

Nevada Department of Wildlife Wildlife Heritage Program

Project Summaries and State Fiscal Year 2023 Proposals



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Section 1:

Summaries of Recently Completed and Active Wildlife Heritage Projects

This section provides brief summaries of Wildlife Heritage projects that were recently completed during State Fiscal Year (FY) 2022. It also includes brief status reports for projects that were still active as of April 10, 2022.

The table on the following pages summarizes key characteristics about each of the projects that are addressed in this section. The financial status of these projects will be updated in early June and in time to be included in the support material for the June Wildlife Heritage Committee Meeting and the Board of Commissioners meeting.

Recently Completed and Active Wildlife Heritage Projects

(active projects and those completed during FY18 - 21; expenditure data is according to DAWN as of April 7, 2022)

Heritage Project Number	Name of Heritage Project	Project Manager	Heritage Award Amount	Dollars Spent as of April 7	Status of Project
18-05	Overland Pass Pinyon and Juniper Thinning	Caleb McAdoo, NDOW	\$172,900	\$75,000	Ongoing, completion expected in FY23
18-06	Goshute Mountains Springs Protection	Matt Glenn, NDOW	\$45,000	\$25,393.22	Ongoing, completion expected in FY23
19-10	Comins Lake Boat Ramp	Lance Murray, NDOW	\$85,030.31	\$85,030.31	Completed
20-03	South Mountains Habitat Restoration	Moira Kolada, NDOW	\$94,644.66	\$93,544	Completed
20-05	Egan Johnson Basin Restoration	Moira Kolada, NDOW	\$89,644.66	\$52,190	Completed
20-06	North Cave Valley Habitat Restoration	Moira Kolada, NDOW	\$79,802.31	\$79,802.11	Completed
20-07	Prioritizing and Protecting Natural Water Resources	Cody Schroeder, NDOW	\$50,000	\$50,000	Completed
20-09	Big Game Survey Tool	Cody McKee, NDOW	\$70,000	\$64,856.06	Complete. Remaining balance to be spent by close of FY22
20-10	Maximizing the Effectiveness of Common Raven Removal	Pat Jackson, NDOW	\$70,000	\$69,977.72	Completed
20-12	Staheli Chaining Maintenance Project	Cory Lytle, Lincoln County CAB	\$75,000	\$75,000	Completed
20-13	Blacktop Apron Guzzler Upgrade	Clint Bentley, Fraternity of the Desert Bighorn	\$21,400	\$0	Complete. Remaining balance to be spent by close of FY22
20-14	Mormon #3 "Prospect" Guzzler Upgrade	Clint Bentley, Fraternity of the Desert Bighorn	\$21,615	\$0	Complete. Remaining balance to be spent by close of FY22
21-03	Marlette Lake Broodstock Facilities/Passage Improvement Project Phase 2	Travis Hawks, NDOW	\$100,000.00	\$77,547.47	Completed
21-05	Desert Creek Conservation Easement	Shawn Espinosa, NDOW	\$100,000.00	\$0	Ongoing, completion expected in FY23

Recently Completed and Active Wildlife Heritage Projects

active projects and those completed during FY18 - 21; expenditure data is according to DAWN as of April 7, 2022)

Heritage Project Number	Name of Heritage Project	Project Manager	Heritage Award Amount	Dollars Spent as of April 7	Status of Project
21-06	Middle Rock Creek Habitat Improvement	Matt Glenn, NDOW	\$125,000.00	\$29,495.15	Ongoing, completion expected in FY23
21-08	Snake Range Aspen Habitat Restoration Project	Moira Kolada, NDOW	\$30,000.00	\$0	Ongoing, completion expected in FY23
21-10	Egan Johnson Basin Restoration	Moira Kolada	\$75,000.00	\$0	Ongoing, completion expected in FY23
21-11	Area 10 Mule Deer Migration Corridor Habitat Enhancement	Caleb McAdoo	\$76,000.00	\$0	Ongoing, completion expected in FY23
21-12	Toiyabe PMU (Bates, Hickison and Wolf Ranches) Pinyon-Juniper Thinning	Jeremy Lutz	\$75,000.00	\$75,000	Completed
21-13	SE Schell Habitat Restoration Project	Moira Kolada	\$75,000.00	\$0	Ongoing, completion expected in FY23
21-14	Enhancement of Crucial Habitat for Antelope and Mule Deer in Washoe County, Nevada	Cody Schroeder (Mark Freese, Chris Hampson)	\$100,000.00	\$0	Ongoing, completion expected in FY23
21-15	A New Population Model for Antelope to Improve Accuracy, Identify Limiting Factors, and Improve Management Decisions	Cody Schroeder	\$37,500.00	\$0	Ongoing, completion expected in FY23
21-16	Investigating Potential Limiting Factors Impacting Mule Deer in Northwest Nevada	Pat Jackson	\$65,000.00	\$50,788.28	Ongoing, completion expected in FY23
21-17	East Walker River Fish Habitat Enhancement Project	Sam Sedillo, Truckee TU (Kris Urquhart)	\$11,191.00	\$0	Ongoing, completion expected in FY23
21-18	The Interaction Between Restoration, Foraging Ecology, and Mating Behavior in Greater Sage-Grouse	Dr. Gail Patricelli, UC Davis (Shawn Espinosa)	\$65,855.00	\$56,512.84	Ongoing, completion expected in FY23
21-21	Cave Valley Collaboration	Lauren Williams, DCNR (Moira Kolada)	\$50,000.00	\$0	Ongoing, completion expected in FY23
	FY 18-21	Totals	\$1,837,682.94	\$960,137.50	

Recently Completed and Active Wildlife Heritage Projects

(active projects and those completed during FY22; expenditure data is according to DAWN as of April 7, 2022)

Heritage Project Number	Name of Heritage Project	Project Manager	Heritage Award Amount	Dollars Spent as of April 7	Status of Project
H22-01	2021-2022 Bighorn Sheep and Mountain Goat Capture, Transplant, Test and Remove, Monitoring, and Research Programs	Mike Cox, NDOW	\$ 161,230.81	\$ 162,895.00	Completed
H22-02	Wildfire Related Restoration and Seed Purchase	Lee Davis, NDOW	\$ 150,000.00	\$ 86,077.50	Ongoing, completion expected in FY23
H22-03	Wildlife Water Development- Emergency Water Haul	Matt Maples,, NDOW (Clint Bentley)	\$ 50,000.00	\$ -	Ongoing, completion expected in FY23
H22-04	Izzenhood WMA Mule Deer Winter Habitat Restoration Project	Brittany Trimble, NDOW	\$ 71,850.00	\$ 31,250.00	Ongoing, completion expected in FY23
H22-05	Area 10 Mule Deer Migration Corridor Habitat Enhancement	Moira Kolada, NDOW	\$ 75,000.00	\$ -	Ongoing, completion expected in FY23
H22-06	Pole Canyon Conservation Easement	Madi Stout and Caleb McAdoo, NDOW	\$ 200,000.00	\$ -	Ongoing, completion expected in FY23
H22-07	Nelson Creek Mule Deer Habitat Improvement	Matt Glenn,, NDOW	\$ 57,750.00	\$ -	Ongoing, completion expected in FY23
H22-08	Smith Valley Habitat Restoration	Moira Kolada,, NDOW	\$ 75,000.00	\$ -	Ongoing, completion expected in FY23
H22-09	Whistler Mountain Pinyon/Juniper Hand Thinning	Jeremy Lutz, NDOW	\$ 40,000.00	\$ -	Ongoing, completion expected in FY23
H22-10	Argenta Rim Mule Deer Enhancement Project	Jeremy Lutz, NDOW	\$ 75,000.00	\$ 75,000.00	Completed
H22-11	Optimizing management towards maximizing brood habitat for Greater Sage-grouse	Shawn Espinosa, NDOW	\$ 50,000.00	\$ 9,236.52	Ongoing, completion expected in FY23
H22-12	Mule Deer radio-collaring study in Northwest Nevada	Cody Schroeder, NDOW	\$ 25,000.00	\$ 24,530.00	Completed
H22-13	Area 6 Elk Mortality Investigation	Cody McKee, NDOW	\$ 85,000.00	\$ 62,935.24	Ongoing, completion expected in FY23
H22-14	Moose Monitoring	Cody McKee/Kari Huebner, NDOW	\$ 20,000.00	\$ 11,443.60	Ongoing, completion expected in FY23
H22-15	Common Raven Monitoring	Pat Jackson, NDOW	\$ 30,000.00	\$ 329.60	Ongoing, completion expected in FY23

Recently Completed and Active Wildlife Heritage Projects

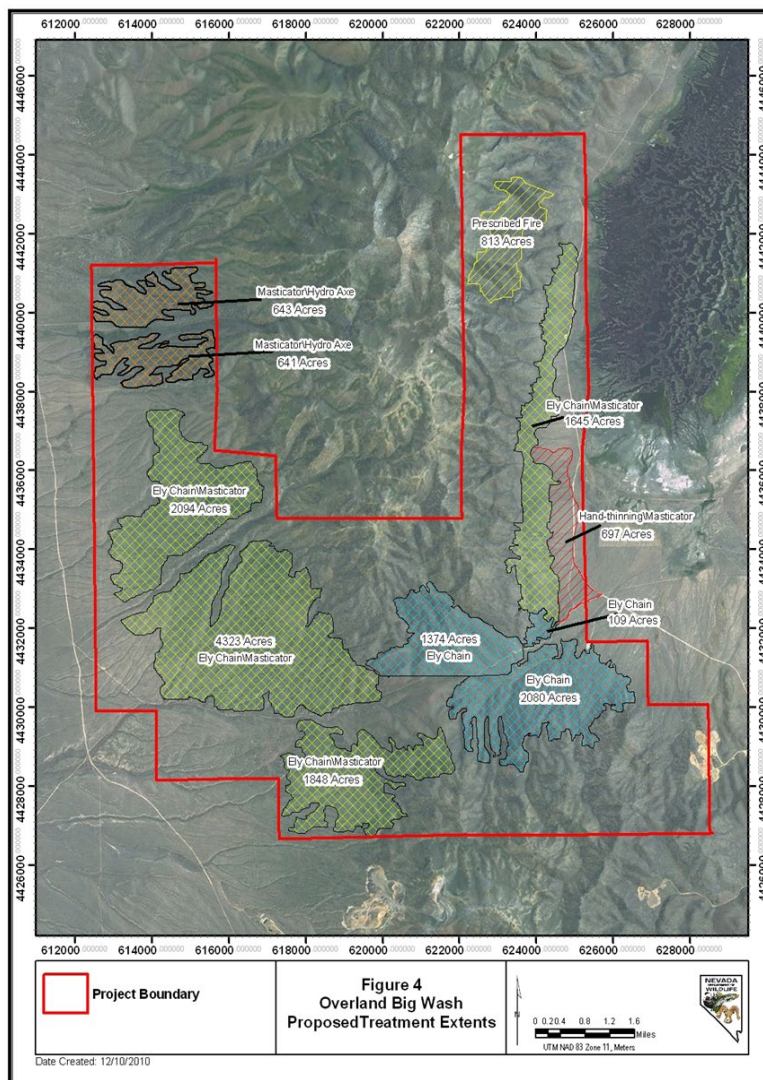
(active projects and those completed during FY22; expenditure data is according to DAWN as of April 7, 2022)

H22-16	Investigating Potential Limiting Factors Impacting Mule Deer in Northwest Nevada	Pat Jackson, NDOW	\$ 30,000.00	\$ -	Ongoing, completion expected in FY23
H22-17	Milk Ranch Spring and Habitat Enhancement	Cory Lytle, Lincoln County CAB (Moira Kolada)	\$ 90,000.00	\$ -	Ongoing, completion expected in FY23
H22-18	Cave Valley Ranch Pinyon Juniper Removal	Lauren Williams, Conservation District (Moira Kolada)	\$ 50,000.00	\$ 49,962.15	Completed
H22-19	Survey and Maintenance of Existing Big Game Guzzlers	Clint Bentley, Fraternity of NV Bighorns (Sam Hughs)	\$ 41,000.00	\$ -	Ongoing, completion expected in FY23
H22-20	Restoration, foraging ecology, and mating behavior in Greater Sage-Grouse (phase 2)	Gail Patricelli, U.C. Davis (Shawn Espinosa)	\$ 69,521.00	\$ 1,839.44	Ongoing, completion expected in FY23
H22-21	Quantifying the influence of feral horses on greater sage-grouse populations in Nevada”	Steve Petersen, Brigham Young University (Mark Freese)	\$ 5,900.00	\$ 2,728.75	Ongoing, completion expected in FY23
H22-22	Licking Ranch WMA Land/Water Rights Purchase	Mike Zahradka, NDOW	\$ 330,000.00	\$ 330,000.00	Completed
Totals			\$ 1,782,251.81	\$ 848,227.80	

Heritage Project 18-05: Overland Pass Pinyon and Juniper Thinning

The objective of this project is to thin or completely remove Pinyon-Juniper trees from identified polygons in order to promote a more healthy and biodiverse habitat for wildlife. The entire project area is 3,500 acres, where an estimated 7,000 mule deer transition through the project area twice a year.

An extension is requested as work was originally delayed due to contracting and Covid related scheduling issues. BLM has completed NEPA and cultural clearances for additional project work and NDOW plans on issuing a contract soon for work summer/fall 2022. We anticipate the work will be completed by December 31, 2022.



Heritage Project 18-06: Goshute Mountains Springs Protection

The project included the construction of a single 325-foot pipe rail fence to preclude access of wild horses to Rock Springs located in the northern portion of the Goshute Mountains. This fence was constructed as a part of a larger effort in this mountain range and the surrounding area to protect important natural

water features from the negative impacts of wild horse over utilization. As natural water sources are limited in the cold desert, projects like this stand to benefit a myriad of wildlife species including but not limited to mule deer, elk, and upland bird species.

An extension is requested as work was completed, but during the summer of 2020 a BLM water development associated with Rock Spring failed resulting in horses breaching the fence. A fence rebuild contract utilizing more robust fence material has been awarded and is scheduled to be completed by March 29, 2023.



Heritage Project 19-10: Comins Lake Boat Ramp

NDOW's Boating Access Program completed the Comins Lake Boat Launch Project. Project accomplishments included installation of a boat ramp, retractable dock, road improvements, two parking lots, four recreational shade structures, four bearsaver trash containers, and signage throughout project site. The construction of this project will satisfy the current and anticipated future (15-20 years) demand for recreational fishing and boating access at Comins Lake. Based upon projected data, the NDOW

estimates that the new Comins Lake ramp will provide approximately 150 boating days/month of use during the peak boating season of April – September. The Comins Lake Boat Launch Facility will also benefit nearby, local economies as anglers and boaters are willing to travel considerable distances to enjoy these recreational opportunities. Local economies will derive benefits from increased sales of gasoline, food, equipment, supplies, and lodging. Completion of this ADA compliant boating facility will also provide convenient public access to 410 surface water acres on Comins Lake for sportfish and boating recreation and increase boating participation by an estimated 15%.

Other funding sources contributed \$1,392,385.94 for a total project costs of \$1,467,235.57.



Heritage Project 20-03: South Mountains Habitat Restoration

This project targeted 1,110 acres within the South Mountains. These acres were targeted based on the benefit wildlife, specifically grouse (sage grouse and blue grouse), mule deer, and elk. All acres identified in this proposal were located on private lands, but the Bureau of Land Management (BLM), Ely District is in the process of performing treatments on adjacent federally managed lands. Treatment acres were targeted to create a seamless project between the private and federal lands. The majority of the treatments were focused on the removal of pinyon pine and juniper trees to improve the health of the sagebrush and mountain brush communities. Several aspen stands were also targeted for conifer removal to help stimulate aspen regeneration. The South Mountain treatment areas provide 955 acres of crucial summer, 172 acres general summer, and 17 acres of winter range for mule deer and 657 acres of crucial summer and 4,792 acres of year-round habitat for elk. Sage grouse and blue grouse occupy and transition throughout the treatment areas.



Pre (left) and post (right) treatment photographs.

Heritage Project 20-05: Egan Johnson Basin Restoration

The Nine Mile chaining originally completed in 2001 by the Ely BLM was beginning to infill with young pinyon and juniper trees given and was maintained by the Department of Wildlife in conjunction with Ely BLM in the winter of 2020. Maintenance was performed by a contract sawyer crew. This chaining provides crucial winter habitat for mule deer, year round habitat for elk, and GHMA for sage grouse. The chaining maintenance performed will improve the health of the sagebrush vegetation community and eliminate potential predatory perches. This project is part of a landscape effort by the Ely BLM and the Nevada Department of Wildlife to with in the greater area to improve overall landscape health for wildlife and fuels reduction.



Photograph taken when treatment was in progress (left side untreated and right side treated)

Heritage Project 20-06: North Cave Valley Habitat Restoration

This project targeted 1,544 acres in North Cave near Blue Rock and Willow Springs Area. Including two wildlife corridors that were proposed in the Cave and Lake Restoration Plan, these corridors open a connecting route between breeding and nesting habitat to summer brood-rearing habitat. Corridor treatments would focus on the removal of pinyon pine and juniper trees to improve the health of the sagebrush vegetation community and eliminate potential predatory perches. The North Cave Valley treatment areas provide 480 acres of winter and 1,063 acres of summer habitat for mule deer; 146 acres of year-round habitat, 661 acres of crucial summer habitat, and 742 acres of general summer habitat for elk; and 411 acres of PHMA, 94 acres of GHMA, and 274 acres of OHMA for sage grouse. One Greater-sage grouse lek is located immediately adjacent to the treatment area. The Bureau of Land Management (BLM), Ely District has and is in the process of performing treatments on adjacent lands. Treatment acres were targeted to create a seamless project between the private and federal lands.

Heritage Project 20-07 Prioritizing and Protecting Natural Water Resources

NDOW received a four page summary report and 13 years of statewide coverage for NDVI and surface water inundation for years 2009-2021. The spatial resolution is 30 meters pixels. The purpose of this project is to: 1) identify habitat overlap between feral equids (horses and burros) and mule deer, 2) map areas of potential competition between these species, and 3) develop an assessment tool to prioritize resource damage and mitigation measures. The project will use existing GPS collar data collected by the Nevada Department of Wildlife to map and identify areas where mule deer and feral equids spatially

overlap on crucial habitat such as winter ranges, summer fawning habitats, and water sources. The report and associated analytical tool will be provided to partners with BLM and the U.S. Forest Service to help prioritize areas where horse populations are predicted to negatively impact deer and other big game species in Nevada. Secretarial Order 3362 directs state wildlife and federal land management agencies to work cooperatively on identifying impacts to migration corridors and crucial winter ranges of big game species. This project will provide additional data to help facilitate that cooperation. This report summarizes progress with respect to these objectives as of February 28, 2022.

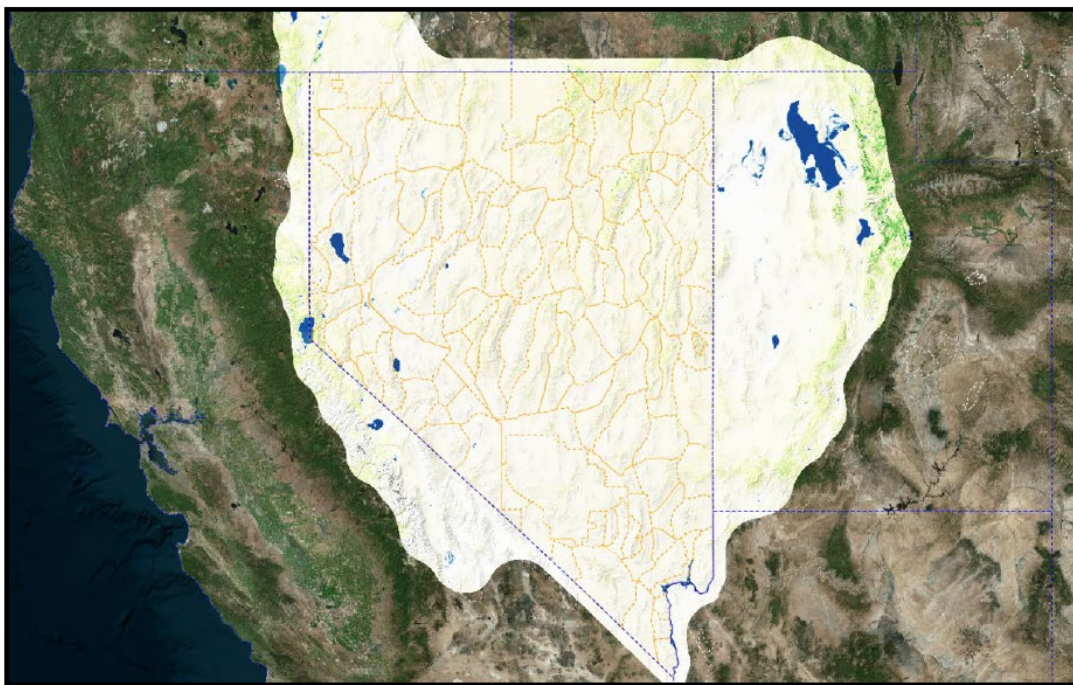


Figure 1. The state of Nevada plus a buffer that captured at least 10-km in all neighboring states, with additional buffers where telemetered animals crossed state lines. Western Utah is included to capture more telemetered animals living under similar ecological conditions to those in eastern Nevada. Orange lines represent NDOW hunt units.

