# **2022 MDEP Project Proposals**

Mule Deer Investigation Projects

Project Name	Project Type	Project Description	Subcommittee	Unit Group	Amount Requested?	Score	Regional Priority	Statewide Priority	
Mgt. Area 1 Mule Deer Collaring	Capture	Mortality/Habitat Use Invest.	Washoe	011-015	\$0	74.8	WR1	6	1
Area 8 Tooth Collection & Age Analysis	Harvest Study	Tooth Age Analysis	Elko Area 7, 8, 9	081	\$3,000	32.6	ER5	5	1
Mgt. Area 12 Mule Deer Collaring	Capture	Mortality/Habitat Use Invest.	White Pine	MA 12	\$96,000	74.3	ER1	2	
Mgt. Area 13 Mule Deer Collaring	Capture	Mortality/Habitat Use Invest.	Area 13	MA 13	\$100,000	65	ER2	3	
Mgt. Area 22 Mule Deer Collaring	Capture	Mortality/Habitat Use Invest.	Lincoln	221-223	\$78,080	65	SR2	1	(
Spring Mtn Camera Project	Investigation	Trail Camera Study	Clark	MA 26, 27, & 28	\$8,000	69	SR1	4	

**\$285,080** Requested from NDOW P/R funds for FY 2024

### Habitat Projects

Project Name	Project Type	Project Description	Subcommittee	Unit Group	Amount Requested?	Score	Regional Priority	Statewide Priority	P
Wildcat Fire Bitterbrush Planting	Restoration/Rehab.	Planting	Elko Area 7, 8, 9	071-079, 091	\$117,000	85.4	ER1	1	F
Corta Fire Seedling Planting Phase II	Restoration/Rehab.	Planting	Elko Area 10	102-103	\$75,000	74.4	ER2	2	H
Izzenhood WMA Winter Range Habitat Restoration	Restoration/Rehab.	Herbicide and Planting	Elko Area 6	068	\$125,000	66	ER3	3	H
Granite Range Overspray Projects	Restoration/Rehab.	Herbicide and Seeding	Washoe	014	\$200,000	67.4	WR1	4	H
Spring Protection	Water Dev./Spring Protection	Spring Protection	Nye-Esmeralda	MA 17, 21	N/A	66	SR1	5	H
Current to Upper Perish Habitat Enhancement:	Restoration/Rehab.	PJ Removal	Area 13	MA 13	\$250,000	70.3	ER4	6	H
Bald Mtn Pinyon-Juniper Thinning	Restoration/Rehab.	PJ Removal	Lander	151-156	\$425,000	66.3	ER5	7	H
Spring Restoration in Clark County	Water Dev./Spring Protection	Spring Protection	Clark	MA 26, 27, & 28	\$100,000	72	SR2	8	H
Granite Range Water Dev.s	Water Dev./Spring Protection	Guzzler	Washoe	014	\$43,000	68.8	WR2	9	۷
Milk Ranch Guzzler	Water Dev./Spring Protection	Guzzler	Lincoln	222	\$45,000	69	SR3	10	H
Fire Creek Cheatgrass Treatment	Restoration/Rehab.	Herbicide and seeding	Lander	151-156	\$390,000	54.3	ER6	11	H
Vinini and Henderson Creek PJ Removal	Restoration/Rehab.	PJ Removal	Area 14	MA 14	\$150,000	69	ER7	12	H
Private Land Snowstorm and Imm. Kochia Seeding	Restoration/Rehab.	Seeding	Elko Area 6	065	\$71,000	63.8	ER8	13	H
Robert's Creek Corridor Pinyon-Juniper Removal	Restoration/Rehab.	PJ Removal	Area 14	MA 14	\$150,000	71	ER9	14	H
Area 7 Fence Removal in Migration Corridor	Fence	Fence Removal	Elko Area 7, 8, 9	071-079, 091	\$25,000	66.1	ER10	15	R
Toe Jam Mule Deer Corridor Fence Modification	Fence	Fence Modification	Elko Area 6	067	\$144,500	66.4	ER11	16	H
Queen Spring Pinyon-Juniper Hand Thinning	Restoration/Rehab.	PJ Removal	White Pine	111-113	\$130,000	64.6	ER12	17	H
East Whistler Mtn Pinyon-Juniper Removal	Restoration/Rehab.	PJ Removal/Spring Enhancment	Area 14	MA 14	\$80,000	71	ER13	18	H
Elephant Head Aspen Exclosure Repair	Fence Or Spring Protection?	Spring Protection	Lander	151-156	\$231,250	52	ER14	19	H
Northern Golden Gate Range Guzzler Series	Water Dev./Spring Protection	Guzzler	Area 13	MA 13	\$120,000	64.8	ER15	20	۷
Spring Mtns Mullein Removal	Restoration/Rehab.	Invasive Species Removal	Clark	MA 26, 27, & 28	\$25,000	48	SR4	21	H
Little Fish Lake Valley Pinyon-Juniper Treatment	Restoration/Rehab.	PJ Removal	Nye-Esmeralda	162-163	\$150,000	65.4	SR5	22	H

