresident	
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late	
2020								1				
2021								1				
2022								1				
Trend								stable				
Ram Quota I	Recomme	endation	S					Resident	t	Nonre	sident	
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late	
1	100%	0%	100%	0%	100%	272		1		0		

Ewe Removal Recommendations

Archery

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

0%

Quota and Population Objective Rationale

Population Objective:

225

This unit was not surveyed in 2022. Unit 272 is remote, vast and sparsely populated by bighorn sheep. Hunter success over the last 10 years (2012 - 2022) was 59%. The Department recommends no change in ram quota relative to last year.

Reporting Biologist:

Wood

Supervisor:

Subspecies:		Des	sert		Unit Group: 280					Year	2023
Survey and I	Model Re	sults									
Year	Survey	/ Total	Survey 4 Ra	-5 yr old ms	Survey 6+ yr old Rams		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams	
2020-2021	10	00	8	3	8	3		140	91	6	4
2021-2022	-	-	-	-	-	-		100	62	5	3
2022-2023	14	17	1	6	1	3		150	93	9	5
Trend	Trend up up			u	р		up	up	up	up	
lunt Results	and Tra	nslocatio	on Remo	val							
Year			Averaç Harveste	je Age	% Ram Hunter Success			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	2	1	ę	9	80%			3.6			
2021	3	3	8	.3	60%			6.8			
2022		3	9	.7	100%			4.3			
Trend	sta	ble	sta	ble	u	р		down			
					Ew	/es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2020							,	5			
2021								5			
2022					-			3			
Trend								down			
						•					
Ram Quota I	Recomme	endation	s					Resident	:	Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
5	100%	0%	100%	0%	100%	280		5		0	
	Archery				0%						
Ewe Remova	Bacom	mondati	one				_				
Total Ewe Objective	# Re			duce	Nonle	ethal		Harvest	2022% Succ	Res Tags	NR Tag
			/0110						Ouce		

Quota and Population Objective Rationale

Population Objective:

225

This unit falls within the National Test and Training Range (NTTR) and Desert National Wildlife Range, which has access and activity restrictions enforced by the US Air Force (USAF) and US Fish and Wildlife Service (FWS). Survey results were very good this year with a high observed lamb ratio and good range conditions. The Department recommends an increase in quota to 5 tags this year due to favorable estimates and harvest metrics.

Reporting Biologist:

Wood

Supervisor:

Subspecies:		Des				Unit	Group:	201		Year	2023
Survey and	Model Res	ults									
Year	Survey ⁻	Total	-	l-5 yr old ms	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2020-2021	109)	1	7	2	0		210	126	10	7
2021-2022	72		2	4	6	6		110	67	6	4
2022-2023	93		1	0	8	3		110	66	6	4
Trend	up		u	р	u	р		stable	stable	stable	stable
Hunt Result	o and Tran	alaasti	n Bama	val							
Tuni Result		isiocalio			0/ F				_	% Ewe	Ewes
Year	Rams Har	rvested	Averaç Harveste	ge Age ed Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	Hunter Success	Nonletha Remova
2020	6		8	3	100)%		3.8			
2021	6		6	.3	75	%		4.75			
2022	1		ę	9	25	%		6			
Trend	dow	'n	u	р	dov	wn		up			
					Ew	es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2020								6			
2021								8			
2022								4			
Trend								down			
							_				
	Recommer	ndation	s		-	-		Resident	:	Nonre	sident
	·				% Unit		Anabami	Farby	Lata	F arb <i>i</i>	1 - 4 -
Ram Quota Total Ram Quota	Early %	Late %	Res %	NR %	Split	Unit(s)	Archery	Early	Late	Early	Late
	Early % 100%	Late %	Res % 100%	NR % 0%	Split 100%	Unit(s) 281	Archery	Earry 4	Late	Eany 0	Late

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300

This unit falls within the National Test and Training Range (NTTR) and Desert National Wildlife Range and has access and activity restrictions enforced by the US Air Force (USAF) and US Fish and Wildlife Service (FWS). Only one of four tagholders were successful in 2022 (one tag was returned) while six of the eight tagholders were successful in 2021 with hunter effort increasing both years. Range conditions were good during autumn surveys with noticeable greenup from monsoons, and recent winter precipitation should maintain favorable forage conditions. The Department recommends no change in quota for 2023.