Heritage Project 20-09 Big Game Survey Tool

Using funds obtained through the Wildlife Heritage Program, we contracted with Environmental Systems Research Institute (Esri) to develop a Wildlife Survey Application (WSA) capable of accommodating data entry on a mobile device during aerial surveys. Further, the WSA allows for seamless submission of audio recordings, flight paths, group locations, and classification data to a cloud-based server.

Beta testing of the WSA occurred in Summer 2021 and was officially launched prior to post-hunt deer surveys. The majority of Game Biologists subsequently used the WSA for their winter and spring flights. As of March 14th, nearly 40,000 observations had been collected in the WSA including all major big game species, as well as sage grouse, chukar, snowcock, and feral horses. The consolidated dataset allows biologists and staff the opportunity to review classification data and survey effort in near real-time, greatly expediting a process that once took several weeks or months to achieve.

Esri has invested significant resources towards promoting the WSA to users around the world. The first was an article, released to their blog in January 2022, highlighting the various conservation challenges faced by wildlife in Nevada and ways the Survey App can help: <https://www.esri.com/about/newsroom/blog/nevada-aerial-mule-deer-mapping/>. The second, is a short video profiling a Nevada elk survey. The video is still in-prep and will be distributed to the Heritage Committee upon completion.

Heritage Project 20-10 Maximizing the Effectiveness of Common Raven Removal

We purchased raven GPS transmitters and airtime to track raven movement and develop models in order to help identify conflicts with Greater Sage-Grouse. Thirteen Argos GPS transmitters were refurbished and 15 were deployed by NDOW technicians. During FY2022, 4 to 15 ravens were on air. This project was completed by using remaining funds to pay for ARGOS airtime to receive GPS data. These data informed raven movement models, benefiting Greater sage grouse and common raven management.

Heritage Project 20-12: Staheli Chaining Maintenance Project

The Staheli chaining originally completed in the 1960's by the Ely BLM was beginning to infill with young pinyon and juniper trees given and was maintained by the Department of Wildlife in conjunction with Ely BLM in the during the fall of 2020 and the summer of 2021. The original chaining was approximately 3,400 acres and this project was able to complete maintenance on 1,280 acres utilizing a contract sawyer crew. This chaining provides habitat for mule deer, elk, and growing number of wild turkeys. The chaining maintenance performed will improve the health of the sagebrush vegetation community and eliminate potential predatory perches. This project is part of a landscape effort by the Ely BLM and the Nevada Department of Wildlife to with in the greater area to improve overall landscape health for wildlife and fuels reduction.



Pre (left) and post (right) treatment photographs.

Heritage Project 20-13: Blacktop Apron Guzzler Upgrade

A 9,200-gallon wildlife water development was constructed on the South end of the Desert Range, located on the National Testing and Training Range. This project included four 2,300-gallon tanks and a 60'X40' sheet metal apron that will catch precipitation throughout the year. The total disturbance of the project is around ¼ of an acre. This project will help restore connectivity of Desert Bighorn Sheep movement

throughout the Desert Range. The old Blacktop project located less than ¼ of a mile to the East has become unreliable during the summer months when bighorn sheep are reliant on water.

This project successfully replaced an old wildlife water development project that Desert Bighorn Sheep have become habituated to for the last 30 years. The old project was failing to collect enough water throughout the wet season and had enough failing components to justify a new site. The new Blacktop guzzler site will benefit Desert Bighorn Sheep throughout the Southern end of the Desert Range as well as a variety of non-game species.



Heritage Project 20-14: Mormon #3 'Prospect' Guzzler Upgrade

Desert bighorn sheep water development also known as a 'guzzler' constructed in the Mormon Mountains, approximately 55 miles Northwest of Mesquite, Nevada. This guzzler consists of four 2,300 gallon HDPE UV inhibitor tanks. The average precipitation in the Mormon Mountains is 1.82, therefore an 80'X40' sheet metal apron or collection source was constructed to supply the 9,200-gallon system.

The tanks are set level to an 80-gallon wildlife friendly drinker that was concreted in place. A 48'X48' pipe-rail fence was constructed around the drinker to allow wildlife to access the drinker but prevent wild horses and cattle from utilizing the water source. The original barbed wire fence was removed as it was dilapidated and posed as a wildlife threat. A new three-strand barbed wire fence with slick wire on the bottom was constructed around the apron to prevent large ungulates from damaging the collection source.

This 9,200-gallon guzzler will provide a valuable water source to the North end of the Mormon Mountains. The guzzler was constructed to provide water to Desert bighorn sheep, but all species in the region will benefit from this water source. Desert bighorn sheep in the past were habituated to the original site, and with multiple components of the original site failing, re-construction in the same location was necessary.



21-03 Marlette Lake Broodstock Facilities/Passage Improvement Project Phase 2

This project consisted of the full removal of a corrugated pipe culvert structure (21'x2) that sits near the terminus of Trelease Creek into Marlette Lake. Once removed, the pipe was replaced with a

bottomless archway that allows fish passage upstream to the location of the Marlette Lake spawning facility. A designed channel was constructed in place of the old pipe as well as a step pool structure and dredging of a delta formed where Trelease Creek meets Marlette Lake. This action eliminated a barrier to fish movement up Trelease Creek and will enable the improved operation of the Marlette Lake fish spawning facility and benefit the statewide fish production program. The broodstock trout (Rainbow, Lahontan Cutthroat Trout) in Marlette Lake provide offspring for stocking across the state of Nevada that results in license revenue and benefits all species.



21-05 Desert Creek Conservation Easement

This project entails the development of a conservation easement on the Desert Creek Ranch located in Lyon County, NV south of Wellington. The property is important breeding and brood rearing habitat for the Bi-State Sage-grouse. See below for accomplishments to date. The development of easement language has been the most significant effort thus far.

To date, easement language has been developed and shared with the landowner. The landowner has provided the document to their attorney, but the review of the language has not been completed yet. Ongoing discussions between the Eastern Sierra Land Trust and the landowner have been positive and there has been indication that the landowner would like to close on the easement by the end of this calendar year. Other funding sources are tied to this project including NRCS Grassland Reserve Program. An appraisal of the property still needs to be completed once the terms of the easement are agreed upon.

In addition to the appraisal of the property, field work will need to be completed the involves a baseline report and grassland management report for NRCS.

An extension is requested as work is ongoing with appraisals and easement review occurring.

21-06 Middle Rock Creek Habitat Improvement

In the implementation of the Middle Rock Creek Habitat Improvement Project, winter annual grass densities were significantly reduced in a 2,000-acre treatment area which allowed for the aerial seeding sagebrush and snowstorm forage kochia. In time, this treatment should develop into an even greater resource for a myriad of wildlife species and most notably mule deer.

In November 2019, 2,000 acres were treated with Imazapic on the East and West side of Rock Creek in the Middle Rock Creek area (see attached map). The pre-emergent application was modeled after an approach successful elsewhere as a foliar application with similar ESDs that has demonstrated high levels of cheatgrass control. This approach does not use an adjuvant/surfactant that promotes adhesion of the formulation to the target plant material but instead, allows the pre-emergent (imazapic) chemical to leech past the dried stems and leaves of the standing grass to the thatch layer and soil horizon where annual grass seeds persist.

Aerial seeding of the same 2,000-acre pre-emergent footprint was implemented in January 2021. The proposed treatment plan and schedule included seedling planting however due to contracting constraints aerial seeding was determined most feasible. Future treatment of the site with seedling planting is likely but not planned.

Monitoring for pre-emergent treatment effectiveness in the 2020 field season with multiple confounding ecological variables potentially impacting winter annual densities made it difficult to discern any one causal factor in winter annual density reductions. Confounding variables that occurred in the fall, winter, and spring of 2019-2020 included but are not limited to very high winds (events up to 70 mph), drought, and a Mormon cricket infestation. Nearly range wide winter annual density reductions were observed in the Elko District during the 2020 field season.

During monitoring in 2021, we observed significantly reduced cheatgrass densities from 2020, and anecdotal increases in 1–2-year-old sagebrush plants. Continued drought may still be a major contributing factor in the reduction of cheatgrass at the site as the same density reduction of winter annuals was true throughout the region.

We are requesting an extension for the remaining balance of this Heritage funding in the amount of \$95,504.85. The remaining balance of this projects budget will be utilized to fund a remote sensing modeling exercise of approximately one-million acres targeting the area-six mule deer herds migratory corridor and winter range. The primary objectives of this model will be to monitor the success of completed treatments and to better inform the planning of future treatments. This portion of the Middle Rock Creek Habitat Project has been delayed due to contracting constraints, however these issues have been resolved and this portion of the project will be implemented in in the 2022 (FT23) field season.



21-08 Snake Range Aspen Habitat Restoration Project

The Nevada Department of Wildlife (NDOW) in coordination with the Bureau of Land Management, Ely District (BLM) has identified approximately 300 acres where removal of encroaching conifers would benefit aspen health. Treatment will consist of selectively thinning or complete removal of conifer within the aspen stand (including a 75 foot buffer). Some conifer trees may be left for the benefit of those species that rely on mixed conifer and aspen stands. Additional acreage may be treated on the Great Basin National Park pending completion of NEPA and availability of funds.

The primary method of tree removal would be done by hand crews with the use of chainsaws. Trees would be cut as close as possible to ground level with a maximum stump height of 12 inches. Cut trees would be lopped and scattered or piled and burned.

Work was delayed due to Covid related contracting issues. A contract will be issued in 2022 with work to be completed by December 31, 2022.

An extension is requested to allow for project completion.

21-10 Egan Johnson Basin Restoration

The purpose of this project is to help restore natural site conditions, reduce potential for large wildfires by reducing fuel loading, increase understory grass and forb species diversity, and to improve wildlife habitat. The need of this action is to respond to the ecological departure of plant communities from the natural range of variability within Egan and Johnson Basins relative to desired conditions. The need arises primarily due to successional changes in sagebrush and pinyon-juniper stands resulting in establishment and above normal density of single-leaf pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) trees.

The Egan Johnson project boundary is approximately 84,675 acres and encompasses 21 treatment units identified within that boundary. The 21 treatment units are approximately 37,455 acres of public lands administered by the BLM and 1,045 acres of private lands in the Egan and Johnson Basins. Treatment of private land would only occur if a cooperative agreement is executed with the private landowners. Up to 65% of the treatment unit acres may be treated within the identified units. A combination of vegetation treatment methods would be used to achieve resource objectives. The proposed treatment methods would include mechanical and manual tree thinning. Areas targeted for treatment are sagebrush communities where pinyon-juniper trees have become established. Within that project boundary and between treatment units, hand thinning of Phase I pinyon-juniper would occur.

Work has been delayed due to Covid related issues. A contract will be issued spring of 2022 with work to be completed by December 31, 2022.

An extension is requested to allow for project completion.

21-11 Area 10 Mule Deer Migration Corridor Habitat Enhancement

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 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.

The Proposed project is to conduct vegetation treatments in a minimum of 1,100 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.

The BLM has completed NEPA and cultural clearances for the project, and NDOW plans on issuing a contract for the work early summer 2022. We anticipate the work being completed by December 31, 2022.

An extension is requested to allow for project completion.

21-12 Toiyabe OMU (Bates, Hickison and Wolf Ranches) Pinyon Juniper Thinning

Heritage award was used towards manual thinning of 1,950 acres of Pinion Juniper found on BLM, Forest Service, and privately administered lands within the Toiyabe PMU. Project was successful at thinning early Phase 1 and Phase 2 Pinion and Juniper trees from high value sage brush habitat. All sage brush obligates will benefit from conifer removal, with special emphasis on sage grouse and mule deer within the Toiyabe PMU.



Pre (top) and post (bottom) treatment photographs

21-13 SE Schell Habitat Restoration

The Nevada Department of Wildlife in coordination with United States Forest Service, Ely Ranger District (FS) and the Bureau of Land Management, Ely District (BLM) has identified approximately 3,500 acres where removal of encroaching pinyon and juniper would benefit wildlife habitats. Treatment will consist of the complete removal of pinyon and juniper throughout most of the treatment area; some areas would have islands and stringers left uncut to benefit big game, upland game, and non-game species.

The areas prioritized by the Ely FS, Ely BLM and NDOW were chosen because of the habitat values they provide to wildlife. While mule deer and sage-grouse are the primary target species, antelope and elk will also benefit from these treatments. Treatment designs implemented in this project will encompass a variety of features to benefit other game and non-game wildlife species. One main species targeted for with these design features is the ferruginous hawk, who use stringer for PJ for nesting habitat.

BLM has completed the Categorical Exclusion (CX) for this work. The contract has been awarded and work will commence summer/fall 2022.

An extension is requested to allow for project completion.

21-14 Enhancement of Crucial Habitat for Antelope and Mule Deer in Washoe County, Nevada

The purpose of this project is to enhance and improve crucial habitat for mule deer, antelope, and sage-grouse within the boundaries of the BLM Applegate and Eagle Lake Field Offices in northern Washoe County. Specifically, it will improve visual openness of habitat corridors for migrating mule deer and antelope, reduce predation rates, improve body condition, and protect crucial water resources for all wildlife. We expect this project to have direct and immediate benefits to many species of wildlife in this region.

This project has been delayed due to changes in personnel at NDOW, and better alignment with other grant funding opportunities. NDOW receive a National Fish and Wildlife Foundation grant in March of 2021 that was designed to be a 1:1 to match for this project. We expect the project will be implemented on the ground during summer/fall of 2022.

An extension is requested to allow for project completion.

21-15 A New Population Model for Antelope to Improve Accuracy, Identify Limiting Factors, and Improve Management Decisions

This project will directly benefit NDOW biologists who manage mule deer and pronghorn in the state, the NDOW Wildlife Commission who set policies and regulations pertaining to this species and the public of Nevada who enjoy these species. The Integrated Population Model (IPM) has been in development for about 3 years now. A similar model for mule deer was published in The Wildlife Society Bulletin: <https://doi.org/10.1002/wsb.841>

Our contract for this work expired during COVID pandemic and a new contract has been established. Work has resumed but will not be completed until FY2023.

An extension is requested to allow project completion.

21-16 Investigating Potential Limiting Factors Impacting Mule Deer in Northwest Nevada

Mule deer (*Odocoileus hemionus*) populations in northwest Nevada have experienced declining population trends. Consequently, both tag numbers and quality of hunt experiences for the user community have also declined. So that we can improve tags and hunting experiences, we must first quantify the current population density of mule deer in this region and quantify the causes of the declining population trends. The purpose of this project is to determine the densities of mule deer, mountain lions (*Puma concolor*), and feral horses (*Equus ferus*) in Northwest Nevada, and to describe the spatial and temporal variation in these densities.

To date trail cameras and weather stations have been purchased and partially deployed, but project work has been delayed due to field work and travel restrictions related to Covid.

An extension is requested to allow for project completion.

21-17 East Walker Fish Habitat Enhancement

This project will improve fishery habitat in the East Walker near the Bighorn Campground through construction of in-stream structures that will diversify habitat and increase holding water during winter low-flow periods. Site assessments, initial engineering details, and location mapping has been conducted by an external contractor (Stream Wise).

Clearance's and permitting has taken longer than expected. The Section 404 permit approval for working (fill) in waterways has been delayed due to staff availability to review applications by the Army Corps of Engineers. It is anticipated that the permit will be issued soon, and we're still hopeful to have the project completed by June 2022, however uncertainty exists, and it is out of our control. The 401 Water Quality Certification has been executed by NDEP and the Walker River Irrigation District (WRID) has been given the construction plans for review to ensure there no adverse effects to water rights within the East Walker River and we are currently waiting for their confirmation.

An extension is requested to allow for project completion.

21-18 The Interaction Between Restoration, Foraging Ecology, and Mating Behavior in Greater Sage-Grouse

The increasing frequency and severity of wildfires in the sagebrush ecosystem is a primary threat to sagebrush species, such as Greater Sage-Grouse (*Centrocercus urophasianus*; sage-grouse). Restoration efforts have focused on regrowth of native plant communities, but we still know too little about the effectiveness of these efforts in protecting species of concern. Studies have addressed sage-grouse population trends and large-scale habitat selection in response to restoration. However, no studies to date have linked wildfire impacts and restoration treatments to foraging behavior (time spent foraging, diet choice in restored areas, and diet quality) and breeding behaviors (display behavior, lek visitations, and mating rate), though these microhabitat-scale processes are critical drivers of population health and habitat use. We propose to coordinate with ongoing restoration efforts by NDOW and the BLM, and ongoing large-scale monitoring and habitat-selection mapping by the USGS, to investigate how fire and restoration practices alter sage-grouse microhabitat selection processes. We will conduct this work in the Santa Rosa Mountains (Humboldt County, NV), which burned in the 2018 Martin fire, and is in the early stages of restoration. This project has 3 objectives. Objective 1 is to use non-

invasive biomarkers from fecal samples to assay health and diet quality (systemic stress and nutritional stress) of sage-grouse across a mosaic of unburned and recently burned areas, with different types of ongoing restoration (post-fire seeding, herbicide treatment, drill-seeding). Objective 2 is to follow telemetry-tagged hens to foraging sites to examine how nutritional quality of sagebrush differs with different burn/restoration status, and to examine sage-grouse diet preference at the large-scale (patch choice) and microhabitat scale (plant choice). Objective 3 is to assess movement of telemetry-tagged hens among leks and foraging sites relative to burn/restoration status, and whether the habitat quality of lek sites affects male and female lek behaviors and the browsing on sagebrush or forbs/grasses on the lek area. This project will allow us to leverage and expand upon ongoing efforts for restoration and monitoring, helping to understand the mechanisms that drive large-scale patterns of habitat selection, informing future restoration efforts in the Santa Rosa Mountains and across the range of the species.

Field work on this project is currently ongoing but was disrupted by Covid restrictions. Most billing for this project should be completed by the end of FY22.

An extension is requested to allow for project completion.

21-21 Cave Valley Collaboration

This project has two components, each equally important, and necessary for continued habitat enhancement on private and federal land in Cave Valley. Our first goal is to properly fence two areas of private property on Cave Valley Ranch while our second goal involves Pinyon Juniper removal on nearby public lands. In the last year this ranch has continued its transformation with 1,300 acres of pinyon and juniper (PJ) removed, 2,600 pounds of seed put on the ground, and continued weed treatments throughout the ranch. These two fences will provide much needed protection for all of this on the ground work. Both large ungulates and cattle utilize this ranch and, in turn, the ranch is committed to a management style that results in healthy rangelands for both. In recent years there have also been sign of wild horses moving into Cave Valley as well as parts of the ranch that are not fenced. Wild horse access to the property must be controlled in order to preserve seeded areas and allow for regrowth.

The first component of this project is fencing to private parcels. Both fencing projects will be wildlife friendly (see attached document for design specifications) and will include wildlife jumps. The first an 80 acre parcel, Haggerty parcel. Haggerty needs three sides of a fence and a readjustment of the fourth side to meet wildlife friendly fence specifications. This will include eight strategically placed elk jumps, two cattle guards, and four gates for proper management. The second parcel is known as the Homestead parcel, which is 650 acres total and includes a large meadow. The Homestead parcel fence needs new fence construction due to elk damage as well as adjustment to also make it wildlife friendly.

The second phase of this project involves pinyon and juniper removal in partnership with the Great Basin Institute Conservation Corps Program (GBI). GBI has obtained a grant for \$50,000 from National Fish and Wildlife Foundation (NFWF). The requirements of this funding are, it needs to be spent on public land and it needs to have a 1:1 match of non-federal dollars. White Pine Conservation District (CD) is in a unique position to partner with GBI to continue ongoing work that NDOW is currently partnering with BLM in North Cave Valley. The CD in coordination with NDOW and BLM has identified 473 acres of PJ just west of Cave Valley Ranch on BLM land that are approved for removal. GBI would complete the PJ removal.

Ground crews contracted through the Great Basin Institute started work in the fall of 2020 but were delayed in completing the project due to Covid restrictions. We are anticipating completion by the end of FY23 when restrictions on field work are lifted.

An extension is requested to allow for project completion.

H22-01 2021-2022 Bighorn Sheep and Mountain Goat Capture, Transplant, Test and Remove, Monitoring, and Research Programs

Bighorn Sheep and Mountain Goat management and restoration work occurred on 14 projects.

We did not complete any bighorn translocations for either desert or California bighorn due to continued challenges of disease risk to capture source and/or release site bighorn populations from adjacent domestic sheep operations and active infections in adjacent bighorn herds. Also, many of the bighorn herds were severely challenged by drought conditions with individual body condition compromised and a capture for transplant would have put a great deal of stress on them.

We conducted Test and Remove Projects at various stages and level of intensity in the following bighorn sheep herds: Snowstorm Mountains (continued monitoring of lamb recruitment after removing the last chronic shedder of *Mycoplasma ovipneumoniae* (Movi) in early 2021); Leppy Hills (passive monitoring of lamb survival after removing 3 chronic shedders in 2020 and 2021; Badlands (removal of ewe and yearling ram that may have contacted domestic sheep at the base of the mountain and continued capture and testing of 4 bighorn early 2022); East Humboldt Range Mountain Goat (continued monitoring of kid recruitment in June and August after the death of hopefully the last chronic shedder remaining in the population prior to May 2021); Santa Rosa Range (2 captures in August 2021 and February 2022 involving 51 animals from all sub herds and removal of 4 chronic shedders; and Initiation of Test and Remove on the Nevada Test and Training Range (NTTR) in November 2021 involving 26 animals captured within the interior of the NTTR due to ram hunts still open on Stonewall and Bare Mountains; 2 chronic shedders were removed).

