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Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Caleb McAdoo

Organization/Agency: Nevada Dept. of Wildlife

Date: 01-08-2020

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State: Nevada

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NDOW Monitor (if the project would be managed by someone other than a NDOW employee):

Caleb McAdoo

PROJECT INFORMATION

Project Title: Area 10 mule deer Migration Corridor Habitat Enhancement

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY21

Project Location: Elko and White Pine Counties

Amount of Funds Requested from Heritage Account: \$50,000.00

Is a Project Map Attached? Yes No

(a map must include the project title, map scale, date map was created, and a north arrow)

Purpose of the Project:

The Area 10 mule deer herd is the largest in the state of Nevada, accounting for 15-20% of the statewide deer population. The Area 10 deer herd is comprised of several sub-herds that are highly migratory and exhibit long distance migrations from summer to winter ranges. The largest of these sub-herds is the one that summers in the Ruby Mountains of Hunt Units 102 and 103, and winters in the southern portion of the Ruby Mountains, the north end of the White Pine Range, and the Butte Mountains. Deer collared within this sub-herd have been documented to move more than 130 miles between their seasonal ranges. The summer range is generally defined by highly productive mid-elevation shrub communities mixed with



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aspen and mahogany stands, transitioning into productive alpine zones with scattered whitebark and limber pine stands. The winter ranges are comprised of sage steppe vegetation, with varying degrees of pinyon/juniper encroachment.

To enhance and protect the extensive migratory corridor, the stopover sites, and the winter ranges of the Area 10 mule deer herd there has been multiple NEPA processes completed in the past decade. The various projects focus on treating the tree encroachment that is so pervasive at the terminal reaches of the different migration corridors. The treatments include a combination of chaining, hand-thinning, mastication, weed abatement, and seeding. The projects are intended to reduce the potential of catastrophic wildfires as well as increasing the vegetative productivity of the winter range of the Area 10 mule deer herd. To date, millions of dollars have been expended the Nevada Department of Wildlife, the Bureau of Land Management, the United States Forest Service, and numerous other private partners and NGOs to conduct treatment projects on the winter ranges of the Area 10 deer herd. The 2020 project season will expand the footprint of the work that has been completed since 2015.

Detailed Description of Project (include any development plans such as vegetation removal, planting, seeding, or installation of structures; also include the schedule for obtaining any necessary permits, completing NEPA compliance, etc.):

The Proposed project is to conduct vegetation treatments in a minimum of 1100 acres in the Project Area to increase the diversity of herbaceous species, reduce fuel loads, and increase vigor and abundance of browse species. Areas targeted for treatment are crucial winter habitat for mule deer, classified as sagebrush communities where pinyon and juniper trees have become established and are invading/encroaching and creating undesirable conditions for forage/thermal cover balance. The stage of woodland development on sagebrush sites would influence the type of treatment method selected, follow-up treatment methods and management, understory competition, seed selection, and vegetation response following management. As described by Tausch et al. (2009) and Miller et al. (2008) the three stages of woodland succession are as follows:

Phase I – trees are present, but shrubs and grasses are the dominant vegetation that influence ecological processes (hydrologic, nutrient, and energy cycles) on the site;

Phase II – trees are co-dominant with shrubs and herbs, and all three vegetation layers influence ecological processes on the site; and

Phase III – trees are the dominant vegetation and the primary plant layer influencing ecological processes on the site. Shrubs no longer dominate the understory.

Stand characteristics can be used to classify the phase of development (e.g., percent of maximum potential tree canopy cover, leader growth, etc.), but specific numbers would vary by site. Early indicators of tree dominance include shrub mortality and reduced leader growth on trees less than 10 feet in height (Tausch et al., 2009). Research by Roundy (2014) suggests a tree dominance index, which relates tree cover to relative tree cover (tree + shrub + tall perennial grass cover), is a better indicator of phase, although the specific numbers would vary by site. Research on numerous



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sites throughout the Great Basin suggests that Phase I is less than 34 percent relative tree cover, Phase II is 34 to 68 percent relative tree cover, and Phase III is greater than 68 percent relative tree cover (Roundy, 2014).