Reporting Biologist:

Wood

Supervisor:

Bennett

Subspecies:		Des	sert			Unit	Group:	282		Year	2022
Survey and	Model Res	ults									
Year	Survey ⁻	Total	-	l-5 yr old ms	Survey 6 Rai	•		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2020-2021	97		8	3	1:	2		80	97	7	5
2021-2022	52		:	3	2	2		60	35	5	2
2022-2023	26		2	2	C)		50	30	4	2
Trend	dow	n	do	wn	dov	wn		down	down	down	down
lunt Result					% Ram	Hunter		Avg Days	Ewes	% Ewe	Ewes
Year	Rams Har	vested		Average Age Harvested Rams		cess		Hunted	Harvested	Hunter Success	Nonletha Remova
2020	3		1	10		%		7.3			
2021	2		(6	66	%		8.3			
2022	0			-	00	%		0			
Trend	dow	n	do	wn	dov	wn		up			
					Ew	es		Ram Reside	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2020								4			
2021								5			
2022								1			
Trend								down			
Pom Queta I	Baaammar	adation	_				I	Desident		Name	-:
Ram Quota I	Recommen	luation	5	n				Resident		Nonre	sident
Total Ram					% Unit						

Ewe Removal Recommendations

100%

Archery

0

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2021% Succ	Res Tags	NR Tags

282

100%

0%

Quota and Population Objective Rationale

0%

100%

0%

Population Objective:

0

175

0

This unit falls within the National Test and Training Range (NTTR) and Desert National Wildlife Range and has
access and activity restrictions enforced by the US Air Force (USAF) and US Fish and Wildlife Service (FWS). Fewer
sheep than expected were classified in the Desert Range and some coverage of the East Desert water systems.
There were no mature rams observed. A collaring project set for 2022 in collaboration with the USAF and FWS was
halted due to low numbers. The population in this unit may have temporarily dispersed into adjacent ranges due to
poor range conditions caused by extreme drought over several years. The single tag for this unit was returned before
the hunt and was not reissued. This hunt has been eliminated in this unit until populations rebound, and the
Department will conduct thorough surveys of this unit in the coming years.

Reporting Biologist:

Wood

Subspecies:		Des	-					283-284			2023
Survey and Year	Survey		Survey 4 Ra	•	Survey 6 Ra	6+ yr old ms		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2019-2020	7	7	6	3	6	6		220	134	11	7
2021-2022	8	8	6	6	ę	9		120	73	7	3
2022-2023		-		_		-		90	58	5	4
Trend	u	р	sta	ble	u	р		down	down	down	up
lunt Result	s and Tra	nslocatio	on Remo	val				•			
Year	Rams Ha		Averaç Harveste	je Age	% Ram Suce			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	4	4	5.	3	80)%		11			
2021	4	4	6	5	80)%		9.4			
2022	4	4	7.5	25	10	0%		9.75			
Trend	sta	ble	u	р	u	р		stable			
					Ew	/es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	iotas				Res	NR	Archery	Early	Late	Early	Late
2020								4		1	
2021								4		1	
2022								3		1	
Trend								down		stable	
Ram Quota	Recomm	endation	s					Resident	t	Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
4	100%	0%	80%	20%	100%	283-284		3		1	
	Archery				0%						
Ewe Remov	al Recom	mondati	one								
Total Ewe									2022%	D T	
Objective	# Re	auce	% Re	auce	Nonle	ethai	I	Harvest	Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

800

Aerial surveys were not conducted in this unit in 2022. This population has been impacted by disease issues and has been slow to recover, especially in recent years due to extreme drought. Hunter success was good, although effort remains high. The Department recommends no change in quota for 2023.

Reporting Biologist:

Wood

Supervisor: E

Bennett

Subspecies:		Des	sert			Unit	Group:	286		Year	2023
Survey and I	Model Re	sults									
Year	Survey	y Total	Survey 4 Ra	-	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2019-2020	14	48	1	1	8	3		170	99	5	5
2021-2022	5	5	ę)	3	3		100	59	6	3
2022-2023	3	4		2	2	2		90	52	6	3
Trend	do	wn	do	wn	do	wn		down	stable	stable	stable
Hunt Results	s and Tra	nslocatio	on Remo	val							
Year	Rams H		Averaç Harveste	je Age	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	Ę	5	6	.6	100	0%		7.0			
2021		1	6	3	100	100%		5			
2022		1	-	7	50	%		1			
Trend	sta	ble	sta	ble	do	wn		down			
					Ew	/es		Ram Resid	ent	Ram No	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2020								5			
2021								5			
2022								1			
Trend								down			
							1				
Ram Quota I	Recomm	endation	S			r		Resident	t	Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
2	100%	0%	100%	0%	100%	286	,	2		0	
	Archery				0%						
Ewe Remova	al Pocom	mondati	one			-					
Total Ewe									2022%		
Objective	# Re	duce	% Re	duce	Nonle	ethal		Harvest	Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

225

In 2021, survey results prompted the Department to inform the five tagholders for this unit that observed populations were much lower than expected, and one tagholder harvested. The quota for the following year was lowered to 2. Survey observations were slightly lower this year though population trends remain similar, therefore the Department recommends no change to the quota this year.