Herd Monitoring of recent pathogen spillovers was shifted from Area 18 herds to Mineral, Esmeralda, and Nye County desert bighorn herds that recently showed extremely low lamb survival on aerial survey Fall 2021. Concern for pathogen spillovers involving a new virulent Movi strain prompted captures and testing of 28 individuals from 7 herds (Monte Cristo Range, Volcanic Hills, Miller Mountain, Candelaria Hills, Garfield Hills, and Monte Cristo Mountains) and allow future lamb surveys to determine which herds have lambs dying of pneumonia. As part of this effort, captures and testing was also conducted in the San Antonio Mountains with fear that this herd is geographically positioned to allow Movi transmission to spread to several herds north and west from the NTTR bighorn herds located to the southeast.

A limited number of volunteers participated in ground lamb/kid surveys along with field biologists and summer technicians in various herds (primarily Santa Rosa Range, East Humboldt Range) part of a hopeful larger Citizen Science Project to engage many volunteers to help NDOW biologists detected lamb production, recruitment, and any clinical signs of pneumonia contracted by lambs or ewes.

No additional domestic sheep Movi testing was conducted involving UNR's Rafter 7 and Ted Borda's sheep bands beyond the initial effort in March and April 2021. Promising results from this round of tests of almost 400 animals showed less than 30% of the animals were positive for Movi infection. Meetings with Ted Borda, leading disease ecologists and local UNR professors in Spring 2022 resulted in developing a

research study plan to separate a flock of 400-600 domestic sheep and through a series of testing/removals and other management actions, attempt to clear the entire flock of Movi over a 3-year period.

A new drop net was not purchased in FY2022.



H22-02 Wildfire Related Restoration and Seed Purchase

The FY21 Heritage Restoration and Seed purchase dollars and associated matching funds contributed to support of completion of the following projects as well as support for associated post-treatment monitoring.

2021 Fire Rehab	Aerial/broadcast Seeding Acres	Drill Seeding Acres	Herbicide Acres
Pilot Peak; Railroad Springs- Dale Christianson	40		
Middle Rock Creek			
Izzenhood	310	310	

2019 Goose Spray			1,775
Dry Gulch Spray			2,300
Flat/Baldy Spray			2,043
Wally Spray			1,760
Big Butte Spray			800
Santa Reinia Little Antelope Spray			1,600
Black Point Spray			2,518
Argenta Spray			3,453
Sheep Creek Spray			320
Nelson Creek			695
Newpass Herbicide			2,000
Toiyabe Fingers	5,164	1,000	
TS Ranch- Dunphy USFWS	1,000		
Poodle Fire 2020_kochia augmentation	5,865		
Martin Fire_herbicide 18/kochia augmentation	2,483		
Martin Fire_Miligan Seeding_kochia augmentation	4,358		
Martin Fire_11 Mile Seeding_Kochia augmentation	3,500		
Osgood Fire Sagebrush Seeding	1,100		
Poeville Fire Research	20		
Tamarack	8,179		
Draw Fire spraying			4,180
Desert Creek Herbicide Treatment Seeding	15		
Virginia Mountains Greenstrip			2,674
Parsnip Fire (2016)	3,400		
2021 Totals	35,434	1,310	26,118

In the last 5 years, NDOW has implemented 505,436 acres of fire rehabilitation treatments at a cost of approximately 9.5 million dollars. We thank all of our partners in this effort!

We are still processing the last of our fire rehabilitation invoices and currently unsure if any funding will remain. As such, we would like to request an extension on these funds.

H22-03 Wildlife Water Development- Emergency Water Haul

The purpose of this project is to conduct emergency water hauling to wildlife water developments in central and southern Nevada. Emergency water hauling activities will provide supplemental water to guzzlers at high of going dry due to continued and unprecedented drought conditions in central and southern Nevada. Exceptional drought conditions during the summer and fall of 2020 resulted in

approximately 38 guzzlers across 20 mountain ranges requiring supplemental water. With the help of sportsman-conservation groups, NDOW hauled over 167,000 gallons of water via helicopter or water tender. This action prevented large-scale and widespread loss of bighorn sheep due to dehydration.

Unfortunately, the drought conditions leading to the 2020 emergency water hauls are largely continuing and without a significant shift in precipitation across southern Nevada, additional water hauls in the spring, summer, and fall of 2022 are possible.

Water level monitoring will continue throughout the late spring and summer to track water levels and understand when supplemental water may be necessary. If emergency water hauling is necessary, NDOW crews and/or contractors will use helicopters outfitted with specialized water buckets to transport water from a staging area to the guzzler. Staging areas are set-up in areas where a water tender has reasonable access and can fill temporary tanks and water pumpkins. The helicopter then dips water out of these pumpkins and transports it to the guzzler. Previously, the bucket would then be emptied on the guzzler's apron where it could fill the storage tanks. We have improved our methods by placing temporary fold-a-tanks adjacent to the guzzler's water storage tanks and running a direct line from the fold-a-tank to the guzzler. The helicopter now drops the water into the fold-a-tank. This minimizes water loss and ultimately reduces the number of trips necessary to fill a guzzler.

An extension is requested to allow for project completion.

H22-04 Izzenhood WMA Mule Deer Winter Habitat Restoration Project

The arid nature of the Izzenhood Front has made past efforts of post-fire rehabilitation and habitat restoration difficult and many questions have arisen about the approach to the restoration efforts in harsh sites – would treatment have been more successful if a higher application rate was used or would higher application result in more competition between seeded species?; can the removal of cheatgrass competition increase chances of success even if precipitation is low?; would the use of locally-collected sagebrush seed result in greater establishment of sagebrush from seed and/or transplants?

The southwest parcel of the Izzenhood WMA was treated with indaziflam in fall 2019 to control cheatgrass for multiple years and provide a release of established perennials at the site. Perennial vegetation was sparse, however, so this Heritage project aimed to drill seed desirable shrubs, grasses, and forbs below the zone of soil organic matter holding indaziflam, which is fairly experimental in the sense that NDOW had never used indaziflam previously or attempted to seed following treatment with the pre-emergent. This project was also used as an opportunity to test different application rates of the drill seed mix and aerially applied forage kochia, with 115 acres of the parcel seeded at a "typical" application rate used for post-fire rehabilitation and 195 acres of the parcel seeded with a higher than usual application rate for both the drill seed mix and the aerial mix. A surplus of Wyoming sagebrush seed collected for seedling growout from an existing stand adjacent to the site provided an additional opportunity to test application rates of Wyoming sagebrush seed from fixed-wing aircraft. Applying seed aerially to the indaziflam-treated parcel will also provide some insight into how long indaziflam actively prohibits seed germination in the surface soil and whether drill rows can provide an establishment site for broadcast species if indaziflam is still active in undisturbed soils. Some studies have suggested that seeding two years following indaziflam application can start to be successful. The sandy nature of the soils at this site are not predicted to have enough organic matter to sustain indaziflam very long and two years post-application is expected to be borderline sufficient for seeding.

In addition to the educational nature of this project, any success seen from restoration activities will benefit wintering mule deer, pronghorn antelope, and a variety of other non-game species that have historically inhabited the Izzenhood Front.

Expected accomplishments are:

- 310 acres drill-seeded with a shrub, grass, and forb mix in mid-November 2021
 - 195 acres drill-seeded with a “higher” application rate (6 lbs/ac; 33.85 PLS seeds/ft²)
 - 115 acres drill-seeded with a more typical application rate (8.6 lbs/ac; 59.31 PLS seeds/ft²)
- 310 acres aerial seeded with kochia and yarrow on Jan. 10, 2022
 - 195 acres aerial seeded with a “higher” application rate (0.3 lbs/ac kochia; 0.1 lbs/ac yarrow)
 - 115 acres aerial seeded with a more typical application rate (0.5 lbs/ac kochia; 0.1 lbs/ac yarrow)
- 50 acres aerial seeded with Wyoming sagebrush seed on Jan. 10, 2022 that was locally collected from sagebrush stand adjacent to project site
 - 25 acres aerial seeded with sagebrush a “higher” application rate (2 lbs/ac)
 - 25 acres aerial seeded with sagebrush at a typical application rate (1 lb/ac)
- 13,500 bareroot Wyoming sagebrush seedlings ordered for grow-out at Lucky Peak Nursery
- 13,500 bareroot whitestem rubber rabbitbrush seedlings ordered for grow-out at Lucky Peak Nursery

The remaining \$40,600.00 is slated for 13,500 Wyoming sagebrush and 13,500 white stem rubber rabbitbrush seedlings to be planted on the project site. Seed was acquired and sent to Lucky Peak Nursery in fall 2021 to be grown out into 27,000 seedlings during the summer of 2022, and planted on the project site in fall 2022 or spring 2023, depending on soil moisture conditions.

An extension is requested to allow for project completion.

H22-05 Area 10 Mule Deer Migration Corridor Habitat Enhancement

This project complements Heritage Project 21-11 targeting vegetation treatments in Area 10 to enhance mule deer habitat. The Proposed project is to conduct vegetation treatments in a minimum of 1,000 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. 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). Seeding will be considered as needed.

The BLM has completed NEPA and cultural clearances for the project, and NDOW plans on issuing a contract for the work early summer 2022. We anticipate the work being completed in FY23.

An extension is requested to allow for project completion.

H22-06 Pole Canyon Conservation Easement

The primary purpose of the Pole Canyon Conservation Easement is to purchase a conservation easement on the approximately 12,122.43 acres of the Pole Canyon Ranch. The property lies along the southern boundary of the United States Forest Service Wilderness, 30 miles east of Elko, Nevada in the East Humboldt Range. The property is in Hunt Unit 101, which is one of nine hunt units that make up Management Area 10, one of the State's priority mule deer herds. The 12,122.43-acre Pole Canyon Ranch is comprised some of the most productive mule deer habitat in the State of Nevada. The property spans from approximately 6,700 ft in elevation to over 10,500 ft. and contains the headwaters of Lemons Creek, Wright Creek, Secret Creek, Woods Creek, and the Franklin River. The expansive ranch serves as summer, winter, and transition range for a large proportion of the Unit 101 deer herd.

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 second largest of these sub-herds is the one that summers in the East Humboldt Mountains of Hunt Units 101, and then migrates through Hunt Unit 109 in route to winter ranges near Spruce Mountain in Hunt Unit 105.

There has been a holistic approach to protecting the seasonal habitats of the Area 10 deer herd and the Pole Canyon Conservation Easement is a crucial piece in the overall puzzle. With a large percentage of the summer range protected by Forest Service management and a majority of the utilized winter range being protected by BLM management, the Pole Canyon Conservation Easement will complete the long-term protection of the majority of the seasonal habitats and the migration corridor of the East Humboldt mule deer herd.

The Conservation Easement is a lengthy process with work ongoing. We expect the purchase to be completed in FY23.

An extension is requested to allow for project completion.

H22-07 Nelson Creek Mule Deer Habitat Improvement

In September 2021 approximately 700-acres in the North Tuscarora Mountains was aerially treated with preemergent herbicide. As seedling planting is the next phase of this project, 50,000 seedlings have been ordered from the Lucky Peak nursery where they will be mature enough to plant by fall of 2022 or spring 2023. Most if not all the seedlings will be planted utilizing contract labor.

In the implementation of the Nelson Creek Habitat Improvement Project, winter annual grass densities were significantly reduced in a 700-acre treatment area which should provide seedlings planted this fall a significant increase in resource availability and better potential for success into the future. In time, this treatment should develop into an even greater resource for a myriad of wildlife species and most notably mule deer.

A remote sensing modeling project is planned for the 2022 field season where approximately One-Million acres of range land will be mapped for multiple vegetation groups including annual grasses, perennial grasses, brush species, forage kochia, and bare ground. This modeling exercise will include this project area and help in determining success.

An extension is requested to allow for project completion.

H22-08 Smith Valley Habitat Restoration

The Smith Valley Habitat Restoration project aims to restore sagebrush and mountain shrub habitats that provide crucial summer and winter habitat and migration corridors for Management Area 12 (Area 12) mule deer; priority and general habitat for greater sage-grouse; summer/brood rearing habitat for dusky grouse; as well as summer and year-round habitat for Rocky Mountain elk. These areas, like many areas of sagebrush habitats, are experiencing an increase in the pinyon and juniper infilling caused by departure from natural disturbance regime. This infilling of pinyon and juniper has led to a decrease in the quality habitat for wildlife and has been identified as a limiting factor for mule deer and sage-grouse populations. Treatments would allow for the reduction in fuel loading, an increase of understory grass and forb species diversity and productivity, and improvement in overall wildlife habitat quality and wildlife diversity.

Work was delayed due to Covid related issues and BLM Clearances. BLM recently completed their clearances. A contract will be awarded soon with work occurring in FY 23.

An extension is requested to allow for project completion.

H22-09 Whistler Mountain Pinyon/Juniper Hand Thinning

The proposed project would thin or substantially remove encroaching pinyon pine and juniper trees from as much as 1,500 acres of important wildlife habitat located within the 3-Bars Project Area using a contracted hand thinning crew.

The 3 Bars Project Area encompasses approximately 725,000 acres throughout Eureka County, Nevada. The 3 Bars ecosystem is a shrub steppe ecosystem where land health has declined to state 5 of the United States Department of Agriculture's Ecological Site Characteristics State and Transition Model, which is a tree dominated state. Large amounts of wildlife habitat, particularly mountain big sagebrush sites are at risk of PJ encroachment within the 3 Bars Project Area. As trees begin to dominate a site, the shrub, grass, and forb understory is essentially lost or greatly reduced through competitive exclusion. Sage-grouse generally avoid areas largely dominated by trees and most sagebrush obligate species will avoid nonfunctioning sagebrush steppe ecosystems. Once an ecosystem has degraded to a tree dominated state, natural recovery without intervention is considered unlikely.

In an effort to enhance important shrub steppe habitat found within the 3 Bars Project Area, specifically around Whistler Mountain, up to 1,500 acres of pinyon/juniper will be hand thinned. Thinning pinyon/juniper from native sagebrush steppe habitat has shown to have a positive impact for a myriad of sagebrush obligate species including mule deer, pronghorn antelope and the many endemic bird species, including the sage thrasher and sage sparrow, that depend on healthy sage brush plant communities. As pinyon/juniper stands increase in size and density, the grass, forb and brush community start to die off due to the trees ability to out compete these fragile plant communities for water and sunlight. Once this threshold has been crossed it is very hard to bring it back to a productive sagebrush steppe ecosystem again.

Several spring sources including Hash Springs, Railroad Spring, Stinking Spring, and Trap Corral Spring will be targeted for thinning as well within the Whistler polygon. Due to pinyon-juniper encroachment around

these important areas, spring or riparian health has been compromised. Up to 17 acres will be manually thinned around each spring, specifically targeting Phase 1 and Phase 2 stands.

Work was delayed due to Covid related issues. A contract has been awarded with work occurring in FY23.

An extension is requested to allow for project completion.

H22-10 Argenta Rim Mule Deer Enhancement Project

In October of 2020, 1,920 acres was sprayed using a liquid form of Imazapic to control invasive non-native annuals on the Argenta Rim. This area was left fallow for one year before seeding occurred to allow the chemical to breakdown. This combination of “spray and seed” has shown great results in other treatment areas throughout the state.

In January of 2022, 1,920 acres was successfully aerial seeded using a wildlife seed mix that included sagebrush, Immigrant and Snowstorm kochia, Sandberg’s Bluegrass, Thickspike Wheatgrass, Western Yarrow and Annual Sunflower. The Argenta Rim is crucial winter range for the Area 6 and Area 15 mule deer and pronghorn herds. Much of this country has burned several times over the past 20 years and currently offers little to no forage or cover for wildlife.



Pre-2020 herbicide treatment with abundant annual grasses and little desirable forage for wildlife on crucial winter range.



Post herbicide treatment. Note the contrast in middle background of picture showing the effectiveness of Imazapic at controlling invasive annuals (left side) and untreated areas (right side).

H22-11 Optimizing management towards maximizing brood habitat for Greater Sage-grouse

The purpose of the project is to develop a tool to evaluate the response of Greater Sage-grouse populations to different management strategies directed towards maximizing brood rearing habitat.

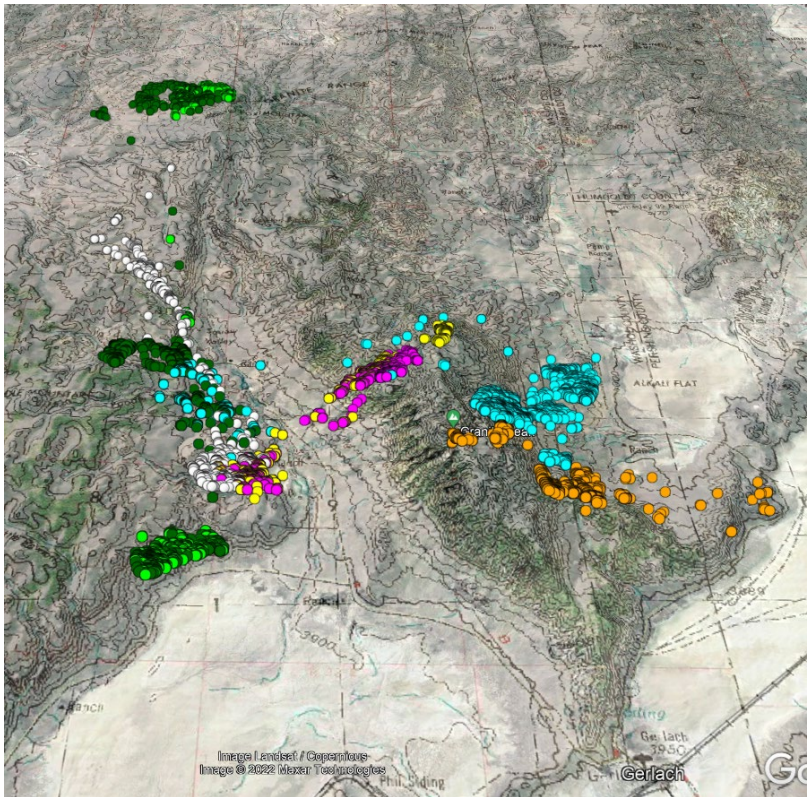
The University of Nevada-Reno (hereafter UNR) conducted research in Central Nevada from 2003-2012 with the goal of quantifying the effect of a transmission line on Greater Sage-grouse (*Centrocercus urophasianus*, hereafter sage-grouse) demography. Following a similar data collection protocol, UNR conducted a research project in Northern Nevada and Southern Oregon from 2013-2019 with the primary goal of assessing the effect of feral horses and livestock on Sage-grouse habitat and demographics. Both projects found fluctuations in annual weather patterns to be drivers of sage-grouse productivity (Blomberg et al 2012, Blomberg et al 2014, Gibson et al 2017, Street et al 2020), highlighting the need for long-term data to evaluate drivers that can be influenced through management. Using Bayesian hierarchical modeling, this project would leverage data collected over 16 years from both datasets to identify the primary drivers influencing sage-grouse populations and ultimately develop a flexible tool that the Nevada Department of Wildlife could use to evaluate management strategies and target areas for potential conservation actions.

To date, all modeling has been completed at this point, and the project is in the submission phases of peer reviewed publication. UNR is currently coding the forecasting tool into a user-friendly framework. Once completed, UNR will coordinate a consultation with the Nevada Department of Wildlife and the United States Fish and Wildlife Service for feedback. The final product will be delivered by the end of the calendar year 2022.

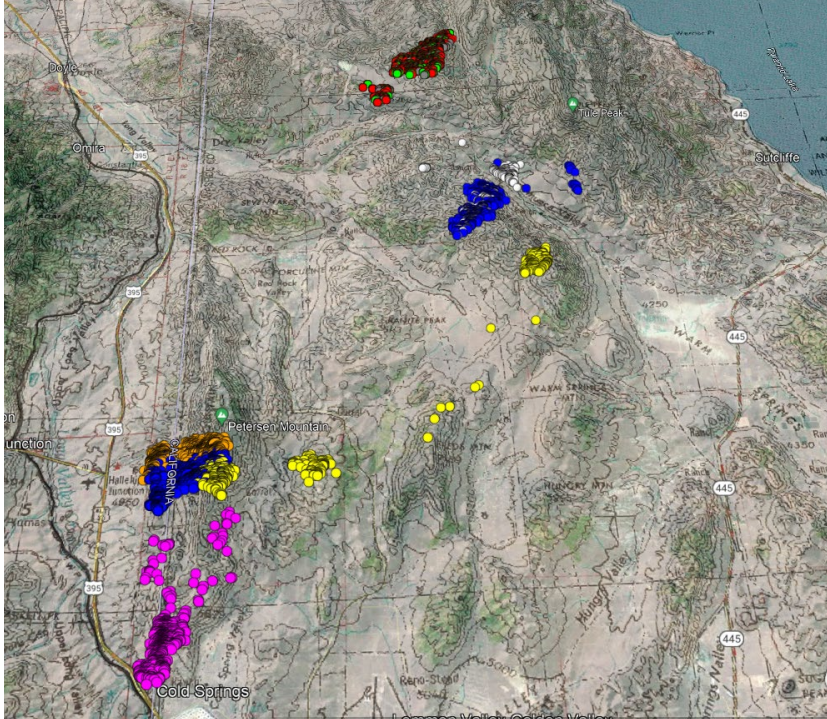
H22-12 Mule Deer radio-collaring study in Northwest Nevada

We captured, and radio collared 27 mule deer in northern Washoe Co. between November 19, 2021 to February 14, 2022. All animals were brought to basecamp and sampled for diseases, body condition, and teeth wear analysis.