Selecting the appropriate treatment to be applied would involve consideration of the vegetation composition, soils, slope, aspect, elevation, and the current successional and hydrologic state of the sites. In addition to the site conditions, it is equally important to determine how the management unit fits into the overall landscape mosaic, including, but not limited to wildlife habitat values, potential for wildfire, and other existing land use objectives.

The principal tree treatment methods under consideration for the Project include chaining, mastication, mulching, whole tree thinning, and hand thinning (both lop and scatter and cut and pile). Maintenance of treatments may be required in the future to maintain desired vegetative conditions. Maintenance (re-treatment or additional treatment) of treated areas may be implemented if the treatment unit and/or the watershed is departing, as indicated through monitoring, from the respective objectives listed. Any maintenance treatments would be held to the same design features identified within the respective NEPA analysis.

Mastication or Mechanical Whole Tree Thinning

Mastication or mechanical tree thinning would be the preferred treatment method for those areas of the Project in succession Phases II and III and where selective tree thinning is important. Mastication, mulching, and mechanical whole tree thinning includes a cutting head attached to a wheeled or tracked piece of machinery. Mastication grinds brush and trees into small, chipped pieces or mulch that are left on-site. Whole tree mechanical thinning uses an attachment (e.g., feller buncher) that cuts trees at the base. The tree could then be left on-site or moved off-site. Mastication or mechanical tree thinning would be restricted to slopes appropriate for the machinery and attachment being used (generally less than 20 percent slope). These treatment methods allow for selective tree removal (thinning areas or areas with desirable tree species intermixed) and would be used in areas where tree selection is desired, and where mahogany is prevalent within the area. Seeding prior to treatment would be considered in areas where mastication or whole tree thinning is used, especially in late Phase II and most Phase III areas. Criteria for seeding mixes and application is described in Section 2.3.1.6.

Mastication could be used in areas where chaining is impracticable (e.g., due to soil or hydrological conditions), where selective tree retention is needed, where prescribed fire could create unsafe conditions, or where the trees are too large for hand thinning. The mobility of the machines would allow the selective removal of trees to create indistinct edges instead of a straight edge. Mastication could be used either by itself or in conjunction with prescribed burning and chaining to achieve the desired treatment unit objectives.

Biomass created from mastication or mulching equipment would be left on-site to naturally degrade. When masticating or mulching, biomass material depth would be restricted to six inches or less. Whole tree thinning methods could be utilized for biomass removal and utilization, piling, or scattering.



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Biomass removal and utilization would be used in areas where the current road structure supports the use of vehicles to transport trees off-site is present. In areas with little to no vehicle access, trees could be cut and piled and disposed of at a later time with prescribed fire or scattered throughout the site. Felled trees would have the limbs removed to decrease visual impacts and to promote decomposition.

Hand thinning, fuelwood harvest, prescribed fire, and seeding, may be used in conjunction with or in addition to the primary methods mentioned above in order to meet the management objectives for each treatment unit.

Chaining

Chaining would be the primary treatment method for those areas of the Project identified for treatment in woodland succession Phases II (late) and III. Soil conditions, such as texture and moisture content would be factored into treatment plans in order to minimize soil compaction and surface disturbance.

Chaining would be accomplished using the Ely Anchor Chain (Navy ship anchor chain with 90-120 pound links and 18-inch railroad iron welded perpendicular to the chain link) pulled between two bulldozers. Chaining treatments would consist of a two-way chaining (chaining the trees twice, once from one direction, then from the opposite direction). Areas that are chained would be aerially seeded with perennial grasses, forbs and shrubs after the first pass, and prior to the final pass. In addition to aerial seeding, seed dribblers attached to the track of the bulldozer may be used to press shrub seeds such as antelope bitterbrush (*Purshia tridentata*) into the soil to promote establishment. Seed mixes would be determined as described below. Biomass may be left on-site for natural degradation, or treated with a secondary treatment (e.g., prescribed fire). Fuelwood utilization may be allowed in specific areas after restoration objectives have been accomplished.