Reporting Biologist:

Wood

Supervisor: E

Bennett

Subspecies:	Calif	ornia		Unit	Group:	012, 014		Year	2023
Survey and I	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2020-2021	167	11	1	0		230	156	5	7
2021-2022	61	4	1	l		175	116	5	5
2022-2023	58	9	6	6		135	89	5	3
Trend	down	stable	dov	wn		down	down	stable	down
	s and Translocatio	on Removal Average Age	% Ram	Hunter		Avg Days	Ewes	% Ewe	Ewes
Year	Rams Harvested	Harvested Rams	Suco			Hunted	Harvested	Hunter Success	Nonletha Removal
2020	6	6.33	86	%		13	n/a	n/a	n/a
2021	4	6.5	67	%		6.75	n/a	n/a	n/a
2022	3	6.33	75	%		8.33	n/a	n/a	n/a
Trend	down	stable	sta	ble		stable			
			Ew	es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	otas		Res	NR	Archery	Early	Late	Early	Late
2020			0	0	0	6	0	1	0
2021			0	0	0	5	0	1	0
2022			0	0	0	3	0	1	0
Trend						down			

Ram Quota	Recomm	endation	S					Resident		Nonresident	
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
1	100%	0%	100%	0%	100%	012, 014		1		0	
	Archery	0%			0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300

This year, hunt units 012 and 014 were combined due to collar data showing sheep movement between the two hunt units. As a result, the data in the tables above is a combination of the past three years of sheep metrics from unit 012 and 014. The sheep in 012 and 014 have experienced population decline as a result of drought, predation, low quality forage, and feral horses exceeding appropriate management levels. With the contraction in population size and this being the first year the hunt units are combined, NDOW recommends being conservative on the tag quota for this unit grouping.

Reporting Biologist:

Jon Ewanyk

Supervisor: Cooper Munson

Subspecies:		Califo	ornia			Unit	Group:	022		Year	2023
Survey and I	Model Res	ults									
Year	Survey T	otal	Survey 4 Ra	-	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2019-2020	53		7	7	4	1		95	59	3	3
2021-2022	58		6	6	6	6		80	58	3	3
2022-2023	31		1	1	7	7		80	53	4	2
Trend	dowr	า	u	р	u	р		stable	stable	up	down
Hunt Results Year	s and Trans Rams Har		on Remo Averaç Harveste	ge Age	% Ram Suce			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	2		7.	.5	67	'%		11.5	n/a	n/a	n/a
2021	2		7.	.5	100	0%		9	n/a	n/a	n/a
2022	1		8	3	50	1%		8	n/a	n/a	n/a
Trend	dowr	า	sta	ble	do	wn		down			
Previous Qu	otas				Ew Res	/es NR	Archery	Ram Reside Early	ent Late	Ram Nor Early	nresident Late
2020	0103				0	0	0	3	0		0
2021					0	0	0	2	0	0	0
2022					0	0	0	2	0	0	0
Trend								stable			
Ram Quota I	Recommen	dation	S					Resident		Nonre	sident
Total Ram Quota	,	_ate %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
2	100%	0%	100%	0%	100%	022		2		0	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

110

The sheep population in 022 is stable, which has been reflected in the past few years of hunter success, and age class of harvested rams. The sheep hunt in this unit grouping is limited by access issues in the northern end of the Virginia Mountains, where the sheep spend most of their time during the season. Due to hunters having access issues, NDOW recommends keeping the quota at 2 tags for this unit grouping.