This project primarily benefits mule deer in northern Washoe county but other species in this area such as songbirds and sage-grouse may benefit from the habitat projects that will be tailored to the information we gain from this radio collaring project. In total, we were able to successfully capture 27 mule deer in Hunt Units 021, 022, 013, 014, and 015 during the capture season of 2021-2022. We had hoped to capture an additional 23 mule deer in units 011, 012, and 033 but weather and scheduling prevented us from capturing in those units. The remaining collars will be deployed in FY 2023. Body condition was very poor from all animals captured (range 1.75 -2.5 out of a possible 5). We attempted to measure rump fat thickness for each animal captured but no subcutaneous fat was measurable on all animals captured. As of this report, only 1 mortality had occurred from the November capture period, which was a collared doe in Unit 021 that died from mountain lion predation in the Dogskin Mountains. Preliminary movements of all collared animals can be found in figures 1 & 2 (below).



Map of mule deer collared in Hunt Units 014-015. In total, 9 individuals were captured in in 014 however some animals moved to 015 shortly after capture.



Map of mule deer collared in Hunt Units 021 and 022 during November 19, 2021 through February 14, 2022. A total of 10 animals were captured between the two units, one mortality occurred in the Dogskin Mountains.

H22-13 Area 6 Elk Mortality Investigation

The purpose of this project is to investigate unknown elk mortalities occurring in Unit Hunts 062 and 067 of western Elko County. Periodic reports of carcasses of mature elk found on the southern edge of the Owyhee Desert in western Elko County have been received by the Department since, at least, 2009. Carcasses are often reported intact and evidence of predation is absent. Beginning in 2015, the Department increased monitoring efforts of expanding elk herds in northern Nevada to improve understanding of herd boundaries and interstate movement dynamics. During this initial effort, 5 radio-collars were deployed on cow elk in the Tuscarora Range (Hunt Unit 062). During May 2015, Department personnel investigated the mortality notification transmitted by 1 of those 5 cows. Due to rapid necrosis, the cause of death was inconclusive but consistent with previous carcass reports (i.e., intact carcass, no visible signs of predation, seemingly healthy). As of January 2020, 17 of 42 elk radio-collared in the southern Owyhee Desert, mostly comprising Hunt Units 062 and 067, have succumbed to this unknown source of mortality.

An extension is requested to allow for project completion.

H22-14 Moose Monitoring

The purpose of the project is to continue to develop a comprehensive understanding of movement patterns and population status of Shiras moose (*Alces alces shirasi*) in northern Nevada. Identify and protect critical moose habitats and movement corridors. Determine long-term viability of moose by identifying potential threats and opportunities for growth.

Since 2013, the Department has recorded more than 100 Shiras moose (*Alces alces shirasi*) sightings in northern Nevada. Observations are becoming more frequent and are distributed throughout northern Nevada including Paradise Valley in Humboldt County and the Ruby Mountains in Elko County. While dispersal behavior is often characteristic of young bulls, recent observations include mature bulls, cows, and calves indicating the fledgling moose population in Nevada is reproductively viable.

The purpose of the proposed project is to develop a comprehensive understanding of movement patterns and population status of moose in northern Nevada. Specific objectives include the evaluation of dispersal behavior, identification of movement corridors, the development of a map identifying potential and realized habitat in Nevada, and develop current and potential population estimates. Radio-collars deployed on young bulls and adult cows will be the primary mechanism for achieving project objectives.

During winter 2020, the Department successfully caught and released 4 female moose in northeast Nevada. An additional 3 moose were caught in winter 2021 (2 females, 1 male). Each moose was fitted with a GPS-enabled radio-collar capable of collecting 6 locations per day for 4 years enabling biologists for the Department to track real-time movements through the Global Iridium Satellite Network.

Moose prefer isolation and occur in low density, even in productive habitat. Capturing moose in Nevada has proved challenging. In 2020 and 2021, the Department supplemented capture efforts with aerial infrared (IR) surveys with mixed success, in addition to incidental aerial survey and citizen science observations.

An extension is requested to allow for project completion.

H22-15 Common Raven Monitoring

Common ravens (hereafter ravens) are a limiting factor for Greater sage-grouse nest success. Common raven populations have increased dramatically in the last decade. This increase combined with degrading Greater sage-grouse nesting and leking habitat has exacerbated common raven impacts on sage-grouse. Common ravens also prey on young Desert tortoise and other species of concern in Nevada.

The purpose of the project is to collect data that can be used to maximize the efficiency and effectiveness of common raven removal efforts in Nevada. We intended to hire 3 temporary technicians to conduct point counts pre- and post-raven removal; however, Covid hampered our ability to accomplish these activities to date. We are looking at utilizing other crews through subgrants to get this work accomplished. These data will provide the NDOW with accurate removal numbers, allowing for more educated management decisions and ensuring the NDOW can remove as many ravens as possible. Lethal removal can likely only be used to create temporary voids for Greater Sage-Grouse during certain times of the year (lekking and nesting seasons). Raven point count surveys conducted prior to USDA Wildlife Services removal efforts will provide the NDOW with real time raven density data, allowing for targeted yet economic removal. Post treatment surveys will allow the Department the highest level of inference on raven removal impacts.

An extension is requested to allow for project completion.

H22-16 Investigating Potential Limiting Factors Impacting Mule Deer in Northwest Nevada

Mule deer (*Odocoileus hemionus*) populations in northwest Nevada have experienced declining population trends. Consequently, both tag numbers and quality of hunt experiences for the user

community have also declined. So that we can improve the hunting experiences, we must first quantify the current population density of mule deer in this region and quantify the causes of the declining population trends. The purpose of this project is to determine the densities of mule deer, mountain lions (*Puma concolor*), and feral horses (*Equus ferus*) in Northwest Nevada, and to describe the spatial and temporal variation in these densities.

We contracted the work to place camera trap grids in strategic portions of Northwest Nevada. Using a series of trail camera grids, temporal and spatial changes in feral horse, mule deer, and mountain lion occurrence will be detected. Once detected, models will be built to estimate the density of each of these populations from via unmarked individuals. These data will greatly assist the NDOW to make management decisions pertaining to predator removal, habitat projects, and recommendations for feral horse roundups.

We propose to use a grid sampling approach for passive sampling of mule deer, mountain lion, and feral horse populations. The grid sampling approach will provide the most reliable means to precisely measure the density and distribution of these species in the study area. At each site we will deploy a Bushnell Trophy Cam camera trap. The camera traps will be positioned in a northerly direction to decrease false triggers caused by sunrise and sunset. The camera traps will be programmed to take three images per trigger with a time interval between triggers of 5 minutes. Previous research has shown that this time interval does not compromise detections of conspicuous species, but can drastically extend battery life and memory.

An extension is requested to allow for project completion.

H22-17 Milk Ranch Spring and Habitat Enhancement

The purpose of the project is to strategically cut and remove encroaching pinion and juniper within close proximity to (3) spring areas. The goal of the project would be to enhance spring flows for increased water availability and riparian zone productivity and overall amount of desired vegetation within the area.

The scope of the Milk Ranch Spring and Habitat Enhancement Project will be to manually sever encroaching pinion and juniper trees (PJ) utilizing hand crews, in relatively close proximity to three existing spring areas. The three Springs in the project area are Milk Ranch, Upper Rosebud and Lower Rosebud Spring (lower Rosebud is sometimes referred to as Antelope Spring). Leftover "slash" will be piled throughout the entire project area and burned at an appropriate time. The project is delayed due to Covid and clearance taking longer than expected.

An extension is requested to allow for project completion.

H22-18 Cave Valley Ranch Pinyon Juniper Removal

In 2018, this largescale project started with removal of 1,400 acres of pinyon and juniper for pile and burn by the land manager. This effort was implemented by the following partners, NDOW, Dream Tag, BLM, NRCS CIG (Conservation Innovation Grant), and DCNR Conservation Districts Program on behalf of White Pine County CD. Due to unseasonably dry weather, the piles needed to be masticated instead of burned in-order-to complete the project. A masticator was rented in October of 2020, but not all piles were

broken down. In 2021, funds were awarded to complete mastication of these PJ piles. Seed was also purchased with some of the 2018 and 2021 funds.

Greater Sage-grouse (GRSG) will benefit from decreased predator perch points and increased water availability from PJ removal. Forage for GRSG as well as other wildlife is also expected to increase as existing understory recovers and drill seeding takes place. This will also benefit deer and elk as they utilize Cave Valley Ranch private lands year-round for forage and seasonal habit.



H22-19 Survey and Maintenance of Existing Big Game Guzzlers

The purpose of this project is to conduct helicopter flights to remote guzzler sites to survey water levels and make minor repairs as necessary. Major repairs will be noted and completed at another time. Flights

in Wilderness and on the National Testing and Training Range will be in coordination with the applicable land management agencies. It is anticipated that additional survey flight will be needed towards the end of FY22 and early FY23.

An extension is requested to allow for project completion.

H22-20 Restoration, foraging ecology, and mating behavior in Greater Sage-Grouse (phase 2)

This project is phase 2 of a multiple phase project (21-18) exploring sage-grouse ecology as it pertains to fire and restoration work (see project 21-18 for greater discussion). For Phase 2, all but \$5,000 of the budget request is to support our 2022 spring field season, which began March 1 and will continue into late May. At the time of this update, we are only 2 weeks into a 10-week field season, so most of the Heritage funding has not yet been used. Because our field season ends near the completion date for this award, it is unlikely that all of our expenses will have been processed by our June 30, 2022 end date. Further, we remain unable to analyze our chemistry samples, due to the backlog of work at the Forbey lab that accumulated during the year of lockdown. Therefore, we have recently requested and received permission to direct funds originally budgeted for 2022 sample chemistry toward drone imagery, which we will collect with our Boise State U collaborators during this spring or summer; the collection, processing, and analysis of drone imagery will continue past the June 30, 2022, end date.

An extension is requested to allow for project completion.

H22-21 Quantifying the influence of feral horses on greater sage-grouse populations in Nevada”

The project purpose is to 1) assess the response of sage-grouse populations to wild horse habitat use at lek sites and late brood rearing habitat in Nevada, and 2) conduct a resource selection function (RSF) of lekking habitat using lek location data. The funding being requested with this proposal will be used to assist in completing this research project, which started in Fall 2019. Specifically, this funding will be used to complete the data analysis, statistical summary, and writing of a MS thesis and 3 peer-reviewed journal articles. This funding request fits into a larger project that has been supported with matching funds.

To date we have been able to complete the analysis of our project and produced both a thesis and manuscript (<https://scholarsarchive.byu.edu/etd/9182/>). We submitted this paper to the journal of Arid Environments, but will need additional analysis before it is accepted, which we anticipate occurring in the near future. Lastly, we plan to complete the resource selection function analysis. Remaining funds would be utilized for these additional efforts.

An extension is requested to allow for project completion.

H22-22 Licking Ranch WMA Land/Water Rights Purchase

The overall purpose of this project was to purchase ~1,568.08 acres along the Humboldt River northeast of Battle Mountain, Lander County, NV along with ~895.41 acre-feet of water rights. The property is mainly agricultural land used for cattle grazing and contains wet-meadow habitat that supports numerous species of migratory birds along with mule deer, wild turkeys, California quail and pronghorn antelope. In addition to the wildlife values, the public will benefit from opportunities for hunting, fishing, trapping, camping, nature study and wildlife viewing on the area. The purchase of additional property is vital to

NDOW's mission of managing, protecting and restoring habitat in the state and upon transfer of title will be added to NDOW's WMA System.

Heritage funding (\$330,000) was used to match other funds (\$1,540,000) to purchase the Licking Ranch and associated water rights.



Section 2:

Wildlife Heritage Proposals Submitted for State Fiscal Year 2023 Funding

Wildlife Heritage Proposals Submitted for FY23 Funding

(Total Wildlife Heritage funds available for FY23 projects: \$1,513,377.69)

<i>Proposals Submitted by NDOW Staff</i>				
Heritage Proposal Number	Project Title	Submitted By	FY23 Funding Request	Other Funding Sources
H23-01	Wildfire-Related Restoration and Seed Purchase	Mark Freese	\$150,000.00	Dream Tag (\$250,000), other NDOW Restoration Grant (\$300,000), NDOW Funds (\$875,000), NGO Donations (\$435,000)
H23-02	Butler Basin Meadow and Spring Habitat Improvement Project	Tracey Kipke	\$150,000.00	USFS RAC (\$100,000), NDOW Sage-grouse Grant (\$93,000), Navy REPI (\$300,000), Dream Tag (\$100,000)
H23-03	2022-2023 Bighorn Sheep Test and Remove and Monitoring	Mike Cox	\$148,500.00	NGO's (\$65,000), NDOW Game Grant (\$88,200), Volunteer In-Kind (\$24,000)
H23-04	Pole Canyon Conservation Easement	Madi Stout & Caleb McAdoo	\$100,000.00	NFWF (\$150,000), NDOW Industrial Development Fund (\$200,000), Dream Tag (\$120,000), NFWF RMEG (\$260,000), Heritage 2022 (\$200,000)
H23-05	2022-2023 Murdock Mountain Mule Deer Winter Habitat Enhancement Project*	Kari Huebner & Brittany Trimble	\$100,000.00	USFWS Partners Program (\$125,000), Mule Deer Foundation (\$40,000)
H23-06	Schell Egan Land Acquisition	Caleb McAdoo	\$250,000.00	Federal Funding (TBD)
H23-07	Nevada Spring Protection Project	Matt Maples	\$50,000.00	NDOW Water Development Grant (\$182,000)
H23-08	Warmwater Sportfish Stocking for Large Reservoir Drought Recovery and Urban Fishing Opportunity	Brad Bauman	\$125,168.00	NDOW Fisheries Grant (TBD)
H23-09	Morey Bench Mule Deer Crucial Winter Habitat Enhancement*	Hunter Burkett	\$40,000.00	BLM (\$150,000)
H23-10	Bullwhack Habitat Restoration*	Moira Kolada & Daniel Sallee	\$75,000.00	BLM (\$100,000)
H23-11	Corta Fire Habitat Improvement*	Matt Glenn	\$40,000.00	NDOW Restoration Grant (\$35,000), NDOW Habitat Conservation Fee (\$17,250), NDOW Upland Game Bird Stamp (\$17,250)
H23-12	Flint Spring Habitat Restoration	Moira Kolada	\$40,000.00	
H23-13	Toner Spring Habitat Restoration	Moira Kolada & Daniel Sallee	\$75,000.00	NDOW Habitat Conservation Fee (\$25,000)
NDOW Request Subtotal			\$1,343,668.00	\$4,251,700.00

Heritage Proposal Number	Project Title	Submitted By (and NDOW Monitor)	FY21 Funding Request	Other Funding Sources
H23-14	Survey and Maintenance of existing big game guzzlers	Clint Bentley	\$40,000.00	In-kind mileage (\$250)
H23-15	Duck Creek Aspen Restoration	Shane Boren & Jake Brunson	\$50,000.00	USFS RAC (\$130,000)
H23-16	The interaction between restoration, foraging ecology, and mating behavior in Greater Sage-Grouse (year 3)	Gail Patricelli	\$38,370.00	Unknown (\$69,375)
H23-17	White Pine County Mastication and Brush Treatments	Shane Boren & Jake Brunson	\$150,000.00	In-kind (\$4,541.60)
Total Heritage Funding Requests			\$1,622,038.00	\$4,455,866.60



BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Mark Freese, Habitat Division

Organization/Agency: Nevada Department of Wildlife

Date: February 14, 2022

Address: 6980 Sierra Center Parkway, Suite 120 **City:** Reno

State: NV **Zip Code:** 89511

Cell: **Phone:** 775-688-1542

Email: markfreese@ndow.org **Fax:** 775-688-1577

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

PROJECT INFORMATION

Project Title: Wildfire-Related Restoration and Seed Purchase

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: At locations across Nevada where wildfires burned during 2018-2023. This proposal will address funding needs for restoration resulting from both past and future fires; please see attached map.

Amount of Funds Requested from Heritage Account: \$150,000

Is a Project Map Attached? Yes No

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner: BLM (Lead/Agency Cooperator), FS (Lead/Agency Cooperator), NDF (Agency Cooperator), and Private Landowners.

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): Big Game, Diversity, Fish, General Habitat Improvement, Upland Game



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Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Sage-grouse, Mule Deer, Bighorn Sheep, Elk, LCT

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.): Sagebrush Conservation Initiative, Mule Deer Enhancement Program

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.): Fire Rehabilitation

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes

Purpose of the Project:

The primary goal of this project is to work with the Nevada BLM, FS, and private landowners to supplement and conduct fire rehabilitation efforts. Funds awarded for this project will be used to purchase seeds, apply seed, and conduct other seed bed preparation during the rehabilitation of fires across high priority sage grouse and mule deer habitat across the state of Nevada (see the attached map). The seeding and other activities will augment the amount and diversity of plant species that will be applied to key burned habitats on public and private lands across Nevada. Post-seeding monitoring will also be conducted to inform future management plans. As noted above, the seeding and other treatment efforts included in this project will be focused on high priority sage grouse and critical mule deer habitat but may include other areas to benefit other priority species.

Detailed Description of Project and Rationale (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.):

NDOW will work with the BLM, FS, and private landowners to apply seeds to high priority habitat within current and historic fires. Approximately 1,466,950 acres of habitat have burned in Nevada during the 2018-2021 period. The funding granted to BLM covers only a portion of the acres burned. BLM has requested that NDOW assist with securing additional funding to purchase seeds, apply seeds and conduct seed bed preparation to the remaining acreage and to partner with the BLM to leverage funding and contracting abilities so that the largest acreage and most effective treatments can be put on the ground.

NDOW is seeking funding to aid on the ground post-fire restoration projects in two main ways. First, NDOW can add important species to seed mixes. Second, NDOW can seed and provide additional restoration activities on areas the BLM may not have received funding for. NDOW can also monitor reseeded efforts through time under the Vegetation Health Assessment program. This monitoring helps track the effectiveness of seedings and can inform the need for future actions. As noted above, the seeding and other treatment efforts included in this project will be focused on high priority sage grouse and critical mule deer habitat.



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How Would this Project Help with “the protection, propagation, restoration, translocation, 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)

The wildfire restoration activities to be funded by this grant are focused largely on the rehabilitation of big game and sage-grouse habitat.

Project Schedule (describe key milestones for project implementation):

May - October 2022 - Coordinate with land management agencies and private landowners on fire suppression and fire rehabilitation plans (including fires from previous years), including post fire field assessments.

September 2022 - February 2023 - Seed and herbicide purchase will occur in late summer to early fall with herbicide seedbed preparation occurring in early fall. Seed application through aerial broadcasting or drilling will begin early fall and carry through to late winter with most application wrapping up by the end of February. Shrub plantings may occur in the fall to early spring depending on need and site availability.

September 2022 - August 2025 - Monitoring crews will collect pre and post treatment data based upon schedules determined by the restoration efforts at individual fires. It is difficult to predict precise timing and locations for the monitoring.

Does this Project have a Monitoring Plan and if so, please describe:

Fire rehabilitation projects will be monitored and assessed for project effectiveness and knowledge gained will be applied towards future projects in an adaptive management framework. At a minimum, projects will be visited by NDOW biologist to monitor and assess project outcomes. Products may include repeat photograph points, density measurements, field trip reports, etc. Projects may also be monitored with vegetation survey crews to collect vegetation community structure and composition data (Line-Point-Intercept, density and belt transects, soil assessment, etc.) on large and/or important projects. Monitoring products for the more extensive survey efforts include producing reports with photographs, statistical analysis, project summaries of what worked or didn't work well, etc.

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):

Includes public land and private properties for high priority fires across Nevada.

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



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

Wildfires in Nevada have had an enormously detrimental impact to big game and non-game wildlife habitat over recent decades. Heritage funding is key to providing real dollars for habitat restoration and to provide matching funds for many grant sources in efforts to restore game habitat.

Project Duration: one year two years three years more

Estimated Start Date: August 1, 2022

Estimated End Date: April 30, 2022



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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	\$ 150,000.00
2. Other Cash Funding Sources for this Project	
a. Dream Tag	\$ 250,000.00
b. NDOW's Federal Wildlife Habitat Restoration Grant	\$ 300,000.00
c. Other NDOW Funds (IDF, Grants, Mitigation, BLM AA)	\$ 875,000.00
d. NGO/Donations	\$ 435,000.00
e. Total Other Cash Funding Sources (lines a - d)	\$1,860,000.00
3. In-kind Services for this Project	
a. Volunteer Time	
b. Equipment	
c. Materials	
d.	
e.	
f.	
g.	
h. Total Donations /In-kind Services (lines a - g)	\$ -
4. Total Project Funding	\$ 2,010,000.00



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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 Purchase	\$ 50,000.00	\$ 1,000,000.00
b. Herbicide	\$ 10,000.00	\$ 150,000.00
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ 60,000.00	\$ 1,150,000.00
6. Miscellaneous Costs		
a. Seed and herbicide application	\$ 75,000.00	\$ 600,000.00
b. Treatment monitoring	\$ 15,000.00	\$ 110,000.00
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 90,000.00	\$ 710,000.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 150,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$1,860,000.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$2,010,000.00</u>	
(Note: total project funding from previous table must match total project costs)		



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Budget Narrative:

The budget above is an estimate of potential funding sources based primarily on funds received in FY 2022. Heritage Project funding may be used for seed and herbicide acquisition or application with not more than 15% going towards monitoring. These are our best estimates at this time but are subject to change depending upon the needs and priorities of the calendar year 2022 fire season.