\$3,046,750

\$2,126,750

#### Comments

NGO's and NDOW budget will be used for this project Elko NBU commitment

Modified \$\$ amount from original proposal (Modified) \$80K donations from NGO's committed.

Potential Fund Source	
Heritage, NDOW Fire Rehab funds, FS, SO3362, NGO	
Heritage, W-24 Restoration Grant?	
Heritage, WSFR Grant?	
Heritage, W-24 Restoration Grant?, BLM AA?	
Heritage, Water Dev. Grant, BLMAA?	
Heritage, BLM AA?	
Heritage, BLM AA?	
Heritage, Water Dev. Grant, BLMAA?	
Water Dev. Grant, volunteers	
Heritage, Water Dev. Grant, BLMAA?	
Heritage, W-24 Restoration Grant??, BLM AA?	40% line
Heritage, Eureka CD, NRCS, BLM AA?	
Heritage	
Heritage, Eureka CD, NRCS, BLM AA?	
RMEF Volunteers	
Heritage	
Heritage	
Heritage, Eureka CD, NRCS, BLM AA?	
Heritage, BLM AA?	
Water Dev. Grant, volunteers	
Heritage, HCF, BLMAA?	

### Habitat Investigation Projects on Hold

Project Name	Project Type	Project Description	Subcommittee	Unit Group	Fiscal Year 2023 Amount Requested?	Score	Regional Priority	Statewide Priority	Ρ
Wild Horse Impacts on Mule Deer	Investigation		White Pine	MA 11 / 12	N/A	78.9	ER 4		Γ
Triple B HMA Remote Sensing	Investigation		Elko Area 10	101-109	\$191,000	69.4	ER 3		В

### **Predator Projects**

Project Name	Project Type	Project Description	Subcommittee	Unit Group	Fiscal Year 2023 Amount Requested?	Score		Statewide Priority	F
Coyote Removal During Fawning Period	Project 38	Coyote Removal	Pershing	043-046	\$40,000	N/A	WR 3		Ş
Antelope Range Mtn Lion Removal	Project 37	Lion Removal	White Pine	111-113	\$40,000	N/A	ER		Ş
Cherry Creek Range Mtn Lion Removal	Project 37	Lion Removal	White Pine	121	\$40,000	N/A	ER		Ş
Fawning Ground Coyote Removal	Project 38	Coyote Removal	Lincoln	231	\$40,000	N/A	SR		ç

\$120,000

(Pulled from Consideration in 2022)

081 Crucial Winter Range Bitterbrush Planting		Elko Area 7-8-9	081	\$26,000	78.4
					·

### Potential Fund Source

BLM WH&B Proposal?