Reporting Biologist:

Jon Ewanyk

Supervisor: Cooper Munson

Subspecies:		Califo	ornia			Unit	Group:	031		Year	2023
Survey and	Model Res	sults									
Year	Survey	Total	Survey 4 Ra	l-5 yr old ms	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1⊦ Rams
2017-2018	93	5	-	7	ç)		137	74	9	5
2020-2021	70)	1	1	5	5		150	83	6	5
2022-2023	75	;	9	9	3	3		146	84	6	5
Trend	up)	do	wn	dov	wn					
		- le seti			•						
Hunt Result	s and Trar	isiocatio	on Remo	vai						% Ewe	Ewes
Year	Rams Ha	rvested	Averaç Harveste	ge Age ed Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Nonletha Remova
2017	4		7	.5	100)%		7.5	0		
2020	5		7	.4	83	%		7	0		8
2022	6		5	.7	100	0%		6	0		
Trend	stab	le	do	wn	sta	ble					
					Ew	es		Ram Reside	ent	Ram Nor	nresident
Previous Qu	otas				Res	NR	Archery	Early	Late	Early	Late
2017								4			
2020								6			
2022								6			
Trend								stable			
							_				
Ram Quota I	Recomme	ndation	S					Resident	t	Nonre	sident
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
5	100%	0%	100%	0%	100%	031		5		0	

Ewe Removal Recommendations

Archery

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

0%

Quota and Population Objective Rationale

Population Objective:

300

The population in the Double H Mountains continues to do well and has not been affected by the disease event that took place in the Montana Mountains. Aerial surveys have indicated that there is a good age representation with our ram segment that should sustain this herd in the coming years. This year saw a slight drop with the older age class rams due to previouse year's harvest therefore resulting in a tag drop in this unit. This year marked one of the lowest lamb rates which may be due to the lower survey number. This herd has remained relatively constant the last couple of years with slight increases.

Reporting Biologist:

Partee

Supervisor: N

Munson

Subspecies:	Calif	ornia	-	Unit	Group:	033, 032		Year	2023
Survey and	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Ra	•		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1+ Rams
2019-2020	66	9	4	1		120	74	4	4
2021-2022	36	2	2	2		115	70	4	3
2022-2023	72	9	4	1		115	63	4	3
Trend	up	up	u	р		stable	stable	stable	stable
Hunt Result	s and Translocati	on Removal	-						
Year	Rams Harvested	Average Age Harvested Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	1	6	33	%		11	n/a	n/a	n/a
2021	1	2	33	%		13.3	n/a	n/a	n/a
2022	1	5	50	%		8.5	n/a	n/a	n/a
Trend	stable	stable	u	р		down			
			Ew	es		Ram Resid	ent	Ram No	nresident
Previous Qu	iotas		Res	NR	Archery	Early	Late	Early	Late
2020			0	0	0	3	0	0	0
2021			0	0	0	3	0	0	0
2022			0	0	0	2	0	0	0
Trend						down			
Ram Quota I	Recommendation	s	-			Resident	t	Nonre	sident
Total Ram Quota	Early % Late %	Res % NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late

Ewe Removal Recommendations

100%

Archery

2

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

100%

0%

033, 032

Quota and Population Objective Rationale

0%

0%

100%

0%

Population Objective:

2

160

0

The sheep population on the Sheldon seems to be stable despite drought and predation issues. Lamb ratios on the Sheldon improved this year, and the number of sheep detected on survey was double what was observed the year prior. Given that hunters have struggled to find mature rams during the past few hunt seasons, NDOW recommends being conservative with the number of tags in this unit and keeping the quota at 2.

Reporting Biologist:

Jon Ewanyk

Supervisor: Cooper Munson

Subspecies:		Calif	ornia			Unit	Group:	032		Year	2023
Survey and	Model Re	sults									
Year	Survey	[,] Total	Survey 4 Rai	-	Survey 6 Rai			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2017-2018	11	5	1	9	1	6		358	207	14	12
2020-2021	70	6	1	1	4	1		236	136	12	8
2022-2023	14	8	1	1	5	5		253	150	18	8
Trend	u	р	sta	ble	sta	ble					
lunt Result	s and Tra	nslocati	on Remo	val							
Year	Rams Ha	arvested	Averag Harveste		% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remova
2017	1:	5	6.	6	100	0%		5.7	0		
2020	1(0	6	3	84.	.00		15	0		10
2022	1(0	6	6	100)%		9	0		
Trend	stal	ble	sta	ble	sta	ble					
					Ew			Ram Resid	ant	Ram Nor	aresident
Previous Qu	otas				Res	NR	Archery		Late	Early	Late
2017	otuo				1100		7 tronory	12	Luto	2	Luio
2020								11		1	
2022								9		1	
Trend								up			
								чр			
Ram Quota I	Recomme	endation	S					Resident		Nonre	sident
Total Ram	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
Quota	100%	0%	90%	10%	100%	032		5		1	
Quota 6					0%						
6	Archery										
6 Ewe Remova	Archery	mendati	ons						2022%		
	Archery		ons % Re	duce	Nonle	ethal		Harvest	2022% Succ	Res Tags	NR Ta

Quota and Population Objective Rationale

Population Objective:

400

Modeled age classes remain strong across the board with this herd, and ram harvest should be expected to good this year. We are seeing a slight decline in the quality of rams harvested; however, the age class of harvested rams remain strong. During survey the number of animals surveyed was much higher than the five year average. Fewer rams were surveyed in the older age class leading to a slight drop in quotas this year.