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.):

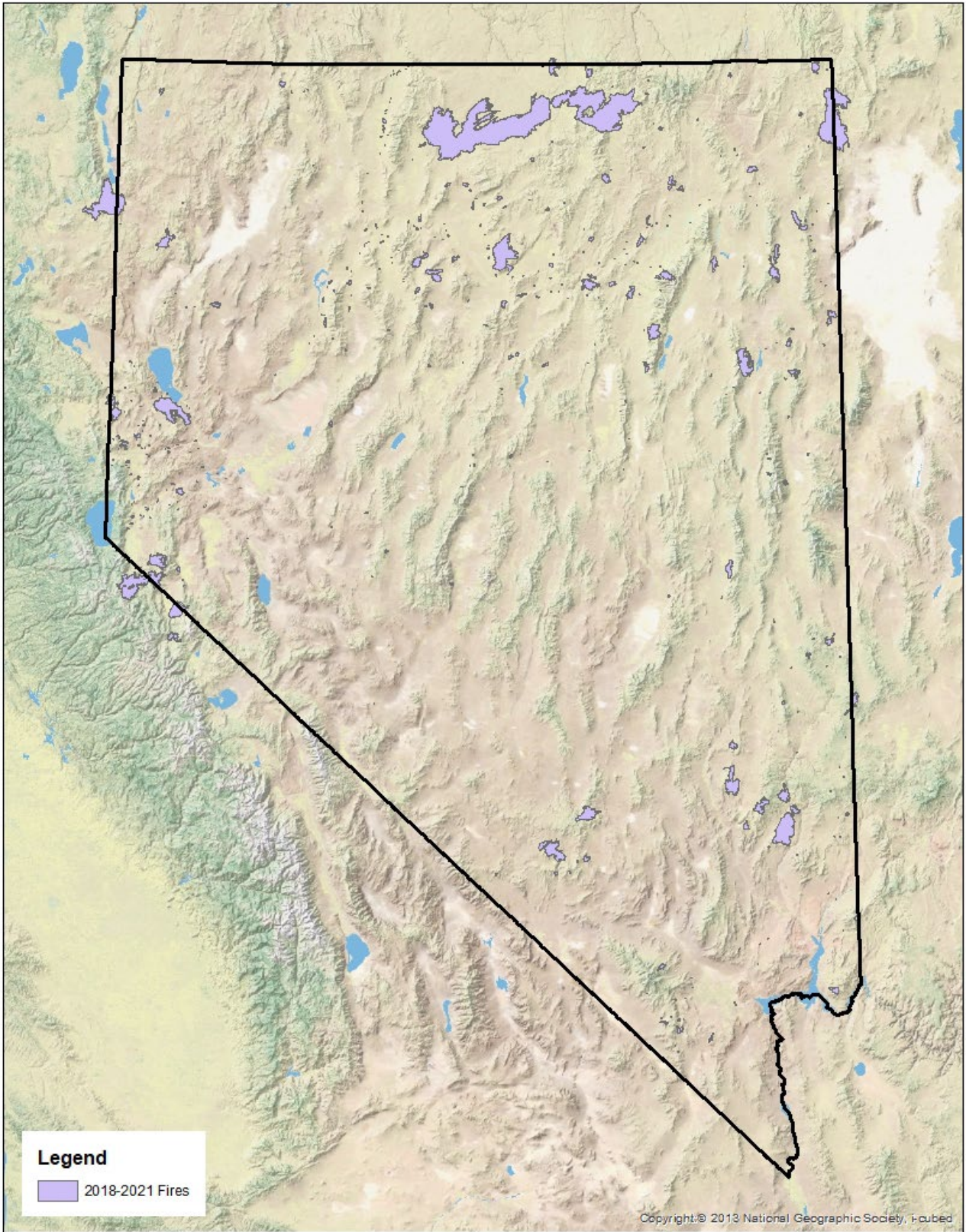
None anticipated

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

During all press releases, on-air productions and all other communications with the public, the Heritage program will be named as an important contributor toward wildfire rehabilitation across Nevada.

Authorizing Signature: 

Review Date 3/15/2022





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Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Tracy Kipke

Organization/Agency: Nevada Department of Wildlife

Date: 02/23/2022

Address: 3373 Pepper Lane

City: Las Vegas

State: Nevada

Zip Code: 89511

Cell:

Phone: (702) 290-8556

Email: tkipke@ndow.org

Fax:

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

PROJECT INFORMATION

Project Title: Butler Basin Meadow and Spring Habitat Improvement Project

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: 2023 and 2024

Project Location: Monitor Range, Nye County, Humboldt-Toiyabe National Forest, Austin-Tonopah Ranger District

Amount of Funds Requested from Heritage Account: \$150,000

Is a Project Map Attached? Yes No

(a map **must** include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Humboldt-Toiyabe National Forest, Austin-Tonopah Ranger District (Agency Cooperator), FS RAC, Dream Tag, Navy



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Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): Upland Game, Big Game, and Diversity

Select Priority Species (e.g. Sage-grouse, mule deer, etc.):

Greater Sage-Grouse, Mule Deer, Elk, and Migratory Bird Species

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

The Butler Basin project will complement the above Project Initiatives by protecting and enhancing the wet meadow component of the sagebrush landscape. It is a collaborative, active management project benefitting rangeland and watershed resources that are vital to conserving and protecting sagebrush dependent species.

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Riparian Enhancement

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes: Approximately 100 acres of important greater sage-grouse brood rearing habitat will be improved. Habitat for brood rearing in early spring is critical to brood survival. Wet meadows are typically forb-rich, with forbs contributing more to overall herbaceous cover than graminoids. The herbaceous understory attracts insects that provide a high-protein diet for broods.

Purpose of the Project:

The purpose of the Butler Basin project is to maintain, improve, and restore habitat quality for greater sage-grouse and other species (e.g. mule deer, elk, and migratory birds) that utilize high elevation meadows and springs. Past livestock grazing, contemporary excessive wild horse numbers and trespass livestock have caused habitat degradation within the exclosures, reducing the quality and availability of greater sage-grouse brood rearing habitat and important habitat for a multitude of wildlife species.

Detailed Description of Project and Rationale (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 meadow and spring sources will be protected by 1) removing three existing barbed wire and wood fences and replacing it with wildlife-friendly welded drill steel fence capable of withstanding pressure from horses, livestock, and snow; 2) constructing two new riparian fences; and 3) installing two ground level cattleguards at the Sagehen Spring exclosure and up to two ground level cattleguards at the Savory Creek exclosure.

NEPA Compliance: It is anticipated the notice to proceed for fence removal and replacement will be issued in the summer of 2022.



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How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

The Butler Basin project will directly benefit greater sage-grouse and other wildlife by protecting important brood rearing habitat by allowing passive, natural restoration to occur following fence enclosure installation.

Project Schedule (describe key milestones for project implementation):

Our preference is to initiate and complete the fence removal and replacement at Copenhagen Meadow, Copenhagen Headwater, Sagehen Spring and Savory Creek projects from July 1 to October 1, 2022. However, should road conditions restrict access to the project site and delay project completion, the projects could be completed during the following spring/summer. The Section 15 Meadow and Section 21 Meadow projects would be initiated and completed in spring/summer 2023-2024.

Does this Project have a Monitoring Plan and if so, please describe:

NDOW will contract the work and have contract monitors onsite while the project is being implemented. NDOW will also document habitat improvements through photographic monitoring and/or vegetation monitoring. We plan to have vegetation monitoring crews collect vegetation data pre and post project to document changes in the vegetation community. We will provide pre and post pictures and vegetation in an annual report.

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):

Site	Coordinates (Centroid UTM's 11 Datum NAD 1983)		Legal Description
	Easting	Northing	
Copenhagen Meadow	551412	4325360	T14N, R49E, Sec 13, 23 & 24
Copenhagen Headwater	551837	4325180	T14N, R49E, Sec 24
Sagehen Spring	548965	4324870	T14N, R49E, Sec 22
Savory Creek	549660	4324220	T14N, R49E, Sec 22 & 23
Section 15 Meadow	547973	4326540	T14N, R49E, Sec 15 & 16
Section 21 Meadow	546815	4324970	T14N, R49E, Sec 20 & 21

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



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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:

Funds from other entities such as the Forest Service RAC, NDOW Federal Grant dollars, Navy REPI, Dream Tag, and others will be used in conjunction with Heritage appropriated monies. Heritage funds provide a unique opportunity because they are eligible for 3:1 match. Heritage funds are necessary for this project otherwise meadow and spring habitat protection would be done at a reduced scale leaving riparian resources vulnerable to continued degradation and eventual riparian ecosystem loss.

Project Duration: one year two years three years more

Estimated Start Date: Summer 2022

Estimated End Date: Fall/Winter 2024



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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		\$ 150,000.00
2. Other Cash Funding Sources for this Project		
a. Forest Service RAC		\$ 100,000.00
b. NDOW Federal Sage-grouse Grant		\$ 93,000.00
c. Navy REPI Program		\$ 300,000.00
d. Dream Tag Funding		\$ 100,000.00
e. Total Other Cash Funding Sources (lines a - d)		\$ 593,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations /In-kind Services (lines a - g)		
4. Total Project Funding	\$	743,000.00



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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. Fence and Cattleguard Material	\$ 75,000.00	\$210,000.00
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ 75,000.00	\$ 210,000.00
6. Miscellaneous Costs		
a. Installation	\$ 75,000.00	\$ 325,000.00
b. Helicopter Slings		\$ 55,000.00
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 75,000.00	\$ 380,000.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 150,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ 590,000.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 740,000.00</u>	
(Note: total project funding from previous table must match total project costs)		



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Budget Narrative: U.S. Forest Service RAC funding of \$100,000 is secured. Navy REPI funding is likely, but in a holding pattern until the federal budget is approved. NDOW Federal Sage-grouse Grant dollars will be available FY 2023. Dream Tag funding has yet to be applied for. Additional funding sources will be sought depending upon needs. All project costs are estimated and bid request have not occurred. Project materials are estimated at ~\$8/linear foot based upon recent bids for other projects. Implementation is estimated at \$12/linear foot based upon similar projects.

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.):

Additional Heritage funding may be requested next fiscal year should funding from other entities be reduced.

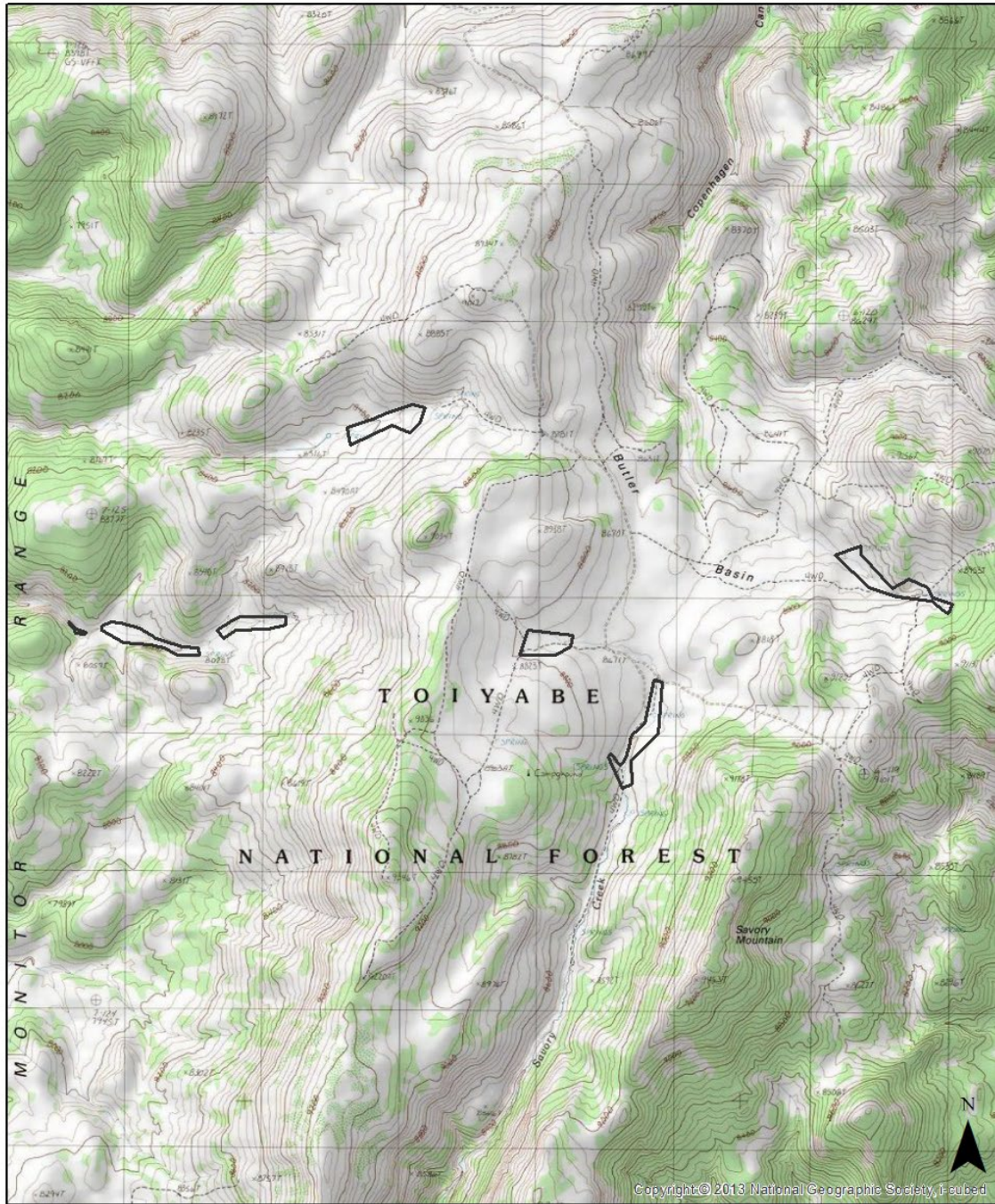
How Will You Give Credit to the Wildlife Heritage Account and Other Funding Sources?

The Wildlife Heritage Account and U.S. Forest Service will be acknowledged by the Department in any professional/educational presentations and meetings. Additionally, the Wildlife Heritage Account will be acknowledged by the Department in any professional publications (scientific journals) or any media outlets/publications (Department press releases, or news media outlets).

Authorizing Signature: 

Review Date 3/15/2022

Figure 1. Butler Basin Exclosures Overview Map





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Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Mike Cox

Organization/Agency: Nevada Department of Wildlife (NDOW)

Date: February 23, 2022

Address: 6980 Sierra Center Parkway, Ste 120 City: Reno

State: NV Zip Code: 89511

Cell: 775-240-1335 Phone: 775-688-1556

Email: mcox@ndow.org Fax:

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

PROJECT INFORMATION

Project Title: 2022-2023 Bighorn Sheep Test and Remove and Monitoring

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY2023

Project Location: Statewide

Amount of Funds Requested from Heritage Account: \$148,500

Is a Project Map Attached? Yes [X] No []

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner: NDOW and Mike Cox Lead; several non-agency NGO cooperators - NBU-Reno, NBU-Fallon, NBU-Midas, Elko Bighorns Unlimited, Nevada Muleys

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): Big Game

Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Bighorn Sheep - primarily California and Desert Bighorn Sheep



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Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.): No, but just a reminder that the majority of the proceeds of the Heritage Tags sold each year come from the sale of bighorn sheep specialty tags.

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.) Bighorn Herd Restoration - analogous to restoring habitat functionality and productivity after a wildfire, the same is true to this proposal to restore bighorn herds ravaged by deadly disease events with long-term residual effects of low lamb recruitment and population decline.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): No

Purpose of the Project:

Conduct 1 California bighorn (CBS) translocation involving helicopter netgun capture which includes conducting presampling for pathogen surveillance. Conduct ongoing Test and Remove Projects to remove chronic carriers of *Mycoplasma ovipneumoniae* (Movi) in the Santa Rosa Range CBS, Nevada Test and Training Range (NTTR) DBS, Bare Mountain DBS, Leppy Hills Rocky Mountain Bighorn Sheep (RMBS), and Badlands RMBS. May consider initiating Test and Remove projects for DBS in specific subherds on the NTTR/Stonewall Mountain and Bare Mountains.

Implement Citizen Science Project to conduct post-disease event lamb survival monitoring in various herds using volunteers to visit focal bighorn herds with GPS-Collared ewes to classify lamb numbers in nursery groups and document any clinical signs of pneumonia.

Continue monitoring (GPS collar download costs) all the previously deployed GPS collars on bighorn sheep and mountain goats for home range, foray/dispersal, lion predation, and potential for risk of contact with domestic sheep and goats.

Purchase new Drop Net materials and release mechanism to conduct drop net captures in desert bighorn herds.

Detailed Description of Project and Rationale (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.):

Potential California Bighorn Translocation for Winter 2022-2023, is augmentation of the Snowstorm Mountains. Various source stock herds will be considered that are the most appropriate for the release site with regards to matching terrain features, key pathogen presence, wilderness considerations, and population levels of source population. Pre-sampling for source herds would occur within a few weeks prior to capturing animals from source herds to confirm their health status and pathogen profiles are consistent with that of the release area.

Post Disease Event Lamb Survival Monitoring – Over the last several years, several bighorn herds have experienced pathogen spillovers and subsequent disease events involving minimal to substantial adult and lamb mortalities resulting from pneumonia. It is important that we document and learn how well, if at all, each herd's ability to recover from the event associated with key covariates such as pathogen strain, social structure, seasonal habitat use patterns, general forage conditions, and others. This monitoring project



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would be a “Citizen Science Project” using volunteers and our own field biologists to periodically visit nursery groups and observe and document: ewe and lamb numbers beginning about 1 month after the birth pulse through mid-summer. Observations would document clinical signs of pneumonia, the level of social interaction among ewes and lambs, and the lambs themselves that can contribute to pathogen transmission. Two main questions: are there still “carriers” of Movi in the herd and if so is the Movi strain virulent enough to continue to cause lambs to die. We are proposing to leverage volunteers to help with monitoring bighorn nursery groups to collect this information. We would advertise and solicit volunteers from conservation organizations and general public to travel to remote sites from March – August to conduct field observations. There could be as many as 10 bighorn herds to monitor with focal animals with active GPS collars that will hopefully provide observations to several ewes and lambs in a nursery group. Volunteers would be given training, datasheets, radio telemetry and optics, if needed, to conduct the monitoring. Volunteers would track their time and mileage. We may incentivize this effort through donations from bighorn conservation groups to assist with mileage costs.

Test and Remove Projects

WAFWA’s Wild Sheep Working Group and key professionals in the wild sheep arena have developed guidelines for conducting “Test and Remove”. The concept is that persistent/chronic carrier bighorn sheep exist in a herd with a novel pathogen strain of *Mycoplasma ovipneumoniae* (Movi). It is a “trigger” pathogen involved in west-wide pneumonia dieoffs in wild sheep that has decimated and even extirpated entire herds. Most bighorns that survive a disease event will mount an immune response and clear their Movi infection. They will have antibodies for Movi telling us they were previously exposed but are no longer shedding Movi. But a small percent of the adults will continue to have an active Movi infection yet look fine or asymptomatic. Each year when nursery groups form, a single chronic-shedding ewe can reinfect lambs and other adults in the nursery group which can cause lambs to die because their immune system is not yet fully developed until 4 months of age. Research and several trials conducted westwide have shown if you can identify the chronic shedders through capture and testing and remove them from the herd, you can greatly improve lamb/kid recruitment to recover herds that have struggled for years primarily from pneumonia-caused neonate deaths preventing herd growth. The following herds have ongoing or will have a Test and Remove project initiated in FY2023

1. Santa Rosa Range California bighorn herd had a Movi spillover event in 2003 and many of its subherds have struggled ever since. Collaborative research from 2016 -2019 with Oregon State University on the subherds in Oregon with connectivity to the Santa Rosa Range also showed high lamb mortality. In the last year of the study a chronic carrier ewe died of natural causes and the following year high lamb survival was documented in 1 subherd. Test and Remove was initiated in the Santa Rosa herd in January 2021 with strong efforts made in August 2021 and February 2022 to detect chronic shedders. Five ewes were removed in August and November 2021 confirmed or suspected to be chronic shedders. All subherds in the Santa Rosa Range as of February 2022 have had 20 – 80% of the adults tested for Movi. Oregon Department of Fish and Wildlife initiated in January 2022 their companion Test and Remove project on herds in Oregon that have known connectivity to the northern herds in the Santa Rosa Range. Efforts will continue in FY2023 with monitoring nursery groups in each subherd for production, clinical signs, and ultimately lamb recruitment in late summer. Continued testing of animals will occur in August 2022 and February 2023.
2. Leppy Hills Rocky Mountain bighorn sheep (RMBS) herd had its first Movi spillover event in 2010 and slowly declined since then due to chronic lamb mortality from pneumonia. Due to several domestic sheep operators adjacent to the NV/UT interstate herd and their desires to continue operations on public lands, little effort was made to restore the herd. The Wild & Wool documentary in 2020



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highlighted this herd and its sad situation and brought both NDOW and Utah Department of Wildlife Resources (UDWR) together to initiate an abridged Test and Remove. In August 2020, 4 ewes and 2 rams were darted and tested for Movi. Two rams and 1 adult ewe were PCR positive. Mature ram was killed by mountain lion just days after it was tested. Adult ewe was euthanized in January 2021 by capture crew and young ram was captured again and was indeterminant and not euthanized. An agreement with UDWR was made to remove Movi positive animals and continue to test animals through low-cost darting efforts. Another summer darting effort is proposed for August 2022 in the Leppy Hills to test additional animals.