### Potential Fund Source

\$3 Predator Fee

\$3 Predator Fee

\$3 Predator Fee

\$3 Predator Fee

Estimated Funding Available: \$120,000

Non-Habitat Project Proposal Form								
MDEP Team(s) Submitting Proposal: <i>Humboldt-Pershing</i> Hunt Unit Group: 043-046								
Project Title: Unit 043 & 044 Coyote Removal during fawning period								
1. Limiting Factor Rank Score: 5	Needs Assessn	nent Strategy:	Predation, (	Coyote & M	ltn. Lion	removal		
2. Justification:	pulation Trend 3-yr a	vg low fawn ra	itios 🔳	3-yr av	g low buck	ratio 🗌		
3-yr avg low harvest numbers 🗆	3-yr avg low harvest numbers 🗌 Disease detected 🗋 Anecdotal reports 🗆							
3. Body performing work:	Wildlife S	ervices 🔳		Priv	ate contract	or 🗇		
	NDOW-Wildlife Health 🗆			Other				
4. Predator Plan Project Category:	Implementation	Experimenta	I Management □	Experimen	tation 🗌	Data Gathering 🗆		
5. Type of Project:	Lethal 📕			Non-Let	hal 🗆			
Capture & test 🗆	C	ollaring effort			Other 🗌			
6. Level of Monitoring:	Rigorous 🗆		Intermediate 🗆	9	Standard 🗆			
7. Project Duration:	one year 🗔	two y	ears 🗆	three ye	ars 📕	4+ 🗆		
8. Annual Cost: Under \$10,00	0 🗆 \$10 - \$2	25,000 🗆	\$25 - \$50	,000 🔳	\$50,	.000+ 🗆		
9. Funding Source:	Heritage NGO 🗆	Predator Fund 🔳		Wildlife Services 🗆	Other 🗆	None 🗆		
10. Is funding source eligible for matching funds?	Yes 🗆			No 🗆				
11. Will this project benefit addit	ional wildlife species?		Yes 🔳	Probab	oly 🗆	No 🗆		
Additional Species Benefit: A	VTELOPE							
12. Access for public hunting?			Yes 🔳		Ν	lo 🗆		
13. Are there other predator pro	jects in area?		Yes 🗆		Ν	lo 🗖		
14. Will project expand knowled	ge of the mule deer population	, mule deer ha	abitat, or predato	r-prey relation	ships?			
Yes 🔳		Probably 🗌			No 🗆			
15. Other MDEP teams involved:	Humboldt-Pershing		Humboldt-l	Pershing				
16. Additional projects approved	for this team:							
17. Measure of success?	Upward population trend		3-	yr avg increase	d fawn ratio			
3-yr avg higher observed bu	ck ratio 🗌 3-yr avg increa	ised 4-pts in h	arvest 🗌		Other 🗌			
Project Start Date: 5/1/23		Estimated E	nd Date: 7/31/	25				
Funding Source(s): Estimated Project Cost: \$								
	Oversight	Committee U	Ise Only					
Approv	ed 🗆		No	t Approved 🗆	]			
Priority #								
Route Project to:								
Comments:								

#### Units 043 -046 Mule Deer Coyote Removal Project MDEP Humboldt & Pershing Co.s

### Background

Units 043-046's mule deer population has been declining since 2013. The 2012 published estimate was 3,500 mule deer. The 2022 published estimate is 1,500 mule deer indicating a 57% decline. 1998 to 2020 average mule deer population estimate for this herd is 2,750. Various environmental and predation factors are thought to have contributed to this rapid decline.



- Declining fall and spring survey sample sizes. Fall 2012-2018 AVG 717 deer, 2017 fall survey showed 569 deer with a post-hunt buck ratio of 23. In 2019, random polygon methodology was used on the fall survey. All units were surveyed. Results totaled 83 deer 25 bucks: 100 does: 25 fawns. Individual units (Unit 043 = 7 deer 20 bucks: 100 does: 20 fawns, Unit 044 = 45 deer 23 bucks: 100 does: 23 fawns, Unit 045 = 21 deer 39 bucks: 100 does: 23 fawns & Unit 046 = 10 deer 17 bucks: 100 does: 50 fawns). Spring 2013-2020 AVG 446 deer, no surveys or poor survey conditions 2016, 2017 & 2018. 2019 spring sample size was 449 deer with excellent survey conditions. 2020 spring survey sample size 289 deer 26 fawns: 100 does and smallest sample size since 1995. Survey conditions were considered excellent.
- Declining spring fawn ratios; below maintenance 2013-2021
  - 2013 = 781 deer = 21 fawns: 100 adults
  - 2014 = 718 deer = 22 fawns: 100 adults
  - 2015 = No Survey
  - 2016 = poor surveys conditions incomplete survey
  - 2017 = poor survey conditions incomplete survey
  - 2018 = 569 deer = 30 fawns: 100 adults
  - 2019 = 449 deer = 32 fawns: 100 adults
  - 2020 = 289 deer = 26 fawns: 100 adults
  - 2021 = 600 deer = 26 fawns: 100 adults

### 2019-2021 avg is 28 fawns: 100 adults

Average fawns: 100 adults 2013 to 2021 is 26. Possible coyote predation on fawns, poor body condition of does entering winter and poor winter range.