Reporting Biologist:

Partee

Supervisor:

Munson

Subspecies:	Ca	lifornia		-	Unit	Group:	034		Year	2023
Survey and	Model Results									
Year	Survey Total	-	4-5 yr old ams	Survey 6 Ra			Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2017-2018	166		2	4	1		208	127	13	7
2020-2021	90		6	1	1		238	140	11	8
2022-2023	57		2	1	1		237	143	10	7
Trend	down	de	own	sta	ble					
lunt Result	s and Transloc	ation Remo	oval				1		~ -	
Year	Rams Harveste		ige Age ted Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2017	8		8	89	1%		10			
2020	7		8	64	%		11			
2022	9		6	100	0%		8			
Trend	stable	st	able	u	р					
				Ew	/es		Ram Resid	ent	Ram Nor	nresident
Previous Qu	iotas			Res	NR	Archery	Early	Late	Early	Late
2017							8		1	
2020							10		1	
2022							8		1	
Trend							up			
Bom Quete	Recommendat	lana				I	Desident		l Nama	a i d a mt
Total Ram				% Unit			Resident	L	Nonre	SIGELI
	Early % Late	% Res %	NR %	Split	Unit(s)	Archery	Early	Late	Early	Late
Quota										
Quota 6	<mark>100%</mark> 0%	90%	10%	100%	034		5		1	

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

300+

During survey the animals classified was much lower than the five-year average. This popultion may be slightly over estimated which should be corrected in the coming years. We are continuing to show good age distribution for both males and females with a slight drop in the older age class. Harvest over the last couple of years have shown a good age structure with the quality of the rams dipping slightly. Due to the fewer older age class rams seen during survey there will be a slight reduction in tags this year.

Reporting Biologist:

Partee

Supervisor: Munson

el Results urvey Total 88 106 165 up	Survey 4-5 yr old Rams 7 8 23	Survey 6 Rar 0	ms		Pop Estimate	1+ Ewes Population	50% 6+ yr	8% of 1+
88 106 165	Rams 7 8	Rar 0	ms		•			-
106 165	8	-)			Fopulation	old Rams	Rams
165	_	0	,		203	121	6	7
	23	3	3		239	141	9	8
up		9)		260	154	11	8
	up	u	р					
ns Harvested	Harvested Rams	Succ	cess		Avg Days Hunted	Ewes Harvested	Hunter Success	Ewes Nonleth Remov
ns Harvested					•••			Nonleth
4	6.75				6.75			
-					-			
	-				26			
up	stable	stal	ble					L
		Ew	es	F	Ram Reside	ent	Ram Nor	hresiden
		Res	NR	Archery	Early	Late	Early	Late
					3		1	
					10		1	
					8		1	
					up			
	ns Harvested	Harvested Rams 4 6.75 9 8 10 7	Average Age Harvested Rams % Ram Succ 4 6.75 100 9 8 82 10 7 100 up stable sta	Average Age Harvested Rams % Ram Hunter Success 4 6.75 100% 9 8 82% 10 7 100% up stable stable Ewes	Average Age Harvested Rams % Ram Hunter Success 4 6.75 100% 9 8 82% 10 7 100% up stable stable	Average Age Harvested Rams % Ram Hunter Success Avg Days Hunted 4 6.75 100% 6.75 9 8 82% 4 10 7 100% 26 up stable 5 5 Ewes Ram Reside Res NR Archery 10 10 10 10 up stable 10 10 10 10 10 3 10 10 10 3	Average Age Harvested Rams% Ram Hunter SuccessAvg Days HuntedEwes Harvested46.75100%6.759882%4107100%26upstable11Ewes ResRam Resident ArcheryEarly 10Late107100%26upstable11Ewes ResRam Resident ArcheryArcheryEarlyLate10Image: Second Colspan="4">Second Colspan="4"Second Colspan="4"Second Colspan="4"Second Co	Average Age Harvested Rams% Ram Hunter SuccessAvg Days HuntedEwes Harvested% Ewe Hunter Success46.75100%6.75-9882%4107100%26upstablestableEwes ResRam Resident ArcheryRam Nor Early

				-								0.00.00
	Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
		-					. ,				-	
	7	100%	0%	90%	10%	100%	035		6		1	
-		Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

400

This unit continues to do extremely well over the last few years. There has been a substantial increase in the number of animals surveyed the last couple of years which continues to increase. Animals are starting to distribute themselves in areas that we have not seen. Ram ratios are right in line of what we saw during the last survey with the lamb ratio increasing slightly. During survey we saw a strong age class of rams in the population which will benefit this unit for the next few years.