Chaining would be conducted in a mosaic pattern, to the greatest extent possible, with approximately 200 feet between islands to blend and contrast the treatment area with the surrounding environment and replicate natural disturbance. Treatment edges would be blended or graduated using mechanical or manual tree felling methods or would utilize natural breaks in vegetation to further reduce sharp visual contrast of the area. Islands of untreated trees would be left to provide escape and thermal cover for wildlife, and to meet visual resource objectives. Chaining could occur anytime (outside design feature restrictions) but would generally occur in the late fall or winter months.

Chaining would generally be used where heavy to moderate densities of pinyon and juniper are causing decline of understory shrubs, grasses, and forbs within the Project Area. For the purpose of removing pinyon and juniper trees and maintaining sagebrush communities, chaining would not be a desirable method in areas with less than 10 percent tree cover. Chaining could be used on slopes of less than 20 percent, however this method may be considered on slopes up to 30 percent. Chaining would not be used in areas where selective tree removal is needed to meet treatment objectives. Chaining treatments would be designed to avoid existing and established stands of mahogany (*Cercocarpus* sp.) and where other limiting factors are present, such as wildlife, botany, hydrology, and/or soils.



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Hand Thinning

Hand thinning would primarily occur in Phase I woodland development areas within sagebrush habitat, and the goal is to remove the encroaching trees. The main objective would be to halt and reverse establishment of pinyon and juniper trees into the sagebrush dominated habitat. Hand thinning would involve the use of chainsaws to selectively hand cut trees within the treatment area. Hand thinning would primarily be utilized in areas where tree cover densities are less than 20 percent or where slopes exceed 30 percent. This treatment may also be used in denser stands to meet specific treatment objectives. Hand thinning may also be used as a pre-treatment or as a component of other treatments (e.g., prescribed fire, chaining, and mastication). In the lower bench areas where smaller diameter trees occur or where low tree densities are present, cut material would be left on-site with limbs scattered or placed next to the cut trunk. In areas where higher tree densities occur, cut material could be piled and later burned with prescribed fire or scattered throughout the treatment unit. Cut tree material in greater sage-grouse habitat would be scattered or piled next to the tree trunk to allow better movement of greater sage-grouse through and around the area.

Seeding

Seeding would primarily occur in late Phase II and all Phase III pinyon and juniper expansion areas. Seeding would also occur in areas where it is determined that existing understory vegetation is not sufficient (e.g., less than 10 percent relative cover of desirable perennial grass and forb species). Seeding would occur through aerial application, broadcast with a tractor or all-terrain vehicle (ATV), by dribblers mounted to dozers, or by hand application. Seeding would be conducted during the fall or early winter months, preferably prior to snow fall. Seed mixes would consist of a variety of grasses, forbs, and shrubs that are adapted to the site characteristics. Preference would be given to using a purely native seed mix; however, if it is determined that the threat of recurring wildland fire, invasive species establishment, or site characteristics may prevent achieving the treatment unit objectives, non-native perennials may be utilized to reduce these threats. Seed mixes would be determined by reviewing the ecological site descriptions for the treated areas to determine common species with a high probability of success to accomplish the desired objectives.

How Would this Project Help with “the protection, propagation, restoration, transplanted, introduction and management of any game fish, game mammal, game bird or fur-bearing mammal in this State; or the management and control of predatory wildlife in this State”? (See NRS 501.3575)

Area 10 has long been the stronghold for mule deer in the State of Nevada. Improving and maintaining critical habitats for this population increases the likelihood that mule deer will persist in sustainable levels. This project, and it's on the ground benefits aligns well with mission and objectives of the intended use of Wildlife Heritage Trust Account as defined in NRS 501.3575.