3. Badlands RMBS herd first succumbed to pneumonia mortalities in 1999. It had reached 100 adults then and has slowly declined to below 35 in 2020. Formal testing started in January 2020 with 4 ewes and 1 ram collared and tested. In January 2021, 2 ewes and 1 ram were tested and in January and February 2022 3 ewes and 1 ram were collared and tested. This effort will opportunistically continue in search of a remaining chronic shedder in this small herd.
4. East Humboldt Range Mountain Goat herd experienced its first Movi pathogen spillover event in 2010, same time the sympatric RMBS herd experienced its severe dieoff. Though the mountain goats had minimal adult mortality, persistent poor kid recruitment has plagued the herd for a decade declining from 180 adults in 2009 to approximately 30 in 2020. Test and Remove Project was identified in 2018 but successful captures didn't happen until 7 mountain goats were captured and tested in January 2020; all had antibodies but none actively shedding Movi. On a positive note, 3 nannies (2 collared) were observed in late July 2020 with 3 kids and 2 yearlings. A comprehensive summer 2021 kid ground survey was conducted with high kid recruitment documented. Based on good kid recruitment in 2020 and 2021, it is speculated that the last remaining mountain goat chronic shedder died of natural causes. Plans are to continue kid recruitment ground surveys on remaining collared mountain goat nannies in summer 2022.
5. The Nevada Test and Training Range/Stonewall Mountain desert bighorn herd has been severely impacted by extremely low lamb survival since 2014 from chronic pneumonia with detection of novel "NTTR" Movi strain (unknown origin) and its population has declined 50% since then. A Test and Remove project for DBS on the NTTR/Stonewall Mountain was initiated in November 2021. Considerable coordination was conducted with Department of Defense liaisons to plan the effort with thankful support from the NTTR commander and environmental staff. Over a weekend in November 2021 when the range is less active, 7 rams and 19 ewes were captured, collared, and tested in the interior subherds of NTTR. One ewe was PCR positive and was euthanized the day of the capture. One ram also tested positive and was euthanized in January 2022. Plans are to conduct the second capture for testing in October 2022 to include Stonewall Mountain and return to capture additional unmarked animals in the interior NTTR subherds.
6. The Bare Mountains has had single digit lamb ratios for the last 4 years and has shown a 50% decline in the population since 2015 when it experienced its first pathogen spillover of Movi. The Bare Mountains based on collar data and ram harvest has known connectivity with the eastern subherd of the NTTR across Beatty Wash and into Timber Mountain and Thirsty Canyon area. Therefore, a Test and Remove Project will be initiated in concert with the one going on the NTTR and Stonewall Mountain, since they are all one large metapopulation.

The purchase new Drop Net materials and release mechanism will allow Game Division to reinstitute a summer drop net capture method in desert bighorn herds in southern Nevada to remove animals for use in translocations to other parts of the state.



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How Would this Project Help with “the protection, propagation, restoration, translocation, 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)

The many projects are directly involved with the propagation, restoration, translocation, and introduction of game mammals to the state of Nevada.

Project Schedule (describe key milestones for project implementation): There are multiple subprojects identified in this project proposal. Below is a list of them and general timeline for each:

- Bighorn Translocation - December 2022 - February 2023
- Lamb Survival Monitoring - July - September 2022 (previous FY2022 Heritage Grant supports this effort March - June 2022)
- Test and Remove Projects - Captures and Removal - August 2022 - March 2023; bighorn sheep lamb and mountain goat kid production/recruitment ground surveys - July - September 2022; purchase drop net prior to September 2022

Does this Project have a Monitoring Plan and if so, please describe:

Yes, for bighorn and mountain goat herds trying to recover from past disease events and as part of the Test and Remove, a big part of the proposal is monitoring the key metric of young/neonate recruitment. If bighorn translocation is conducted, monitoring of GPS collar data is a standard practice by local game biologist in concert with data management with Game Division staff. This will including promptly responding to mortalities caused by mountain lions and attempts to remove offending animal to protect the huge investment of translocated animals for first few years post-release.

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 involves multiple big game herds distributed widely across the state of Nevada on various public and private land jurisdictions.

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:

A sizeable part of the annual donations that support the Heritage Trust Account come from the sale and auction of bighorn sheep tags that are the direct result of the highly successful Nevada bighorn sheep restoration program. From the tremendous growth of the transplant herds, comes a huge responsibility to



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actively manage these herds. Just like the purchase of a large tract of land for long-term conservation and wildlife values, you must conduct annual operating and maintenance.

There is too much of a sportsmen's investment in past bighorn restoration projects to not continue to oversee responsible herd expansion and growth, better understand resource needs of the herds, minimize potential conflicts on public and private lands and lessen the probability of severe herd declines. This program has always been highly dependent on proceeds of special big game tags before and after the creation of the Heritage Trust Account. It only makes sense that the very same dollar that is generated from the success of the bighorn restoration program be used to maintain it.

By understanding bighorn sheep herd disease transmission processes, herd responses to diseases, and evaluating management alternatives to protect and restore herds to sustainable levels, NDOW can better advocate with local and federal land management agencies appropriate land conservation and protection for the long-term survival of these herds. Consumptive and nonconsumptive use of bighorn sheep will increase, benefiting not only the general public and sportsmen but local rural communities adjacent to these bighorn herds.

Project Duration: one year two years three years more

Estimated Start Date: July 1, 2022

Estimated End Date: June 30, 2023



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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		\$ 148,500.00
2. Other Cash Funding Sources for this Project		
a. Nevada Bighorn Conservation NGOs		\$ 65,000.00
b. Nevada Department of Wildlife		\$ 88,200.00
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 153,200.00
3. In-kind Services for this Project		
a. Volunteer Time		\$ 24,000.00
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations/In-kind Services (lines a - g)		\$ 24,000.00
4. Total Project Funding	\$	325,700.00

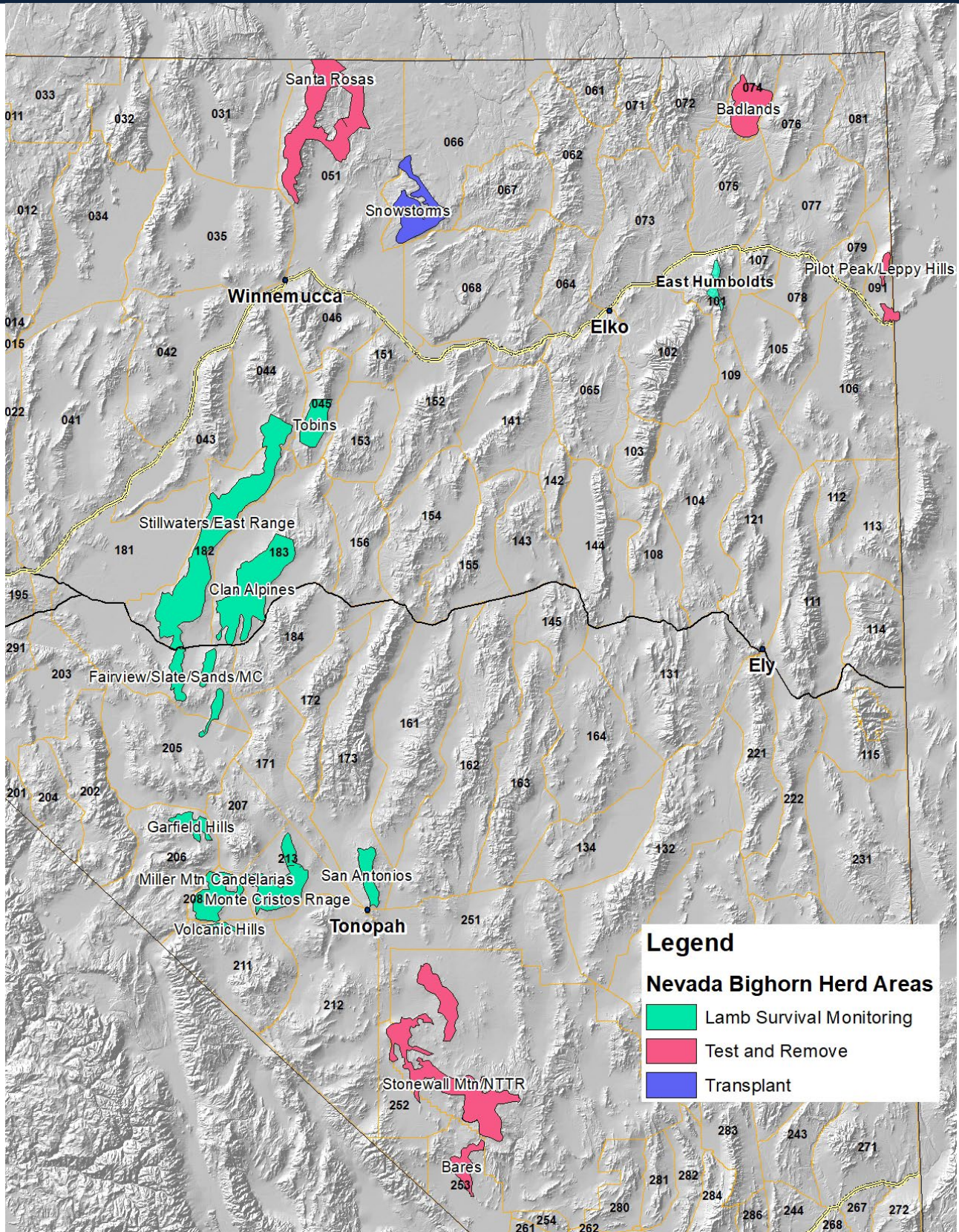


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PROJECT COSTS

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		\$ 5,610.00
c. Total Travel Costs (lines a & b)	\$ -	\$ 5,610.00
4. Equipment Items		
a. Real-time Biomeme PCR Unit		\$ 12,000.00
b. Drop Net		\$ 10,000.00
c.		
d. Total Equipment Costs (line a - c)	\$ -	\$ 22,000.00
5. Materials		
a. Spotting scopes & tripods		\$ 6,800.00
b. Telemetry gear		\$ 2,400.00
c. GPS Collars	\$ 52,000.00	\$ 12,000.00
d. VHF Collars	\$ 1,000.00	\$ 26,000.00
e. Total Material Costs (lines a - d)	\$ 53,000.00	\$ 47,200.00
6. Miscellaneous Costs		
a. Volunteer Labor		\$ 18,390.00
b. Satellite collar airtime		\$ 36,000.00
c. Helicopter Captures	\$ 88,500.00	\$ 48,000.00
d. Pathogen Testing	\$ 7,000.00	
e. Total Miscellaneous Costs (lines a - d)	\$ 95,500.00	\$ 102,390.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	\$ 148,500.00	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		\$ 177,200.00
9. Total Project Costs (add lines 7 & 8)	\$ 325,700.00	
(Note: total project funding from previous table must match total project costs)		





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Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Caleb McAdoo & Madi Stout

Organization/Agency: Nevada Department of Wildlife

Date: 01/10/2022

Address: 60 Youth Center Rd

City: Elko

State: NV

Zip Code: 89801

Cell: 775-388-1982

Phone: 775-777-2392

Email: mstout@ndow.org

Fax: N/A

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

PROJECT INFORMATION

Project Title: Pole Canyon Conservation Easement

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: Elko County

Amount of Funds Requested from Heritage Account: \$100,000.00

Is a Project Map Attached? Yes No

(a map **must** include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Rocky Mountain Elk Foundation- Easement holder

Eco Forest Management Incorporated - Landowner

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): The purchase of the Pole Canyon Conservation Easement would protect all the species listed above, but primarily it would protect and connect the Area 10 mule deer migration corridor.



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Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Mule Deer and Sage Grouse.

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

This project was developed prior to the Mule Deer Enhancement Program; however, it falls directly in line with the purpose of the program as the purchase of the Pole Canyon Conservation Easement will improve habitat connectivity with nearly 36,000 acres of neighboring U.S. Forest Service land, and East Humboldt Wilderness to BLM managed lands further south along the migration corridor. It encompasses critical mule deer habitat and serves as transition habitat for Nevada's largest mule deer herd, connecting critical seasonal habitats for thousands of migrating mule deer moving between their seasonal ranges. Though not directly involved in the Sagebrush Ecosystem Program, the landowner has enrolled the property in the Conservation Credit System.

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Land Acquisition.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No):

Yes.

Purpose of the Project:

The primary purpose of the Pole Canyon Conservation Easement is to purchase a conservation easement on the approximately 12,122.43 acres of the Pole Canyon Ranch. The property lies along the southern boundary of the United States Forest Service Wilderness, 30 miles east of Elko, Nevada in the East Humboldt Range. The property is in Hunt Unit 101, which is one of nine hunt units that make up Management Area 10, one of the State's priority mule deer herds. The 12,122.43-acre Pole Canyon Ranch is comprised some of the most productive mule deer habitat in the State of Nevada. The property spans from approximately 6,700 ft in elevation to over 10,500 ft. and contains the headwaters of Lemons Creek, Wright Creek, Secret Creek, Woods Creek, and the Franklin River. The expansive ranch serves as summer, winter, and transition range for a large proportion of the Unit 101 deer herd.

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 second largest of these sub-herds is the one that summers in the East Humboldt Mountains of Hunt Units 101, and then migrates through Hunt Unit 109 en route to winter ranges near Spruce Mountain in Hunt Unit 105. While not currently identified with updated GPS collars, over fifty years of ground and aerial surveys have documented this migratory movement. Further, collars have been purchased to deploy 30 GPS collars on mule deer in the winter of 2020-2021 to clearly define corridors, stopovers, and winter ranges along this highly important migration corridor for the Area 10 mule deer herd. The summer range is generally defined by highly productive mid-elevation shrub communities mixed with 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. Generally speaking, winter conditions force the deer out of their summer ranges in the late fall, where they begin their migration to wintering areas where they can more easily obtain forage and thermal cover thus reducing the energy they



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expend to survive (metabolic demands). This movement, often over 60 miles, is energetically costly and potentially dangerous as deer must navigate across State Route 229 and US 93. These two highway crossings are becoming increasingly more dangerous as traffic levels continue to increase. Topographically, the benches and foothills typically serve as the most optimal and least metabolically expensive route for the mule deer to travel to their end destination, be it summer or winter range.

There has been a holistic approach to protecting the seasonal habitats of the Area 10 deer herd and the Pole Canyon Conservation Easement is a crucial piece in the overall puzzle. With a large percentage of the summer range protected by Forest Service management and a majority of the utilized winter range being protected by BLM management, the Pole Canyon Conservation Easement will complete the long-term protection of the majority of the seasonal habitats and the migration corridor of the East Humboldt mule deer herd.

To further confirm the importance of the East Humboldt Range mule deer sub-herd to the overall health of Area 10 mule deer herd, look no further than the investments the Department has made at enhancing and protecting these extensive migratory corridors, the stopover sites, and the winter ranges in Unit 105 with the Spruce Mountain Restoration Project. The Spruce Mountain Restoration Project has been in the implementation stage since 2013, with a final treatment footprint of 10,000 acres to be completed in the winter of 2020-2021. The primary objective of this NEPA document was to restore, enhance, and rehabilitate BLM administered lands, with specific focus on the mule deer herd that summers within and adjacent to the targeted conservation easement.

To date, millions of dollars have been expended by 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 specific to the same mule deer that would utilize the Pole Canyon Ranch during the summer, winter and transition periods.

Detailed Description of Project and Rationale (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 Pole Canyon Conservation Easement will permanently protect 12,122.43 acres of private rangeland along the base of the East Humboldt mountains in northern Nevada. The proposed conservation easement will conserve habitat along a critical migratory corridor for the largest population of mule deer in Nevada and will serve as important sagebrush, grassland and riparian habitat for mule deer, bighorn sheep, mountain goat, and several species of conservation priority, including the greater sage-grouse. The proposed conservation easement will also improve habitat connectivity to neighboring U.S. Forest Service administered lands for game and non-game species movement across the landscape.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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.

Project Schedule (describe key milestones for project implementation):

Purchased the Pole Canyon Conservation Easement in summer of 2022.



BOARD OF WILDLIFE COMMISSIONERS

Does this Project have a Monitoring Plan and if so, please describe:

No, a monitoring plan is not applicable to this project.

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 30 miles east of Elko, Nevada, in the northern portion of the East Humboldt Range in Elko County, Nevada. The Figure 1(attached) shows the vicinity of proposed Project location. The Project Area is located on private lands surrounded by National Forest System (NFS) land in the Ruby Mountain Ranger District.

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, non-federal match is necessary to leverage these funds. NDOW has received a grant from the National Fish and Wildlife Foundation which requires 1:1 match. Heritage monies are ideally suited in scope and context to match towards grant funding and are ultimately the lynchpin to large-scale projects.

Project Duration: one year two years three years more

Estimated Start Date: 03/2021

Estimated End Date: 07/2023



BOARD OF WILDLIFE COMMISSIONERS

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		\$ 100,000.00
2. Other Cash Funding Sources for this Project		
a. NFWF - NDOW Submitted		\$ 150,000.00
b. Heritage FY22		\$ 200,000.00
c. IDF		\$ 180,000.00
d. Dream Tag		\$ 120,000.00
e. NFWF-RMEF		260,000.00
e. Total Other Cash Funding Sources (lines a - d)		\$ 910,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
h. Total Donations/In-kind Services (lines a - g)		\$ -
4. Total Project Funding		\$ 1,010,000.00
(add lines 1, 2e,3h)		

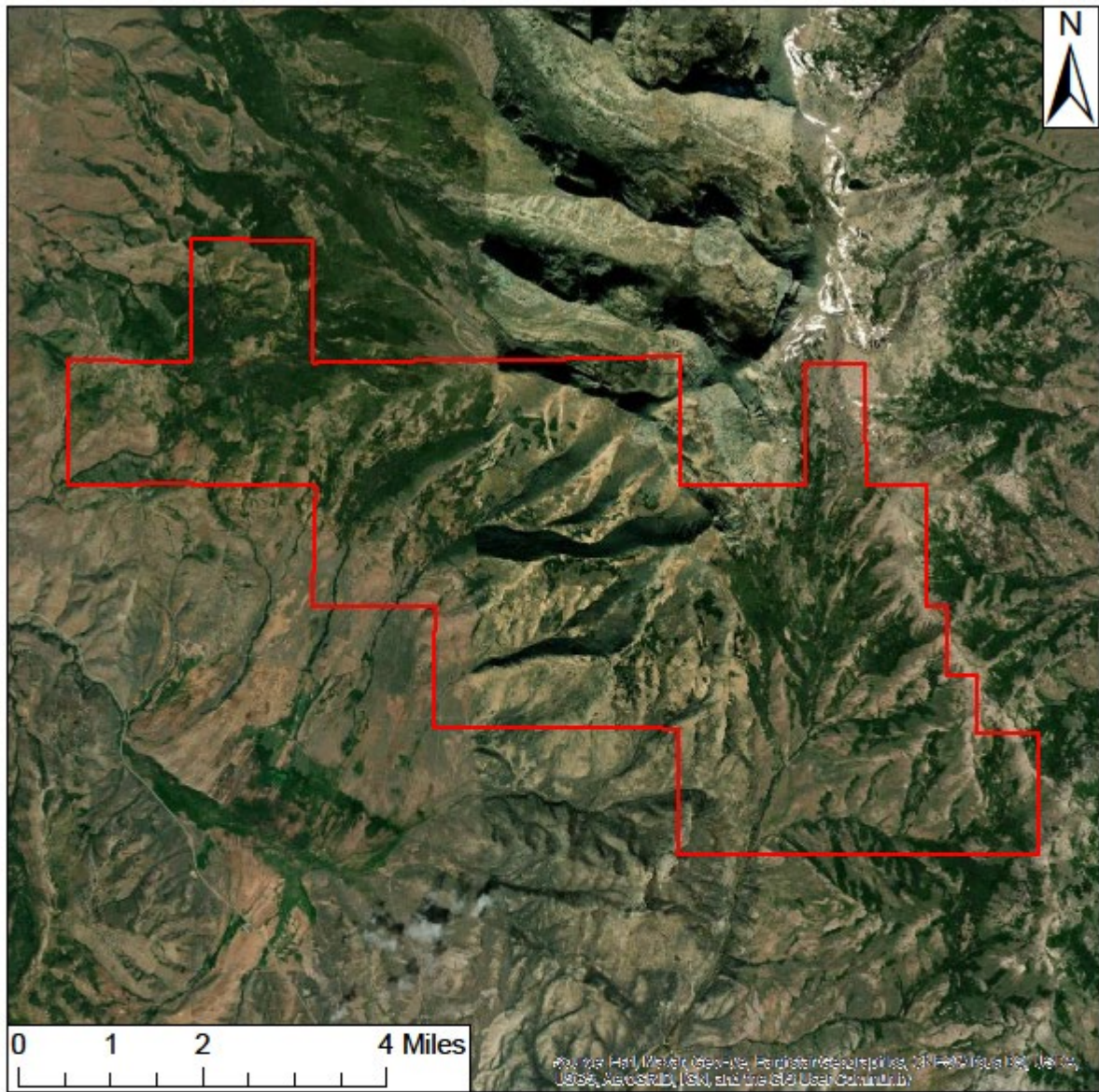


BOARD OF WILDLIFE COMMISSIONERS

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	\$ 100,000.00	\$ 910,000.00
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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a.		
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ -	\$ -
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	\$ 100,000.00	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		\$ 910,000.00
9. Total Project Costs (add lines 7 & 8)	\$1,010,000.00	
(Note: total project funding from previous table must match total project costs)		



Legend

 Pole Canyon Conservation Easement



Pole Canyon Conservation Easement

01/10/2022

Projection: UTM Zone 11 North, NAD83
 No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.





BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Kari Huebner & Brittany Trimble

Organization/Agency: Nevada Department of Wildlife

Date: 1/14/22

Address: 60 Youth Center Rd.

City: Elko

State: NV

Zip Code: 89801

Cell: 775-934-4330 (Kari)
775-762-9076 (Brittany)

Phone: 775-777-2324 (Kari)
775-777-2393 (Brittany)

Email: khuebner@ndow.org (Kari)
btrimble@ndow.org (Brittany)

Fax:

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

PROJECT INFORMATION

Project Title: 2022-2023 Murdock Mountain Mule Deer Winter Habitat Enhancement Project

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: Murdock Mountain, Winecup-Gamble Ranch private parcels - Management Unit 077

Amount of Funds Requested from Heritage Account: \$100,000

Is a Project Map Attached? Yes No

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

- Kari Huebner & Brittany Trimble (NDOW) - Implementation Leads
- Joe Glascock - Private Landowner
- Susan Abele (USFWS, filling in for Partner biologist) - Agency Cooperator/Funding Contributor
- Mule Deer Foundation - Non-Agency Cooperator/Funding Contributor



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Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game):

Priority resources include big game and upland game habitat but this project is also a general habitat improvement for sagebrush-mountain brush habitat by removing encroaching pinyon and juniper.

Select Priority Species (e.g. Sage-grouse, mule deer, etc.):

Mule Deer, Elk, and Sage-grouse.

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

This project was proposed by the Area 7 Mule Deer Enhancement Program (MDEP) and was approved by the MDEP Oversight Committee, ranked 8th overall. It was also identified by the Stewardship Alliance of Northeast Elko County (SANE) as a priority within the SANE Sagebrush Ecosystem Conservation Plan and targeted using the FIAT (Fire and Invasives Assessment Tool) to be included in the Oneil Basin PPA Environmental Assessment out of the Elko BLM District. While it is not specifically related to the Sagebrush Ecosystem Program or the Sagebrush Conservation Initiative, the removal of conifers in this area will benefit the understory sagebrush community and provide more intact sagebrush habitat for wildlife.

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Conifer removal is the primary project activity but this project will also reduce large woody fuels in the sagebrush-mountain brush community.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No):

Yes, this project is in Sage-grouse summer range.

Purpose of the Project:

This project will enhance mule deer and elk winter habitat by removing phase-one and -two Pinyon-Juniper (PJ) in important sagebrush-mountain brush community that provides crucial winter range habitat for the Management Area 7 (Area 7) mule deer herd on privately-owned parcels on Murdock Mountain. Eventually, adjacent parcels managed by the Bureau of Land Management (BLM) will be approved for additional phase-one and -two PJ removal in the O'Neil Basin PPA EA, which is currently under review.

The Area 7 deer population was estimated to be 11,100 deer in 2021, and through collar and survey data, it is estimated that approximately 30% of the overall population winters in the Murdock Mountain area. On mild winters, deer migrate more than 50 miles from summer ranges and will spend the entire winter on Murdock Mountain utilizing the mountain brush communities. When winter conditions are more severe the deer will continue to migrate further south into the Toano Mountains, where NDOW removed 3,258 acres of Pinyon-Juniper that were invading basins of brush communities in cooperation with the Elko District BLM in 2020. Although some conifers are important for thermal cover in harsh conditions, dense tree cover reduces the quality and quantity of important forage that deer rely upon to build up fat stores and maintain good body condition throughout the winter. Since the Area 7 deer herd that uses Murdock is either relying on it exclusively for winter range or as important transition range, this herd will greatly benefit from the removal of encroaching PJ in mountain brush habitat.



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Encroachment of late-successional species like Pinyon pine and various juniper species into sagebrush and mountain brush ecosystems is largely due to the anthropogenic suppression of wildfires, which has vastly altered the natural fire regime of brush ecosystems. Fire suppression in these ecological sites has allowed Pinyon and juniper to overtake sagebrush communities, resulting in decreased diversity of understory species composition, increased heavy fuel loads and consequently increasing the probability of catastrophic fires, decreased ecosystem water availability, and increased soil erosion; collectively diminishing habitat values for multiple wildlife species. While research has shown mutualistic relationships between some bird species (Clark's nutcracker, pinyon jay, etc.) and PJ woodlands, these species primarily rely on the older phase-three communities rather than the phase-one and phase-two communities being targeted with this project. Additionally, the reduction of forbs, grasses, and sagebrush with the encroachment of PJ and the increased presence of perches for predators makes these areas uninhabitable for sage-grouse, which have been shown to avoid Pinyon or juniper trees within 0.6 miles of a lek. While mule deer and elk can use the fringes of PJ woodlands for thermal cover, the habitat loss to various wildlife species due to the decrease in understory vegetation and ecosystem water caused by PJ encroachment far outweighs any gains in thermal cover for mule deer.

Encroachment of Pinyon and juniper into mountain brush ecosystems has occurred on Murdock Mountain in eastern Elko County, compromising mule deer winter range for the Area 7 herd. This project aims to remove phase-one and -two PJ on Murdock Mountain to allow for a release of the understory mountain brush vegetation this herd relies upon for forage in winter months. In addition to the mule deer herd that inhabits the project area, elk, sage-grouse, and other wildlife species will benefit from the removal of PJ and enhancement of the understory mountain brush community. Increased forage availability will improve body condition by increasing fat stores and overall health, thereby increasing recruitment and antler growth. The opportunity to effect positive change for wildlife in an area that is critical to multiple species should be extended precedence and importance for the State of Nevada and its sportsmen.

The NDOW established the Mule Deer Enhancement Program (MDEP) in 2021 with the intent of addressing threats to Nevada's mule deer populations with subcommittees representing each management area in the state. The Area 7 MDEP subcommittee is comprised of NDOW game and habitat biologists, Wildlife County Advisory Board members, local BLM staff, and members from local sportsmen organizations, livestock, and mining industries. In 2021, the Area 7 MDEP subcommittee identified PJ invasion as one of the top five limiting factors for the Area 7 mule deer herd and supported the removal of PJ on Murdock Mountain private parcels to start addressing this problem. The Commission's MDEP Oversight Committee reviewed MDEP project proposals from across the state and identified the Area 7 Murdock Mountain PJ removal project as one of high priority for the FY23 funding cycle.

By implementing this project, the Nevada Department of Wildlife will work in collaboration with the Winecup-Gamble Ranch, the U.S. Fish and Wildlife (USFWS) Partners Program, and Mule Deer Foundation to restore crucial winter range on Murdock Mountain, specifically within privately-owned property boundaries on the Winecup-Gamble Ranch. The importance of Murdock Mountain winter range habitat for the Area 7 mule deer herd cannot be overstated. Approximately 30 percent of the Area 7 mule deer herd utilizes Murdock Mountain winter habitat in any given year, which, when considering this is one of the largest mule deer herds in the state, only emphasizes the importance of this area.

Detailed Description of Project and Rationale (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 USFWS Partners Program secured \$125,000 in 2021 through Secretarial Order 3362 Migration Corridor funding for improving western big game winter range on privately-owned land on Murdock Mountain. The Area 7 MDEP subcommittee voted to expand on the treatable area, with approval by the Winecup-Gamble Ranch, and is seeking additional funding to enlarge the treatment footprint to have a larger impact for the Area 7 mule deer herd. Mule Deer Foundation supports the project and has agreed to donate an additional \$40,000. Publicly owned parcels managed by the BLM adjacent to the Winecup-Gamble Ranch privately-owned parcels are included in the Oneil PPA EA for PJ removal, which is expected to be approved in 2022 but treatment dates on BLM parcels are yet to be determined. Due to the limited timeframe in which the USFWS Secretarial Order 3362 funding needs to be spent and the availability of additional funds by MDF and cooperation of the landowner, it was decided that implementation of PJ thinning and mastication on private land should commence rather than waiting for the NEPA approval on the adjacent public land to begin the project.



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The proposed project is to implement vegetation treatments on approximately 1,300 acres of Pinyon-juniper woodlands within nine privately-owned parcels with the specific objectives of:

- Reversing the expansion of pinyon-juniper woodlands;
- Preventing catastrophic large-scale wildland fires resulting from the buildup of fuels and the conversion of fuel type based on prediction from historic assessments;
- Improving species composition and diversity;
- Reversing the decreasing quality of wildlife habitat and forage due to damage from wildfires and pinyon-juniper encroachment; and
- Preventing the establishment and expansion of invasive non-native species.

The 1,189 acres of proposed treatment in the nine private parcels mentioned above are shown in the map below with approximately 900 acres of phase-one PJ that will be hand-thinned and approximately 289 acres of phase-two PJ that will be masticated, depicted by color. The proposed vegetation treatments would be implemented individually or in combination depending on site conditions within the treatment polygons; if it is determined that a certain type of treatment is not appropriate for a site within a treatment polygon, those treatments would not be implemented on that site.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project meets the objectives in the Wildlife Heritage Program by restoring crucial habitats necessary for the sustainability of mule deer, elk, and sage-grouse populations.

Project Schedule (describe key milestones for project implementation):

A project scope of work would be developed following a final field tour with project cooperators to refine the treatment polygons and assess site access in summer 2022. The contract would go out to bid in the fall or winter when the risk of fire is low but before adverse conditions prevent site access to contractors. Hand-thinning and mastication may be done at different times but the project will be completed by summer 2023.

Does this Project have a Monitoring Plan and if so, please describe:

Monitoring will include repeated photo points that will be established in summer 2022 before project implementation and revisited annually to assess habitat changes over time. Photo points will be shared with all project cooperators so everyone has the opportunity to revisit and contribute to project monitoring.

Implementation of the project will be inspected throughout the implementation period and upon completion of implementation to ensure the Scope of Work was adhered to appropriately.

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 area can be most easily accessed by heading north on SR 233 towards Montello for approximately 8.5 miles. Once turning off at Cobre, you proceed north and east up Loray Wash until you reach the base of Murdock Mountain (approximately another 8.5 miles).

Murdock Mountain Private Land PJ Removal Parcels

Township	Range	Sections
T39N	R67E	35 & 36
T39N	R68E	31 & 33
T38N	R67E	1, 3, & 11
T38N	R68E	5 & 7



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

USFWS Partners Program Secretarial Order 3362 funding: \$125,000.00
Mule Deer Foundation Donation: \$40,000.00

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:

The remoteness, complexity, and labor-intensive nature of rangeland restoration in challenging climates makes this type of project difficult and expensive. Though this project will only cover nine parcels of privately-owned land, the area comprises important winter habitat for a large proportion of the state’s mule deer population. While funding sources outside of the Heritage Fund Account have contributed to this project, restoration activities are inherently costly and any contribution towards this habitat enhancement endeavor would contribute greatly towards the achievement of project objectives. Due to the expensive nature of the proposed project, the specific objectives identified within NRS 501.3575, and the support of the Nevada State Commission MDEP Oversight Committee, the project proponent feels that Heritage funding would be appropriately allocated for this project and would meet the intent of the Heritage Fund Account. It is the generosity of entities like the Heritage Committee that allow for informed and well-placed restoration efforts on Nevada’s rangelands to support healthy mule deer populations and encourage their growth.

Project Duration: one year two years three years more

Estimated Start Date: Fall 2022

Estimated End Date: Spring 2023



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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		\$ 100,000.00
2. Other Cash Funding Sources for this Project		
a. USFWS Partners Program S.O. 3362		\$ 125,000.00
b. Mule Deer Foundation		\$ 40,000.00
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 165,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations /In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 265,000.00	



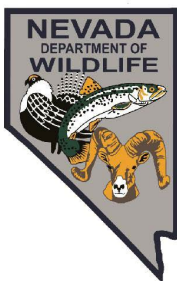
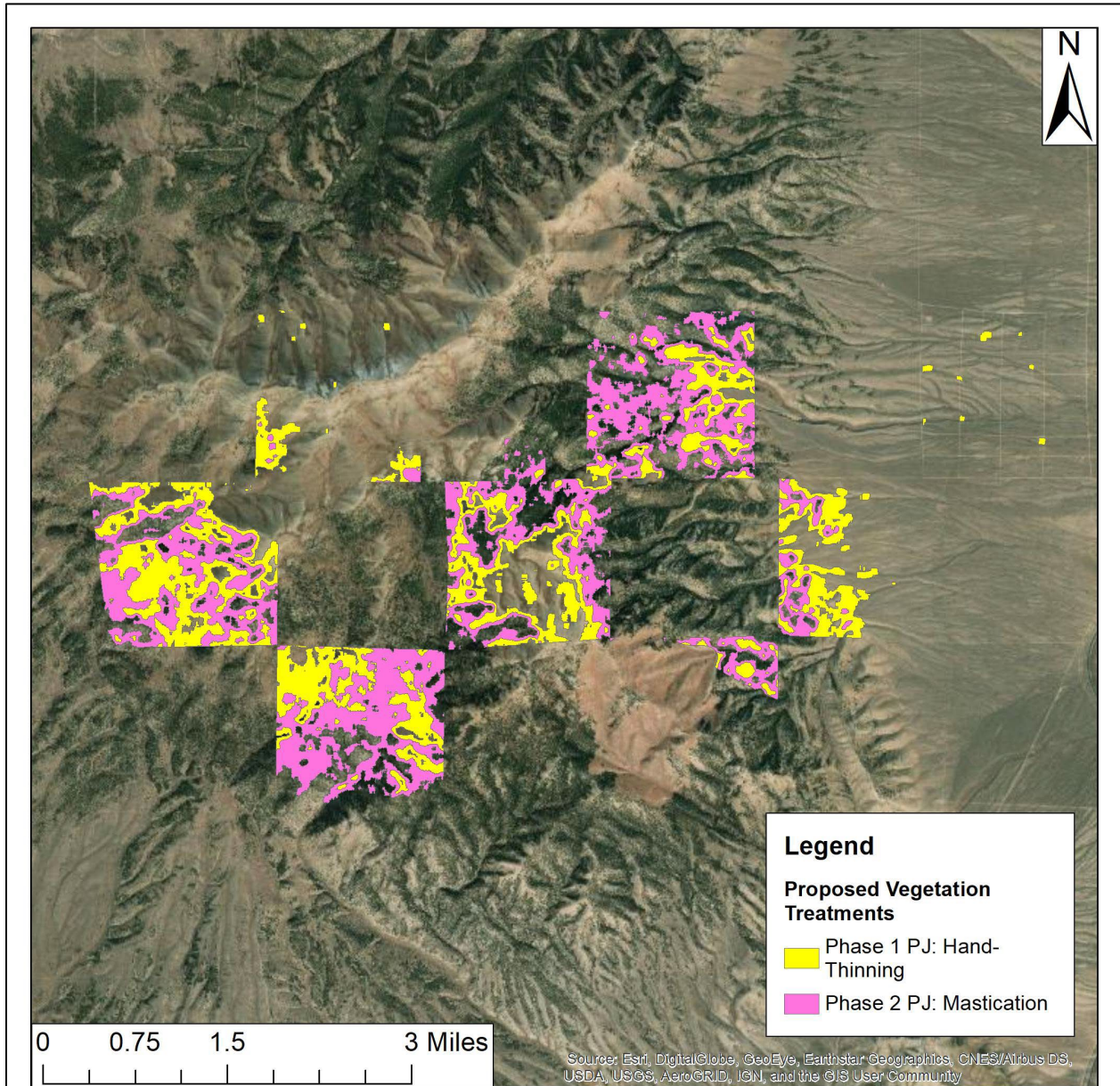
BOARD OF WILDLIFE COMMISSIONERS

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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a. Hand-Thinning	\$ 10,000.00	\$ 125,000.00
b. Mastication	\$ 90,000.00	\$ 40,000.00
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 100,000.00	\$ 165,000.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 100,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ 165,000.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 265,000.00</u>	
(Note: total project funding from previous table must match total project costs)		

Map:



Murdock Mountain Mule Deer Winter Range Habitat Enhancement Project

March 3, 2022

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.





BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Caleb McAdoo & Moira Kolada

Organization/Agency: Nevada Department of Wildlife

Date: 03/07/2022

Address: 1218 N. Alpha St

City: Ely

State: NV

Zip Code: 89301

Cell: 775-233-4798

Phone: 775-289-1655 ext 5

Email: mkolada@ndow.org

Fax: N/A

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

PROJECT INFORMATION

Project Title: Schell Egan Land Acquisition

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: White Pine County

Amount of Funds Requested from Heritage Account: \$250,000.00

Is a Project Map Attached? Yes No

(a map **must** include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Rocky Mountain Elk Foundation

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): The Schell Egan Land Acquisition would protect vital habitat for a variety of species with Schell and Egan Ranges, including crucial summer and transition ranges for mule deer and elk, as well as brood rearing habitat for sage-grouse and blue grouse.



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Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Mule Deer and Sage Grouse.

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

While this project was developed independently of the Mule Deer Enhancement Program, it does align with the goals and objectives of the program. The Schell Egan Land Acquisition will help protect crucial summer and transition range for mule deer by maintaining habitat connectivity with neighboring U.S. Forest Service and Bureau of Land Management land.

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Land Acquisition.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No):

Yes.

Purpose of the Project:

The primary purpose of the Schell Egan Land Acquisition is to purchase approximately 5,400 acres of land from Blue Diamond Ranches. The property is split between Duck Creek Basin in the Schell Mountains and the Egan Range. The property consists of inholdings with the U.S. Forest Service and Bureau of Land Management lands, located in White Pine County, Nevada. The property is within Hunt Units 111 and 221. The property consists mainly of high elevation mountain shrub habitat, several large aspen stands, and numerous seeps and springs. The property serves as crucial summer and transition habitat for mule deer and elk, brood rearing habitat for sage-grouse and blue grouse, and nesting habitat for a variety of migratory birds and raptors.

The Duck Creek Basin area is the core of the Area 11 mule deer population in White Pine County. NDOW consistently surveys over 1,000 mule deer on this portion of annual surveys. Overall, the mule deer in Duck Creek Basin do not have a long migration route, but rather the mule deer transition up and down in elevation depending on time of year and weather. Elevations range from approximately 6,400 feet to over 11,800 feet. This makes all of Duck Creek Basin Crucial Summer Range, Crucial Winter Range, or both in terms of habitat importance. The central portion of Duck Creek Basin is almost entirely private property. Over past years, portions of this private property have been subdivided into small ranchette type properties, breaking up continuity of intact habitat and fragmenting an otherwise continuous block of premier habitat. Despite the lack of long migration routes in this sub-herd, further development in this area could block transition range and routes, decreasing the overall population and productivity of this herd. The acquisition will secure these vital properties from development into the future.

The north Egan Range, in Area 22, has some of the most productive and important summer mule deer habitat in Area 22. Elevations range from 6,400 feet to over 10,900 feet in elevation. Most of the upper elevations, over 7,500 feet, are highly productive summer range for mule deer. Mule deer in this area have an elevational migration and a long north and south migration. Some mule deer will migrate to lower elevations around the Lund area, but most mule deer migrate upwards of 70 miles to winter in the south end of Area 22.



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The vegetation communities within the property are generally defined by highly productive mid-elevation shrub communities mixed with aspen and mahogany stands at the lower elevations are comprised of sage-steppe vegetation, with varying degrees of pinyon/juniper encroachment. The property has been the subject of several ideas for development ranging from development of ranchettes, summer cabins, and developed recreation such as a ski resort. Given that the property consists of inholdings within the FS and BLM the acquisition of the property would allow the protection of important season habitats and transitions ranges for mule deer and other wildlife species.

Detailed Description of Project and Rationale (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 Schell Egan Land Acquisition would permanently protect approximately 5,400 acres of private land within the Schell and Egan Mountain Ranges. The proposed land acquisition will allow conservation of crucial mule deer and elk summer and transition habitat and will serve as important sagebrush, grassland and riparian habitat for mule deer, elk, and several species of conservation priority, including the greater sage-grouse.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project will allow the protection of core mule deer in White Pine County. 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.

Project Schedule (describe key milestones for project implementation):

Yellow book appraisal to be completed in May of 2022.
 Final review appraisal anticipated by July of 2022.
 Due diligence period will run from July to October.
 Projected closing date will be October, 2002

Does this Project have a Monitoring Plan and if so, please describe:

No, a monitoring plan is not applicable to this project.

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 9 miles east (Schell Range) and 13 miles south (Egan Rang) of Ely, Nevada, in White Pine County, Nevada. The Figure 1(attached) shows the vicinity of proposed Project location. The Project Area is located on private lands surrounded by National Forest System (NFS) land in the Humboldt Toiyabe Ranger District and Bureau of Land Management (BLM), Bristlecone Field Office.



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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, non-federal match is necessary to leverage these funds. NDOW has received a grant from the National Fish and Wildlife Foundation which requires 1:1 match. Heritage monies are ideally suited in scope and context to match towards grant funding and are ultimately the lynchpin to large-scale projects.