Reporting Biologist:

Partee

Supervisor: Munson

Subspecies:	Califo	ornia		Unit	Group:	051		Year	2023
Survey and	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Ra	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 Rams
2017-2018	143	14	7	7		170	112	6	5
2020-2021	134	21	6	3		125	78	9	5
2022-2023	105	7	3	3		95	60	4	3
Trend	down	down	do	wn		down	down	down	down
Year	Rams Harvested	Average Age Harvested Rams	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remov
Year	Rams Harvested					•••			Nonleth
2017	5	6.8		0%		14.2			
2020	2	8	67			5			
2022	2	7	-	0%		10			
Trend	down	stable	sta	ble		stable			
			Ew	/es		Ram Resid	ent	Ram Nor	nresiden
revious Qu	otas		Res	NR	Archery	Early	Late	Early	Late
2017						4			
2020						3			
2022						2			
Trend						stable			
	Recommendation	S				Resident	t	Nonre	sident
Total Ram	Early % Late %		% Unit	L Init(c)	Archam	Forby	Lato	Forly	l ata

		enaation	-					rteeldelli	•		oldolli
Total Ram					% Unit						
Quota	Early %	Late %	Res %	NR %	Split	Unit(s)	Archery	Early	Late	Early	Late
2	100%	0%	100%	0%	100%	051		2		0	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

400

Unit 051 continues to struggle with disease issues resulting in survey numbers to fluctuate. This year had a slightly higher number of sheep classified during survey with an increase in lamb production. Ram ratios in this unit are comparable to what we saw last year during survey. This year is thesecond full year that we started a test and remove project in the Santa Rosa Range to hopefully target those animals that are actively shedding the bacteria. This project will most likely take place every year for the next several years in hopes of removing or slowing the spread of M. Ovi so that this population may eventually increase. With the continued work in the Santa Rosas, tag number should remain relatively conservative.

Reporting Biologist:

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Partee
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Supervisor: Munson

Subspecies:		Calif	ornia		Unit		Group:	068		Year	2023
Survey and	Model Re	sults									
Year	Survey	Total	Survey 4 Ra	-	Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 [.] Rams
2020-2021	10	1	4	1	1			150	69	10	6
2021-2022	11	5	2	0	1;	3		150	75	8	6
2022-2023	0)	()	C)		180	84	11	7
Trend								up	up	up	up
lunt Result	e and Tra	nelocati	on Pomo	val							
Year	Rams Ha		Averaç Harveste	ge Age	% Ram Succ			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonletha Remova
2020	12	2	7.	.2	100)%		5.25	1	100%	14
2021	7	,	7.	.8	100)%		10	0	0%	0
2022	7	,	6.	.7	100)%		3.7	0	0%	0
Trend	stal	ble	do	wn	stal	ble		down	down	down	stable
2020	otas				Res 1	NR	Archery	Ram Reside Early 8	Late	Early 1	Late
2021					0			5		1	
2022					0			5		1	
Trend					stable			stable		stable	
Ram Quota Total Ram					% Unit			Resident			sident
Quota	Early %	Late %	Res %	NR %	Split	Unit(s)	Archery	Early	Late	Early	Late
6	100%	0%	90%	10%	100%	068		5		1	
	Archery				0%						
Ewe Remov	al Recom	mendati	ons								
Total Ewe									2022%		
Objective	# Red	duce	% Re	duce	Nonle	ethal		Harvest	Succ	Res Tags	NR Tage
Quota and	Populati	on Obie	ective Ra	ationale			Popi	ulation Ol	niective:		

The recommended 2023 quota is slightly conservative to account for the specialty tags that have gone into this unit in the past several years, and those that will likely go in this year. This year's tag quota is based on the harvest guideline of 8% of Total rams when including the expected specialty tag interest.