Fall Survey totals & ratios. \* 2019 survey methodology was random polygon all other years were direct search. 2010 = 661 deer, 24 bucks: 100 does: 50 fawns 2011 = No Survey 2012 = 1,201 deer, 44 bucks: does: 32 fawns 2013 = 805 deer, 32 bucks: 100 does: 34 fawns 2014 = No Survey 2015 = No Survey 2016 = 592 deer, 37 bucks: 100 does: 43 fawns 2017 = 569 deer, 23 bucks: 100 does: 39 fawns 2018 = No Survey 2019\* = 83 deer, 25 bucks: 100 does: 25 fawns

Numerous wildfires that occurred in the early 2000s, mostly in the lower elevations that converted brush communities into annual grasslands. Since the declining population trend, a few fires have occurred in the unit group coupled with drought conditions is thought to have continued to hamper mule deer habitat in the lower elevations. The upper elevations of Units 043, 045 & 046 are thought to be in good condition during this timeframe.

#### **Coyote Removal Recommendations**

Recommended Units for coyote removal to include 043 and 044. Coyote removal during fawning timeframe May through July for a duration of 3 years.

Unit 043 Humboldt Range, within the attached polygon with specific attention to the following drainages (canyons): Unionville area (Peru Canyon, Congress Canyon, Straight Canyon both forks & Wilson Canyon), Coyote Canyon, Bloody Canyon, Star Canyon & Santa Clara Canyon all located on the east side of the range.

Unit 044 East Range: within the polygon with specific attention to Inskip and Willow Canyons.

Recommended method for coyote removal to include aerial efforts within polygons and ground efforts in the specific canyons listed above. Request removal of mountain lions if they are encountered while performing coyote removal. Effort for removal during May-July timeframe should be at least once a week aerial/ground depending on what the crew is finding.

During the coyote removal project NDOW will conducted annual aerial spring mule deer surveys in all units within 043, 044 & 046 to obtain spring fawn ratios to determine project success.

During coyote control efforts in Units 043 and Unit 044, Unit 046 would be the untreated group. In the past, these units have all showed similar recruitment rates and could suggest if coyote removal has been effective and if coyote removal in Unit 046 is warranted.

The overall goal is to increase fawn recruitment to a level above maintenance and get this herd's population back to 1998 – 2020 average size of 2,750 mule deer.



Non-Habitat Project Propo	sal Form						
MDEP Team(s) Submitting Pro	oposal: Linco	In		Hunt Unit Gr	oup:	MA 2	23
Project Title: <b>Predator F</b>	Removal in	Priority	Fawning	Grounds			
1. Limiting Factor Rank Score: 4		Needs Assessr	nent Strategy:	Coyote R	emoval		
Downward Po 2. Justification:	pulation Trend	3-yr a	vg low fawn ra	tios 🔳	3-yr a	avg low buck	ratio 🗆
3-yr avg low harvest numbers 🗆	Dis	ease detected			Anecdotal	reports 🔳	
3. Body performing work:		Wildlife S	Services 🔳		Pri	vate contract	tor 🗆
	NDOW-Wildli	fe Health 🗆			Othe	r 🗆	
4. Predator Plan Project Category:	Implementation	n 🗖	Experimental	Management	Experime	ntation $\Box$	Data Gathering □
5. Type of Project:		Lethal 🗖			Non-Le	ethal 🗆	
Capture & test 🗆		C	Collaring effort			Other $\Box$	
6. Level of Monitoring:	Rigorous 🗆			Intermediate	]	Standard 🔳	
7. Project Duration:	one ye	ar 🗆	two ye	ears 🗆	three y	ears 🔳	4+ 🗌
8. Annual Cost: Under \$10,00	0 🗆	\$10 - \$2	25,000 🗆	\$25 - \$5	0,000 🔳	\$50	,000+ 🗌
9. Funding Source:	Heritage Fund □	NGO 🗆	Predator Fund 🔳	NDOW 🗆	Wildlife Services □	Other 🔳	None 🗆
10. Is funding source eligible for matching funds?		Yes 🗆			No 🗖		
11. Will this project benefit addit	ional wildlife spe	ecies?		Yes 🔳	Proba	bly 🗆	No 🗆
Additional Species Benefit:							
12. Access for public hunting?				Yes 🔳		٦	No 🗆
13. Are there other predator proj	jects in area?			Yes 🔳		٢	lo 🗆
14. Will project expand knowledg	ge of the mule de	eer population	, mule deer ha	bitat, or predat	or-prey relation	nships?	
Yes 🔳			Probably $\Box$			No 🗆	
15. Other MDEP teams involved:	Lincoln			Lincoln			
16. Additional projects approved	for this team:	No Proje	ects App	roved			
17. Measure of success?	Upward popula	ition trend 🔳			B-yr avg increas	ed fawn ratio	
3-yr avg higher observed bu	ck ratio 🗆 👘	3-yr avg increa	ased 4-pts in ha	rvest 🗆		Other 🗆	
Project Start Date: 1/1/23			Estimated En	nd Date: 12/3	31/26		
Funding Source(s): <b>Predate</b>	or, MVWU		Estimated Pr	oject Cost: \$	50,000/ye	ear	
		Oversight	Committee Us	se Only			
Approve	ed 🗆			N	ot Approved [	]	
Priority #							
Route Project to:							
Comments:							

