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| Non-Habitat Project Proposal Form | | | |
| MDEP Team(s) Submitting Proposal: Lincoln | | Hunt Unit Group: MA 22, 23, 24 | |
| Project Title: Predator Removal in Priority Fawning Grounds | | | |
| 1. Limiting Factor Rank Score: 4 | | Needs Assessment Strategy: Coyote Removal | |
| 2. Justification: Downward Population Trend <input checked="" type="checkbox"/> 3-yr avg low fawn ratios <input checked="" type="checkbox"/> 3-yr avg low buck ratio <input type="checkbox"/> 3-yr avg low harvest numbers <input checked="" type="checkbox"/> Disease detected <input type="checkbox"/> Anecdotal reports <input checked="" type="checkbox"/> | | | |
| 3. Body performing work: Wildlife Services <input checked="" type="checkbox"/> Private contractor <input type="checkbox"/> NDOW-Wildlife Health <input type="checkbox"/> Other <input type="checkbox"/> | | | |
| 4. Predator Plan Project Category: Implementation <input checked="" type="checkbox"/> Experimental Management <input checked="" type="checkbox"/> Experimentation <input type="checkbox"/> Data Gathering <input type="checkbox"/> | | | |
| 5. Type of Project: Lethal <input checked="" type="checkbox"/> Non-Lethal <input type="checkbox"/> Capture & test <input type="checkbox"/> Collaring effort <input type="checkbox"/> Other <input type="checkbox"/> | | | |
| 6. Level of Monitoring: Rigorous <input type="checkbox"/> Intermediate <input type="checkbox"/> Standard <input checked="" type="checkbox"/> | | | |
| 7. Project Duration: one year <input type="checkbox"/> two years <input type="checkbox"/> three years <input type="checkbox"/> 4+ <input checked="" type="checkbox"/> | | | |
| 8. Annual Cost: Under \$10,000 <input type="checkbox"/> \$10 – \$25,000 <input checked="" type="checkbox"/> \$25 - \$50,000 <input type="checkbox"/> \$50,000+ <input type="checkbox"/> | | | |
| 9. Funding Source: Heritage Fund <input type="checkbox"/> NGO <input type="checkbox"/> Predator Fund <input checked="" type="checkbox"/> NDOW <input type="checkbox"/> Wildlife Services <input type="checkbox"/> Other <input checked="" type="checkbox"/> None <input type="checkbox"/> | | | |
| 10. Is funding source eligible for matching funds? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| 11. Will this project benefit additional wildlife species? Yes <input checked="" type="checkbox"/> Probably <input type="checkbox"/> No <input type="checkbox"/> Additional Species Benefit: | | | |
| 12. Access for public hunting? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | |
| 13. Are there other predator projects in area? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | |
| 14. Will project expand knowledge of the mule deer population, mule deer habitat, or predator-prey relationships? Yes <input checked="" type="checkbox"/> Probably <input type="checkbox"/> No <input type="checkbox"/> | | | |
| 15. Other MDEP teams involved: Lincoln | | Lincoln | |
| 16. Additional projects approved for this team: No Projects Approved | | | |
| 17. Measure of success? Upward population trend <input checked="" type="checkbox"/> 3-yr avg increased fawn ratio <input checked="" type="checkbox"/> 3-yr avg higher observed buck ratio <input type="checkbox"/> 3-yr avg increased 4-pts in harvest <input type="checkbox"/> Other <input type="checkbox"/> | | | |
| Project Start Date: 1/1/22 | | Estimated End Date: 12/31/26 | |
| Funding Source(s): Predator, MVWU | | Estimated Project Cost: \$ 25,000/year | |
| <i>Oversight Committee Use Only</i> | | | |
| Approved <input type="checkbox"/> | | Not Approved <input type="checkbox"/> | |
| Priority # | | | |
| Route Project to: | | | |
| Comments: | | | |

**Lincoln County Mule Deer Enhancement Subcommittee
Non-Habitat Project Proposal Supplement
Predator Removal in Priority Fawning Grounds
October 21, 2021**

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 2022 providing immediate benefit to the wildlife resource.

Predator removal would focus on coyotes frequenting priority fawning grounds in MAs 22, 23, and 24. 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 \$10,000-\$25,000 per year for adequate implementation over the projected three to four 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 in each Management Area: MA 22 - population size estimated to have dropped from a high of 4,800 deer in 2016 to 3,800 in 2021; MA 23 – population size has declined from a high of 3,900 in 2017 to 3,300 in 2021; and in MA 24, the deer population has dropped from 1,300 in 2018 to 1,100 in 2021. The three-year average spring

fawn:adult ratios are 24 fawns:100 adults in MA 22; 24 fawns:100 adults in MA 23; and 29 fawns:100 adults in MA 24. Harvest for MA's 22 and 23 has also dropped from a high of 459 bucks in 2013 to 253 bucks in 2020, and a high of 253 bucks to 195 in 2020, respectively. Due to notable reductions in total population size, fawning ratios, and harvest numbers in MAs 22, 23, and 24, 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.