Reporting Biologist:

Hale

Supervisor:

Donham

Subspecies:	Rocky N	lountain		Unit	Group:	102		Year	2023
Survey and I	Model Results								
Year	Survey Total	Survey 4-5 yr old Rams	Survey 6 Ran	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1- Rams
2020-2021	32	5	2			50			
2021-2022	39	4	3			60	35	3	2
2022-2023	36	3	1			65	35	3	2
Trend						up			
		Average Age	% Ram	Hunter		Avg Days	Ewes	% Ewe Hunter	Ewes Nonleth
		Average Age	70 I \alli	riuniei		Avy Days	Ewes	Hunter	Nonleth
Year	Rams Harvested	Harvested Rams	Succ	ess		Hunted	Harvested	Success	Remova
Year 2020	Rams Harvested		Succ	ess		Hunted	Harvested		Remova
	Rams Harvested		Succ	ess		Hunted	Harvested		Remova
2020	Rams Harvested		Succ 100			Hunted 2	Harvested		Remova
2020 2021		Harvested Rams					Harvested		Remova
2020 2021 2022	1	Harvested Rams		%					
2020 2021 2022	1 up	Harvested Rams	100	%	Archery	2 Ram Reside		Success	
2020 2021 2022 Trend	1 up	Harvested Rams	100 Ewe	% es		2 Ram Reside	ent	Success Ram Nor	nresident
2020 2021 2022 Trend	1 up	Harvested Rams	100 Ewe	% es		2 Ram Reside	ent	Success Ram Nor	nresident
2020 2021 2022 Trend Previous Qu 2020	1 up	Harvested Rams	100 Ewe	% es		2 Ram Reside	ent	Success Ram Nor	nresident

Ram Quota Recommendations						Resident			esident		
Total Ram Quota	Early %	Late %	Res %	NR %	% Unit Split	Unit(s)	Archery	Early	Late	Early	Late
1	100%	0%	100%	0%	100%	102		1		0	
	Archery				0%						

Ewe Removal Recommendations

Total Ewe Objective	# Reduce	% Reduce	Nonlethal	Harvest	2022% Succ	Res Tags	NR Tags

Quota and Population Objective Rationale

Population Objective:

:

After 8 years of strong recruitment (>50 lambs:100 ewes) this herd is finally showing meaningful growth. There is a strong age distribution in the ram segment that should allow for continued limited quotas. There were 17 rams classified on 2021-2022 survey, with several known/identifiable rams not being observed. The 2022-2023 survey was less successful locating rams, but conditions were very difficult.

Reporting Biologist:

Roberts

Supervisor:

Donham

ubspecies:	F	Rocky N	lountain		-	Unit	Group:	115		Year	2023
urvey and I	Model Re	sults									
Year	Survey	/ Total	Survey 4 Ra		Survey 6 Rai	-		Pop Estimate	1+ Ewes Population	50% 6+ yr old Rams	8% of 1 Rams
2017-2018	2	0	1		()		40	22	2	1
2020-2021	2	9		3	3	3		60	34	3	2
2022-2023	8	3	()	0)		70	39	3	2
Trend	dov	wn	do	wn	dov	wn		up	up	stable	stable
unt Results	s and Tra	nslocatio	on Remo	val							
Year	Rams Ha		Averag Harveste	je Age	% Ram Suco			Avg Days Hunted	Ewes Harvested	% Ewe Hunter Success	Ewes Nonleth Remova
2017	1	l	Ę	5	100	0%		7			
2020	2	2		3	100	0%		10			
2022	2	2	7	7	100	0%		8			
Trend	sta	ble	u	р	sta	ble		down			
2017 2022								1 2 2			
Trend								stable			
am Quota F Total Ram					% Unit			Resident	:		esident
Quota	Early %	Late %	Res %	NR %	Split	Unit(s)	Archery	Early	Late	Early	Late
1	100%	0%	100%	0%	100%	115		1		0	
	Archery				0%						
we Remova	al Recom	mendatio	ons								
Total Ewe Objective	# Re	duce	% Re	duce	Nonle	ethal		Harvest	2022% Succ	Res Tags	NR Tag
uota and	Populati	on Obje	ective Ra	ationale			Рор	ulation Ol	ojective:		J
Quota and larvest succo Survey efforts	Populati ess has b s resulted	on Obje een 100% in poor s	ective Ra 6 the last ample siz	ationale two year te in 2019	s. The av 9, 2021, a	/erage a	ge of ran . In 2020	ulation Ol ns harvest) a record	ojective: ed in the la	ast two yea	rs 1 a

success and poor surveys, caution is being exercised and only one tag is being recommended for 2023.