## Lincoln County Mule Deer Enhancement Subcommittee Non-Habitat Project Proposal Supplement Predator Removal in Priority Fawning Grounds

The Lincoln County Mule Deer Enhancement Subcommittee (Subcommittee) provides this supplement to the Predator Removal in Priority Fawning Grounds proposal outlined on the Non-Habitat Project Proposal Form. For the three project proposals submitted to the Oversight Committee addressing Management Areas (MAs) in Lincoln County, we prioritized projects based on timing to implementation and the period foreseen for achieving benefits to mule deer and associated wildlife. The *Predator Removal in Priority Fawning Grounds* project is ranked top priority as it will be implemented in Spring 2023 providing immediate benefit to the wildlife resource.

Predator removal would focus on coyotes frequenting priority fawning grounds in MAs 23. Removals will occur in early spring when coyotes are establishing mating pairs and ground conditions are ideal for locating coyotes. Studies indicate coyotes increase energetic demands when rearing young and are more likely to take larger prey such as mule deer fawns (Sacks et al. 1999, Siedler et al. 2014, Till and Knowlton 1983). Among the fawning areas selected, those where habitat improvement projects were previously implemented will be emphasized. Targeting coyotes in fawning areas immediately preceding and during the fawning season has the highest potential to yield desired results (Brown and Conover 2011, Watine and Giuliano 2016). Project duration will be over three to four consecutive years for optimizing benefit to mule deer and other wildlife species.

The Subcommittee will prepare and provide polygons identifying coyote removal areas along with supporting information to NDOW's Predator Staff Biologist for methods and logistics finalization. In doing so, we are open to using any method available necessary for effective coyote removal, including both aerial gunning and on-the-ground trapping. Trapping efforts may not be available and have a higher cost/benefit ratio to consider. If trapping is used, the subcommittee would work closely with the trapper to ensure our objectives are being met. If aerial gunning is used, we will provide the gunning crew with detailed maps of priority areas and ensure efforts take place when conditions are ideal for success. The subcommittee will apply for funding through the Predator Fund. Meadow Valley Wildlife Unlimited has also stated they may have funds available to assist with project funding. We estimate the project will cost between approximately \$50,000 per year for adequate implementation over the projected three years.

Top priority ranking of this project is attributable to several population considerations including mule deer population size, the three-year fawn to adult ratio, and harvest success. Mule deer populations have decreased significantly in MA 23 – population size has declined from a high of 3,500 in 2017 to 2,200 in 2022. The three-year average spring fawn:adult ratios in MA 23 is 22 fawns:100 adults, which is well below the management objective of 30 fawns:adult. Harvest for has also dropped from a high of 253 bucks to 171 in 2021. Due to notable reductions in total population size, fawning ratios, and harvest numbers in MA 23, the

Subcommittee proposes predator removal as an appropriate management tool as part of the overall effort to increase mule deer populations.

### References

- Brown, D.E. and Conover, M.R. (2011). Effects of large-scale removal of coyotes on pronghorn and mule deer productivity and abundance. *The Journal of Wildlife Management*, 75: 876-882. https://doi.org/10.1002/jwmg.126
- Sacks, B. N., Jaeger, M. M., Jennifer C. C. Neale, & McCullough, D. R. (1999). Territoriality and Breeding Status of Coyotes Relative to Sheep Predation. *The Journal of Wildlife Management*, 63(2), 593–605. https://doi.org/10.2307/3802648
- Seidler, R.G., Gese, E.M., & Conner, M.M. (2014). Using sterilization to change predation rates of wild coyotes: A test case involving pronghorn fawns. *Applied Animal Behaviour Science*, 154, 83-92.
- Till, J. A., and Knowlton, F. F. (1983). Efficacy of Denning in Alleviating Coyote Depredations upon Domestic Sheep. *The Journal of Wildlife Management*, 47(4), 1018–1025. https://doi.org/10.2307/3808160
- Watine, L. and Giuliano, W. (2016). Coyote Predation Effects on White-Tailed Deer Fawns. *Natural Resources*, **7**, 628-643. doi: 10.4236/nr.2016.711050.