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Legal Description of the Property on Which the Proposed Project is to be Located (must include the property address, access roads, township, range and section):

The Project is located approximately 70-100 miles south of Elko, Nevada, in the southern portion of the Ruby Mountains, and is within Elko and White Pine counties. The Figure below shows the vicinity of proposed Project location. The Project Area encompasses both National Forest System (NFS) land in the Ruby Mountains Ranger District, as well as lands administered by the BLM's Egan Field Office. Some small in holdings of private land occur within the Project Area; however, the proposed Project does not include conducting treatments on these private lands.

Does this Project Have Additional Funding Sources Other than Your Wildlife Heritage Account Request? Yes No

Does this Project Involve Habitat Restoration and Improvement of a Long-term or Permanent Nature? Yes No

Please Describe in Detail the Reason Why You Need Wildlife Heritage Account Funding to Fund this Project:

Significant federal grant funding is available to work on migratory big game herds in the west; however, no federal match is necessary to leverage these federal funds. Heritage monies are ideally suited in scope and context to match towards federal grant funding and are ultimately the lynchpin to large-scale projects.

Project Duration: one year two years three years more

Estimated Start Date: September 2020

Estimated End Date: March 2021



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PROJECT FUNDING

The funding breakdown below should cover the total funding needs of the project. While projects may be extended beyond the fiscal year for which money was awarded, such an extension must be due to unusual circumstances and be approved by the Wildlife Commission (see NAC 501.340). Double click on the table to activate the embedded spreadsheet.

1. Amount of Heritage Account Funds Being Requested	\$	50,000.00	
2. Other Cash Funding Sources for this Project			
a. NFWF Grant	\$	200,000.00	
b.			
c.			
d.			
e. Total Other Cash Funding Sources (lines a - d)	\$	200,000.00	
3. In-kind Services for this Project			
a. Volunteer Time			
b. Equipment			
c. Materials			
d. Contract Labor			
e.			
f.			
g.			
h. Total Donations/In-kind Services (lines a - g)	\$	-	
4. Total Project Funding	\$	250,000.00	



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PROJECT COSTS

The cost breakdown below should cover the total costs of the project you are seeking funding for. NOTE: THE HERITAGE ACCOUNT CANNOT BE USED TO PAY INDIRECT COSTS. Double click on the table to activate the embedded spreadsheet.

	Heritage Costs	All Other Costs
1. Land Acquisition		
2. Personnel (NDOW employee costs can't be included in the Heritage column)		
3. Travel (NDOW travel costs can't be included in the Heritage column)		
a. Per diem		
b. Mileage		
c. Total Travel Costs (lines a & b)	\$ -	\$ -
4. Equipment Items		
a.		
b.		
c.		
d. Total Equipment Costs (line a - c)	\$ -	\$ -
5. Materials		
a. Seed		
b. Seedlings		
c. Herbicide		\$ -
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a. Contract Labor	\$ 50,000.00	\$ 200,000.00
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 50,000.00	\$ 200,000.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	\$ 50,000.00	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		\$ 200,000.00
9. Total Project Costs (add lines 7 & 8)	\$ 250,000.00	
(Note: total project funding from previous table must match total project costs)		



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Are There Going to be Any Ongoing Costs for This Project? Yes No

If There are Ongoing Costs Associated with This Project, is There an Anticipated Funding Source for These Costs? Yes No

Do You Anticipate Needing Additional Wildlife Heritage Account Funds Beyond the Upcoming Fiscal Year? If So, Please Describe What You Think Your Funding Requirements will be and for What Purposes (As noted above, extensions beyond the first fiscal year must be due to unusual circumstances and approved by the Wildlife Commission.):

No additional funding will be necessary for this project.

How Will You Give Credit to the Wildlife Heritage Account and Other Funding Sources?

It will be the privilege of the project proponent to identify all funding donors of in any publications, signage, media releases, presentations, or the like.

Authorizing Signature: *M Lu Davis*

Review Date: 4/10/2020

Maps