Reporting Biologist:

Menghini

Supervisor:

Donham

Mountain Goat Quota Recommendation Form

Subspecies: Mountain Goat	Unit Group:	101	Year 2023
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Survey and Model Results

Year	Survey Total	Survey Adults	Survey Kids	Kids/100 Ads	Pop Estimate
2020-2021	38	34	4	12	50
2021-2022	20	18	2	11	55
2022-2023	22	18	4	22	45
Trend	down	down	down	down	down

Hunt Results and Translocation Removal

Year	Billy Harvest	Billy Avg Age	Nanny Harvest	Nanny Avg Age	Total Harvest	% Hunter Success
2020	1	4.0	0	NA	1	100%
2021	1	7.0	NA	NA	1	100%
2022	1	5.0	NA	NA	1	100%
Trend	stable		stable		stable	stable

Previous Quotas

Year	Resident	Nonresident
2020	1	0
2021	1	0
2022	1	0
Trend	stable	

Any Mountain Goat Quota Recommendations

Total Quota	Res %	NR %	Resident	Nonresident
1	100%	0%	1	0

Quota and Population Objective Rationale

Population Objective:

NA

The 2021-2022 survey was very disappointing in the sample size and the lack of collared animals that were observed. Of the 10 live collared animals, only 2 were classified. Summertime telemetry work showed a high production rate through mid-August, and was very promising in light of the disease issues in this unit since 2009. The 2022-2023 survey was again disappointing, with only 2 of 5 collared goats being observed. The silver lining was that 6 yearling goats were observed in the small sample size. The high proportion of yearlings points to a higher 2021-2022 kid ratio than the one observed on survey. Based on recent status and trend of the Unit 101 population, the quota recommendation reflects status quo.

Reporting Biologist:RobertsSupervisor:Donham

Mountain Goat Quota Recommendation Form

Subspecies: Mountain Goat	Unit Group:	102	Year 2023
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Survey and Model Results

Year	Survey Total	Survey Adults	Survey Kids	Kids/100 Ads	Pop Estimate
2020-2021	133	100	33	33	200
2021-2022	171	128	43	34	240
2022-2023	108	89	19	21	240
Trend	down	down	down	down	stable

Hunt Results and Translocation Removal

Year	Billy Harvest	Billy Avg Age	Nanny Harvest	Nanny Avg Age	Total Harvest	% Hunter Success
2020	3	6.3	3	4.3	6	86%
2021	2	4.0	1	4.0	3	43%
2022	7	4.0	3	7.3	10	83%
Trend	up	stable	up		up	

Previous Quotas

Year	Resident	Nonresident
2020	7	0
2021	7	0
2022	12	0
Trend	stable	up

Any Mountain Goat Quota Recommendation

Total Quota	Res %	NR %	Resident	Nonresident
12	90%	10%	11	1

Quota and Population Objective Rationale

Population Objective:

NA

The 2022-2023 survey represents a below average sample for this unit. Poor conditions made for a difficult survey, and abbreviated effort. After 2 years of exceptional recruitment rates, the kid ratio moderated in 2022 and generated a similar estimate to 2022. There were 2 hunters in 2022 that were unsuccessful, and the heavy snow loads experienced at the end of the season may have been a contributing factor. The 2023 total quota is proposed to be the same as previous season, but that includes one tag being allocated to the nonresident pool, and one tag being allocated to the Silver State Tag Program.

Reporting Biologist:	Roberts	Supervisor:	Donham

Mountain Goat Quota Recommendation Form

Subspecies: Mountain Goat	Unit Group:	103	Year 2023
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Survey and Model Results

Year	Survey Total	Survey Adults	Survey Kids	Kids/100 Ads	Pop Estimate
2020-2021	21	18	3	17	40
2021-2022	10	9	1	11	45
2022-2023	NA	NA	NA		50
Trend	stable	stable	stable	stable	up

Hunt Results and Translocation Removal

Year	Billy Harvest	Billy Avg Age	Nanny Harvest	Nanny Avg Age	Total Harvest	% Hunter Success
2020	1	4.0	0	NA	1	100%
2021	1	5.0	0	NA	1	100%
2022	0	NA	0	NA	0	0%
Trend	down		stable		down	

Previous Quotas

Year	Resident	Nonresident
2020	1	0
2021	1	0
2022	1	0
Trend	stable	stable

Any Mountain Goat Quota Recommendations

Total Quota	Res %	NR %	Resident	Nonresident
1	100%	0%	1	0

Quota and Population Objective Rationale

Population Objective:

NA

The 2022-2023 survey season was plagued by variable winds and difficult snow conditions, and resulted the Unit 103 survey being cut from the schedule. Summertime observations showed fair production of kids, and average adult group size. There was not any correspondence with the 2022 hunter, but the lack of harvest is abnormal and will be monitored. This herd continues to maintain and the quota recommendation remains the same as in 2022.

Reporting Biologist:RobertsSupervisor:Donham