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Non-Habitat Project Propo	sal Form							
MDEP Team(s) Submitting Pro	oposal: Whit	e Pine Area	11-12	Hunt Unit Gro	oup:	121		
Project Title: Cherry Creek Range Mountain Lion Removal								
1. Limiting Factor Rank Score:       4.1         Needs Assessment Strategy:       Mountain Lion Removal 4.3								
2. Justification:       Downward Population Trend       3-yr avg low fawn ratios       3-yr avg low buck ratio								
3-yr avg low harvest numbers	l D	isease detected			Anecdota	l reports 🗀		
3. Body performing work: Wildlife Services Private contractor								
	NDOW-Wild	llifeHealth 🗆			Othe	er 🗆		
4. Predator Plan Project Category:	Implementati	on 🔳	Experimen	tal Management	Experime	entation 🗆	Data Gathering □	
5. Type of Project:		Lethal 🔳			Non-L	ethal 🗆		
Capture & test 🗆	]	C	Collaring effo	rt 🗆		Other 🗌		
6. Level of Monitoring:	Rigorous 🗌			Intermediate	1	Standard 🗌		
7. Project Duration:	one y	vear 🗆	two	years 🗆	three	years 🔳	4+ 🗆	
8. Annual Cost: Under \$10,00	00 🗆	\$10 - \$2	25,000 🔳	\$25 - \$50	0,000 🗆	\$50,	000+ 🗆	
9. Funding Source:	Heritage	NGO 🗆	Predator		Wildlife Services 🗆	Other 🗌	None 🗆	
10. Is funding source eligible for matching funds?		Yes 🗆	, and	No 📕				
11. Will this project benefit addit	tional wildlife s	pecies?		Yes 📕	Proba	ably 🗌	No 🗆	
Additional Species Benefit:								
12. Access for public hunting?			Ye	es 🔳	No			
13. Are there other predator pro	jects in area?	١	∕es □	No 🔳				
14. Will project expand knowled	ge of the mule	deer population	, mule deer i	habitat, or predate	or-prey relatio	onships?		
Yes 🗆			Probably			No 🗀		
15. Other MDEP teams involved:	White Pir	ne Area 11-	12	White Pine	Area 11-1	12		
16. Additional projects approved	I for this team:	None						
17. Measure of success?	Upward popu	lation trend 🔳		3	-yr avg increa	sed fawn ratio		
3-yr avg higher observed bu	ick ratio 🔳	3-yr avg increa	ased 4-pts in	harvest 🛛		Other 🔳		
Project Start Date: 12/1/23			Estimated	End Date: 3/31	/26			
Funding Source(s): <b>Predat</b>	or Fund		Estimated	Project Cost: \$	\$75,000			
Oversiaht Committee Use Only								
Approved  Not Approved								
Priority #								
Route Project to:								
Commenter								

Comments: See Attached.

### **Cherry Creek Range Mountain Lion Removal**

The north end of the Cherry Creek Range has typically had lower mule deer density than southern portions of Hunt Unit 121. In recent years, mule deer density has drastically declined in this portion of the unit. In the fall of 2016, NDOW surveyed 150 mule deer on post-season surveys from the McDermid Creek area north. In 2020, NDOW surveyed 76 mule deer in the same area. Survey conditions were similar, except slightly better snow cover in 2016. Survey effort and coverage was far better in 2020 with 2 hours and 47 minutes being expended on survey compared to 1 hour and 12 minutes in 2016. Increased survey effort and fewer observed deer is evidence of a declining population. The decline in mule deer population is primarily drought related. However, with the current low mule deer numbers, mountain lions may be suppressing this population. Due to the supplemental prey sources of feral horses and domestic sheep in this area mountain lion populations may not have mimicked the mule deer decline. Removing 3-5 mountain lions per year for three years will provide relief to mule deer and allow for faster recovery of mule deer when and if drought and habitat conditions improve. Removal would be targeted on the areas north of McDermid Creek and Snow Creek. After three years of mountain lion removal, this project would be reevaluated to determine success and/or continuation of the project. Success criteria for this project may include an assessment of drought and habitat conditions over the timeframe, change in mule deer numbers, and change in mountain lion demographics (sex and age of removed mountain lions).

MDEP Team(s) Submitting Proposal; White Pine Area 11-12       Hunt Unit Group:       111-113         Project Title:       Antelope Range Mountain Lion Removal         1. Uniting Factor Rank Score:       4.1       Needs Assessment Strategy:       Mountain Lion Removal 4.3         2. Justification:       Downward Population Trend       3-yr avg low fawn ratios       3-yr avg low buck ratio         3-yr avg low harvest numbers       Disease detected       Anecdotal reports       3         3. Body performing work:       Wildlife Services       Private contractor       Data         6. Apped of Project       Implementation       Experimental Management       Experimentation       Data         6. Stevel of Monitoring:       Rigorous       Intermediate       Standard       7         7. Project Duration:       one year       two years       three years       4+         8. Annual Cost:       Under \$10,000       \$10 - \$25,000       \$25 - \$50,000       \$50,000+       3         9. Friddator       No       Intermediate Services       Yes       No       No         10. Is funding source eligible for       No       Services       Other       No       1         11. Will this project benefit additional wildlife species?       Yes       No       1       3-yr avg indereased fawn ratio	Non-Habitat Project Propo	sal Form								
Project Title: Antelope Range Mountain Lion Removal   1. Limiting Factor Rank Score: 4.1   Needs Assessment Strategy: Mountain Lion Removal 4.3   2. Justification: Downward Population Trend 3-yr avg low fawn ratios 3-yr avg low buck ratio   3-yr avg low harvest numbers Disease detected Anecdotal reports   3. Body performing work: Wildlife Services Private contractor   . NDOW-Wildlife Health Other Data   4. Predator Plan Project Implementation Experimental Management Experimentation   Capture & test Collaring effort Other Standard   3. Rody Gorons: Rigorous Intermediate Standard   7. Project Duration: one year two years three years 4+   3. Annual Cost: Under \$10,000 \$10-\$25,000 \$25-\$50,000 \$50,000+   3. Funding Source: Heritage No     10. Is funding source eligible for tauthing funds? Yes No    11. Will this project benefit additional wildlife species? Yes No    12. Access for public hunting? Yes No    13. Are there other predator projects in area? Yes No	MDEP Team(s) Submitting Pro	oposal: Whit	e Pine Area	a 11-12	Hunt Unit Gro	oup:	111-1	13		
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4, Predator Plan Project       Implementation       Experimental Management       Experimentation       Gathering         5. Type of Project:       Lethal       Non-Lethal       Gathering         Capture & test       Collaring effort       Other       Gathering         6. Level of Monitoring:       Rigorous       Intermediate       Standard         7. Project Duration:       one year       two years       three years       4+         8. Annual Cost:       Under \$10,000       \$10 - \$25,000       \$25 - \$50,000       \$50,000+         9. Funding Source:       Heritage       NGO       Predator       NDOW       Services       Other       None         10. Is funding source eligible for matching funds?       Yes       No       No       No       Additional Species Benefit:         12. Access for public hunting?       Yes       No       No       Its. Are there other predator projects in area?       Yes       No       Its. Will project expand knowledge of the mule deer population, mule deer habitat, or predator-prey relationships?       Yes       No       Its. Other MDEP teams involved:       White Pine Area 11-12       White Pine Area 11-12       Its. Additional projects approved for this team:       No e         15. Other MDEP teams involved:       White Pine Area 11-12       White Pine Area 11-12       Yria wag higher		NDOW-Wild	llife Health 🗆			Othe	r 🗆			
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11. Will this project benefit additional wildlife species? Yes Probably No   Additional Species Benefit:   12. Access for public hunting? Yes No   I2. Access for public hunting? Yes No   I2. Access for public hunting? Yes No   I3. Are there other predator projects in area? Yes No   I4. Will project expand knowledge of the mule deer population, mule deer habitat, or predator-prey relationships? Yes   Yes Probably   Yes No   I5. Other MDEP teams involved: White Pine Area 11-12 White Pine Area 11-12 If. Additional projects approved for this team: None I7. Measure of success? Upward population trend   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest Other Seroject Start Date: 12/1/23 Estimated End Date: 3/31/26 Fundator Fund Estimated End Date: 3/31/26 If Committee Use Only Oversight Committee Use Only Approved Not Approved Project Cost: Seroject Start Date: Project Start Date: If Committee Use Only If Committee Use On	10. Is funding source eligible for matching funds?	1.1111.01	Yes 🗆		No 🔳					
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12. Access for public hunting? Yes No     13. Are there other predator projects in area? Yes No     14. Will project expand knowledge of the mule deer population, mule deer habitat, or predator-prey relationships?   Yes Probably No     14. Will project expand knowledge of the mule deer population, mule deer habitat, or predator-prey relationships?   Yes Probably No     15. Other MDEP teams involved: White Pine Area 11-12 White Pine Area 11-12   15. Other MDEP teams involved for this team: None     16. Additional projects approved for this team: None     17. Measure of success? Upward population trend 3-yr avg increased fawn ratio   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest Other   2-oroject Start Date: 12/1/23 Estimated End Date:   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest Other   2-oroject Start Date: 12/1/23 Estimated End Date:   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest Other   2-oroject Start Date: 12/1/23 Estimated Project Cost: \$ \$75,000   3-yr avg increased function Oversight Committee Use Only   Approved Not Approved Not Approved	Additional Species Benefit:									
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15. Other MDEP teams involved: White Pine Area 11-12   16. Additional projects approved for this team: None   17. Measure of success? Upward population trend   3-yr avg higher observed buck ratio 3-yr avg increased fawn ratio   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest   Other Other   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest   Other Other   Other Other   Project Start Date: 12/1/23   Estimated End Date: 3/31/26   Estimated Project Cost: \$ \$75,000   Oversight Committee Use Only   Approved Not Approved	Yes 🗆			Probably	I.		No 🗆			
16. Additional projects approved for this team: None   17. Measure of success? Upward population trend 3-yr avg increased fawn ratio   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest □ Other   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest □ Other   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest □ Other   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest □ Other   3-yr avg higher observed buck ratio 3-yr avg increased 4-pts in harvest □ Other   3-yr origit Start Date: 12/1/23 Estimated End Date:   3-yr avg higher observed buck ratio S-yr avg increased 4-pts in harvest □ 0ther   3-yr avg higher observed buck ratio S-yr avg increased 4-pts in harvest □ 0ther   3-yr observed: 12/1/23 Estimated End Date: 3/31/26   5-unding Source(s): Predator Fund Estimated Project Cost: \$ \$75,000   Oversight Committee Use Only   Not Approved □   Not Approved □	15. Other MDEP teams involved:	White Pir	ne Area 11-	12	White Pine	Area 11-1	2			
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Funding Source(s):       Predator Fund       Estimated Project Cost: \$ \$75,000         Oversight Committee Use Only         Approved       Not Approved         Priority #       Priority #	Project Start Date: 12/1/23			Estimated I	End Date: 3/31	/26				
Oversight Committee Use Only       Approved     Not Approved       Priority #	Funding Source(s): <b>Predate</b>	Funding Source(s): <b>Predator Fund</b> Estimated Project Cost: \$ \$75,000								
Approved  Not Approved  Priority #	Oversight Committee Use Only									
Priority #	Approve	Approved  Not Approved								
	Priority #	Priority #								
Route Project to:	Route Project to:									

Comments: See Attached.

### **Antelope Range Mountain Lion Removal**

The Antelope Range, Hunt Unit 112, is a relatively small, isolated mountain range with a declining mule deer population. In 2016, NDOW surveyed 287 mule deer on the east side of the Antelope Range on spring mule deer surveys. In 2022, NDOW surveyed 35 mule deer in the same area, under similar survey conditions and effort expended. The decline in mule deer population in this area is primarily drought related. However, with the current low mule deer numbers, mountain lions may be suppressing this population. Due to the supplemental prey sources of feral horses and domestic sheep in this area mountain lion populations may not have mimicked the mule deer decline. Due to the remote nature of this area, sport harvest on mountain lions is low. Removing 3-5 mountain lions per year for three years will provide relief to mule deer and allow for faster recovery of mule deer when and if drought and habitat conditions improve. Removal would be targeted on the east side of the Antelope Range between Red Rocks and Stockade Spring, where most mule deer winter in this area. After three years of mountain lion removal, this project would be reevaluated to determine success and/or continuation of the project. Success criteria for this project may include an assessment of drought and habitat conditions over the timeframe, change in mule deer numbers, and change in mountain lion demographics (sex and age of removed mountain lions). To further monitor mountain lion numbers in this area, up to 25 trail cameras would be place on isolated water sources throughout the mountain range.