Project Duration: one year two years three years more

Estimated Start Date: 03/2021

Estimated End Date: 07/2023



BOARD OF WILDLIFE COMMISSIONERS

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			\$ 250,000.00
2. Other Cash Funding Sources for this Project			
a. Federal funding (T.B.D. ~\$4,500,000.00)			
b.			
c.			
d.			
e.			
F. Total Other Cash Funding Sources (lines a - d)			\$ -
3. In-kind Services for this Project			
a. Volunteer Time			
b. Equipment			
c. Materials			
h. Total Donations/In-kind Services (lines a - g)			\$ -
4. Total Project Funding		\$ 250,000.00	
(add lines 1, 2e,3h)			



BOARD OF WILDLIFE COMMISSIONERS

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	\$ 250,000.00	\$ 4,500,000.00
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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a.		
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ -	\$ -
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 250,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$4,500,000.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$4,750,000.00</u>	
(Note: total project funding from previous table must match total project costs)		



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Budget Narrative:

All funds to be used to purchase the Schell Egan Land Acquisition.

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.):

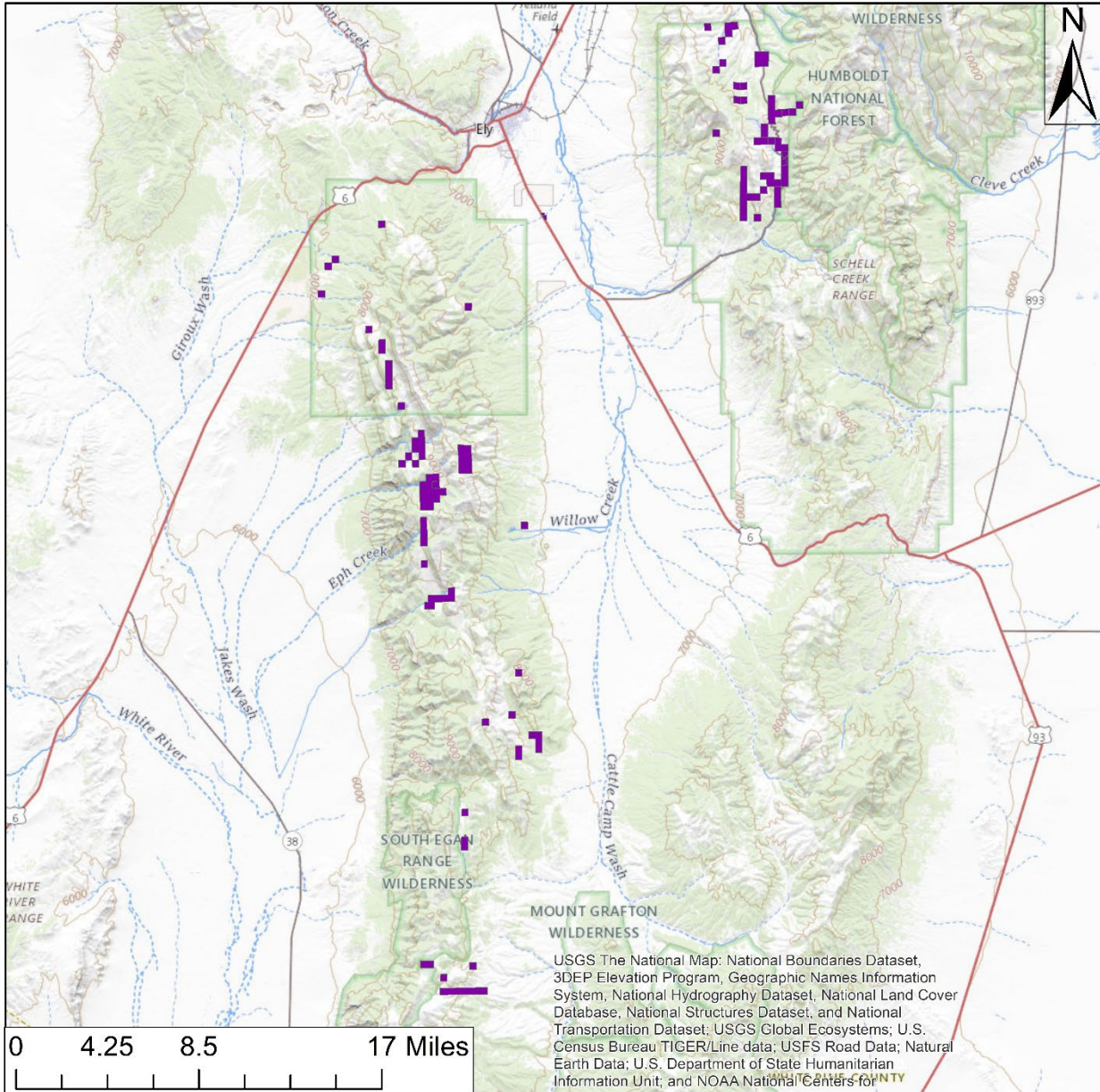
No additional funding will be necessary for this project.

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:  _____

Review Date 3/15/2022



Schell Egan Land Acquisition

Legend

 Schell Egan Land Acquisition

March 7, 2022
 Projection: UTM Zone 11 North, NAD83
 No warranty is made as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Matt Maples

Organization/Agency: Nevada Department of Wildlife

Date: March 1, 2022

Address: 6980 Sierra Center Parkway City: Reno

State: Nevada Zip Code: 89511

Cell: 775-771-9135 Phone: 775-688-1568

Email: mmaples@ndow.org Fax:

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

PROJECT INFORMATION

Project Title: Nevada Spring Protection Project

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY 2023

Project Location: Statewide

Amount of Funds Requested from Heritage Account: \$50,000

Is a Project Map Attached? Yes No

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Implementation Lead: Matt Maples, Nevada Department of Wildlife, Habitat Division
Agency Cooperator: Katie Andrlle, Nevada Department of Wildlife, Habitat Division
Agency Cooperator: Caleb McAdoo, Nevada Department of Wildlife, Habitat Division
Agency Cooperator: Sam Hughes, Nevada Department of Wildlife, Habitat Division

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): Big Game, Upland Game



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Select Priority Species (e.g. Sage-grouse, mule deer, etc.):
Mule deer, Greater sage-grouse, elk, pronghorn

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):
No

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Habitat Restoration and Rehabilitation: Riparian, Meadow, Spring Restoration
Objectives: To install fencing that allows for protection and recovery of natural water sources to increase water availability for wildlife.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): YES

Purpose of the Project:

The purpose of this project is to protect natural water sources from over-utilization by wild horses and/or livestock. Protecting natural water sources will lead to improved riparian conditions, protection spring heads, improved ecological function, and increased water supply for wildlife and other species.

Detailed Description of Project and Rationale (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.):

Spring protection will be achieved by installing exclusionary fencing around the spring source, and when necessary, installing water development structures to provide water outside the fence for use by all species. Spring fencing materials will either be pipe-rail, bison fence, or welded drill-stem. Selection of fencing materials will be determined based on site specific conditions. Nevada Department of Wildlife biologists have identified approximately ten spring sites that could be fenced in FY2023 and this project will provide additional funding to fence approximately 2-3 of these sites. The actual spring sites will be determined early in FY2023 and will be based on wildlife priority, clearance status from the BLM, and availability of materials and labor to complete the project. NDOW's water development program will provide additional funding assistance for this project.

How Would this Project Help with "the protection, propagation, restoration, transplantation, 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)

This project meets the mission objectives of the Wildlife Heritage Account by improving habitat, protecting spring sources, and enhancing populations of mule deer, antelope, and sage-grouse in Nevada. The status and condition of springs are critical for many species of wildlife by providing an essential source of water and crucial riparian habitat values.



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Project Schedule (describe key milestones for project implementation):

Spring/Summer 2023 - Identify spring sites for protection projects
Summer/Fall 2023 & Summer 2024 - Construct fences

Spring 2024 - Identify spring sites for protection projects
Summer/Fall 2024 - Construct fences

Does this Project have a Monitoring Plan and if so, please describe:

Construction of the fences and water development features (if needed) will be monitored to ensure compliance with any contracts that are issued for fence construction. Spring protection projects will be monitored over time to ensure they are functioning as designed and to determine maintenance needs. Future maintenance needs will be covered by NDOW’s Water Development Program.

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):

Specific project areas have not yet been finalized; however, the proposed project would occur primarily in Northern and Central Nevada.

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:

The Nevada Department of Wildlife is expanding its efforts to protect natural water sources for the benefit of wildlife. Heritage funding is needed to increase the number of priority projects that can be completed over the next two years.

Project Duration: one year two years three years more

Estimated Start Date: July 1, 2022

Estimated End Date: June 30, 2024



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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. Water Development Program		\$ 180,000.00
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 182,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations/In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$	232,000.00



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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. Fence materials		\$ 25,000.00
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ 25,000.00
6. Miscellaneous Costs		
a. Contracts (Labor & Materials)	\$ 50,000.00	\$ 130,000.00
b. Flight time - slignin		\$ 27,000.00
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 50,000.00	\$ 157,000.00
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)		\$ 182,000.00
9. Total Project Costs (add lines 7 & 8)	\$ 232,000.00	
(Note: total project funding from previous table must match total project costs)		



BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Brad Bauman

Organization/Agency: Nevada Department of Wildlife

Date: 2/15/2022

Address: 705 E 4th Street

City: Winnemucca

State: Nevada

Zip Code: 89445

Cell: 775-560-7082

Phone: 775-623-6565 ext 105

Email: bbauman@ndow.org

Fax: _____

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

PROJECT INFORMATION

Project Title:
Warmwater Sportfish Stocking for Large Reservoir Drought Recovery and Urban Fishing Opportunity

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed:
FY2023

Project Location:
Statewide Reservoirs and Urban Ponds

Amount of Funds Requested from Heritage Account: \$125,168

Is a Project Map Attached? Yes No

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):
Brad Bauman (Project Manager)
Agency Cooperators: Brandon Senger (Southern Region Fisheries Supervisor), Cody Byrne (Eastern Region Fisheries Supervisor), Travis Hawks, (Western Region Fisheries Supervisor).



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Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): Fish: Warmwater Sportfish such as Wiper (White Bass x Striped Bass Hybrid), Walleye, Channel Catfish, Largemouth Bass and Bluegill

Select Priority Species (e.g. Sage-grouse, mule deer, etc.):

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

No

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Monitoring of warmwater sportfish populations and angler use occurs annually throughout the State

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): No

Purpose of the Project: To enhance recreational sport fish populations and provide increased angling opportunity and satisfaction to Nevada anglers. Wipers, Channel Catfish, Largemouth Bass, Bluegill and other warmwater sportfish are a highly utilized resource by Nevada anglers, particularly in waters that are too warm for trout stocking. Project funding will allow for the purchase of warmwater sportfish from commercial vendors to augment populations in large reservoirs, especially those that have been negatively impacted by drought, and also to maintain urban fisheries throughout the State during the warm summer months in order to meet angler demands.

Detailed Description of Project and Rationale (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.):

Warmwater Sportfish are an important and popular resource to the anglers of Nevada. While hatchery trout stocking is a critically important management tool to provide fishing opportunity, there are many waters where water temperature gets too warm for trout resulting in poor fishing conditions, especially throughout the summer when many people want to be outdoors recreating. Warmwater sport fisheries provide that opportunity allowing anglers to continue recreating throughout the summer and ultimately sells more fishing licenses.

Periods of drought are common in Nevada and can have severe impacts on sportfish populations by reducing the size of reservoirs and thereby reducing the number of warmwater sportfish in those waters. Stocking warmwater sportfish in fisheries throughout the State is done annually, not only to rebuild drought impacted reservoirs, but also to meet stocking recommendations, satisfy angler demand, or to use certain species as a biological control to maintain population balance within large reservoirs. Lakes and Reservoirs proposed to be stocked as part of this proposal include, but are not limited to, Washoe Lake, Squaw Creek Reservoir (Washoe Co.), North Pond (Lyon Co.), Rye Patch Reservoir (Pershing Co.), Lahontan Reservoir (Churchill Co.), South Fork Reservoir, Wildhorse Reservoir, Willow Creek Reservoir (Elko Co.) and Chimney Reservoir (Humboldt Co.). Urban fisheries requiring annual stocking of warmwater fish include Sparks Marina, Paradise Pond, Virginia Lake (Washoe Co.), James Kinney Pond (Humboldt Co.), Liberty Pond (Churchill Co.), Seaman Pond (Douglas Co.), Boulder City Pond, Floyd Lamb Pond, Lorenzi Pond, Mesquite Pond and Sunset Pond (Clark Co.). Fish species to be stocked include wiper (White Bass X Stiped Bass hybrid), Channel Catfish, Largemouth Bass, Bluegill, or other species as determined by program need.



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Wipers are a popular and unique species of warmwater sportfish. Wipers are an aggressive, hard-fighting, punch-packing, schooling fish that corral baitfish and attack with vigor making them not only a popular sportfish with anglers, but also an important tool for controlling populations of certain fish species that can overpopulate our larger reservoirs. Wipers are a sterile hybrid and do not reproduce, making it possible for biologists to closely manage their populations, but it also requires that they be stocked on a regular basis to maintain the population. Channel Catfish are used to stock many Urban Fisheries throughout the State during the summer months when it is too warm to stock trout. Bluegill and Largemouth Bass are popular sport fish that require occasional stocking to augment waters recovering from drought.

Warmwater fish stocking is included as a management activity in the annual Wildlife Sport Fish Restoration Act Grant proposal for the Fisheries Division. Consultation with the USFWS to address any affects to listed species is completed prior to approval of the grant. There are no additional permits or NEPA compliance required for this project.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project would facilitate the propagation, introduction/augmentation, and management of warmwater game fish by providing funding to purchase game fish from commercial vendors for the purpose of providing recreational angling opportunity. NDOW does not have the ability/capacity to raise warmwater game fish in our hatcheries, so it is necessary to purchase them from commercial vendors. Fish stocking is necessary to build and enhance fish populations, improve angling where angling pressure is intense, and rebuild fisheries affected by severe drought. Without fish stocking, many important recreational fisheries would decline or cease to exist resulting in unacceptable angler success and satisfaction. Providing year around fishing opportunity results in increased fishing license sales.

Project Schedule (describe key milestones for project implementation):

Fish will be purchased through Nevada State Purchasing from approved vendors and stocked into identified reservoirs and urban fisheries in July, August, September of 2022 and March, April, May and June of 2023.

Does this Project have a Monitoring Plan and if so, please describe:

Yes, each of these reservoirs are monitored on an annual or biennial basis to determine fish species composition, size/age class structure, and population trends. Urban Ponds are generally monitored for angler use and success.

Wipers have proven to be an effective biological control of Yellow Perch in Wildhorse Reservoir. Annual NDOW monitoring data from 2002-2021 has shown the effectiveness of using wipers to control Yellow Perch populations. Ongoing monitoring at Wildhorse Reservoir to determine fish species composition, size/age class structure, and population trends is critical to inform biologists’ decisions on stocking recommendations and management decisions for wipers and other warmwater species in the reservoir including Yellow Perch, Smallmouth Bass, and Channel Catfish.

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):
TRs can be provided for all the waters, if needed.



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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

The habitat in many of these reservoirs have been improved by placing artificial habitat structures for fish. These artificial habitat structures were purchased in past years using funding from the Habitat Conservation Fee. Some of these waters include Lahontan, Rye Patch, Chimney, Wilson, and Willow Creek reservoirs.

North Pond (Mason Valley WMA) recently completed a Habitat Conservation Fee funded project to improve fish habitat by reducing aquatic and emergent vegetation; biologists are now in the process of rebuilding that fishery with Channel Catfish, Largemouth Bass, and Bluegill.

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

Due to extreme budgetary constraints within the Fisheries Division, warmwater fish purchases have been eliminated from the Fisheries Division budget for the foreseeable future. Warmwater sportfish species are a resource that is heavily utilized by anglers of Nevada and is responsible for a significant portion of our fishing license sales every year. Eliminating warmwater fish stocking will negatively impact angler expectations and satisfaction at certain reservoirs, as well as diminish the use of wipers as a biological control of the Yellow Perch population at Wildhorse Reservoir resulting in the degradation of that very popular fishery.

Project Duration: one year two years three years more

Estimated Start Date: July 1, 2022

Estimated End Date: June 30, 2023



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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		\$ 125,168.00
2. Other Cash Funding Sources for this Project		
a.		
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ -
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations/In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 125,168.00	



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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. Wiper	\$38,458	
b. Channel Catfish	\$ 72,510.00	
c. Largemouth Bass	\$ 4,300.00	
d. Bluegill	\$ 9,900.00	\$ -
e. Total Material Costs (lines a - d)	\$ 125,168.00	\$ -
6. Miscellaneous Costs		
a.		
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ -	\$ -
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 125,168.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ -</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 125,168.00</u>	
(Note: total project funding from previous table must match total project costs)		



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Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: ___ Hunter Burkett _____

Organization/Agency: _ Nevada Department of Wildlife _____

Date: ___ 2/24/2022 _____

Address: ___ 400 Howerton Hill _____

City: ___ Tonopah _____

State: ___ Nevada _____

Zip Code: _ 89049 _____

Cell: ___ 775-843-3669 _____

Phone: _ 775-482-3153 _____

Email:
hunter.brukett@ndow.org _____

Fax: _____

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

PROJECT INFORMATION

Project Title: Morey Bench Mule Deer Crucial Winter Habitat Enhancement

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: 2023

Project Location: Hot Creek Range, Hunt Unit 163, Morey Bench

Amount of Funds Requested from Heritage Account: \$40,000

Is a Project Map Attached? Yes No

(a map **must** include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Tonopah field office Bureau of Land Management (BLM) secured a grant for \$150,000 to treat Single Leaf Pinyon (*Pinus monophylla*) and Utah Juniper (*Juniperus occidentalis*) within 300 feet from a road in Management Area 16. The Environmental Assessment (EA) to conduct this work has been approved. The BLM will be implementing the project with the assistance of NDOW.



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Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game):

Select Priority Species (e.g. Sage-grouse, mule deer, etc.):

Mule deer will be the priority species that benefits from this habitat enhancement. Sage grouse and bighorn sheep also benefit from the treatments.

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

Yes, this project was proposed by the Nye-Esmeralda Mule Deer Enhancement Subcommittee to the Mule Deer Enhancement Oversight Committee. It will complement the other above Project Initiatives by protecting and enhancing the sagebrush landscape.

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

This project will be treating pinyon and juniper on mule deer wintering range.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No):

Yes, by removing pinyon and juniper near an active Lek, this habitat project will benefit the greater sage grouse.

Purpose of the Project:

The purpose of this project is to enhance the current quality of mule deer winter range in Area 16. This mule deer herd has been declining in numbers recently based off aerial survey data. By enhancing this winter range, the mule deer herd will come out of winter in better body condition. With greater body condition, mule deer are more likely to produce more offspring. Mule deer are not only important to hunters, but also the non-consumptive user.

The Nye-Esmeralda subcommittee identified Pinyon-Juniper invasion/encroachment as a significant limiting factor for the Management Area 16 mule deer herd. Morey Bench resides in hunt unit 163 and has been identified as crucial mule deer winter range. Mule deer leave the high elevations of hunt units 162 and 163 to crucial winter range on Morey Bench. The sagebrush and bitterbrush that mule deer rely so heavily on is becoming encroached upon by conifers. Additionally, removing pinyon and juniper will promote growth of preferred mule deer forage. Browse on Morey Bench has become senesced and provides poor nutritional value to mule deer. With the removal of conifers, young browse can take their place. The subcommittee proposed a project to remove pinyon and juniper by a roadside EA already established. The project will require the use of a hand crews to remove conifers within 300ft of



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an existing road.

Detailed Description of Project and Rationale (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.):

This wintering range has long been surveyed for mule deer in the spring. Historical data and anecdotal sightings from constituents have led past biologists to believe that mule deer from Hunt Unit 162 travel over the Hot Creek range and winter on Morey Bench. The quality of this habitat for wintering mule deer is evident in the length of travel for the mule deer that reside in 162. Up to 1,200 mule deer have been observed on this bench during past spring aerial surveys.

The treatment of pinyon and juniper will be conducted with hand crews and done via lop and scatter techniques. This technique minimizes ground disturbance. As discussed earlier, the treatment is covered under an already existing roadside EA. This EA permits the removal of pinion and juniper within 300ft from an existing road. Old Growth pinyon and juniper will be avoided and known trees with raptor nests will not be removed.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project will promote the statement above by enhancing the winter range of mule deer. This mule deer herd has contracted in recent years. Removing Pinyon and Juniper on winter range will promote the growth of preferred winter forage for mule deer.

The mule deer is a game animal that is widely regarded as an important resource for Nevadans. Mule deer herds in Central Nevada are in dire need of habitat improvements. This small pinyon and juniper treatment is a step in the right direction.

Project Schedule (describe key milestones for project implementation):

NDOW will work with the BLM in contracting this work through the state requisition process to remove pinyon and juniper in the polygons provided in the attached maps. First, a cultural resource survey will be conducted by BLM employees. This project will commence this fall (2022).

Does this Project have a Monitoring Plan and if so, please describe:

Photo plots will be taken before and after the removal. NDOW will also document habitat improvements with vegetative monitoring.

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 location of this project is in Northern Nye County Nevada. This project will be implemented on Bureau of Land Management lands in Area 16, Hunt Unit 163.



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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:

With this added funding, we can extend the acres treated in the management area, therefore having a greater benefit for mule deer and many other species that rely on sagebrush and Great Basin habitats.

Project Duration: one year two years three years more

Estimated Start Date: 8/11/2022

Estimated End Date: 10/11/2022



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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		\$ 40,000.00
2. Other Cash Funding Sources for this Project		
a. BLM		\$ 150,000.00
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 150,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations /In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 190,000.00	



BOARD OF WILDLIFE COMMISSIONERS

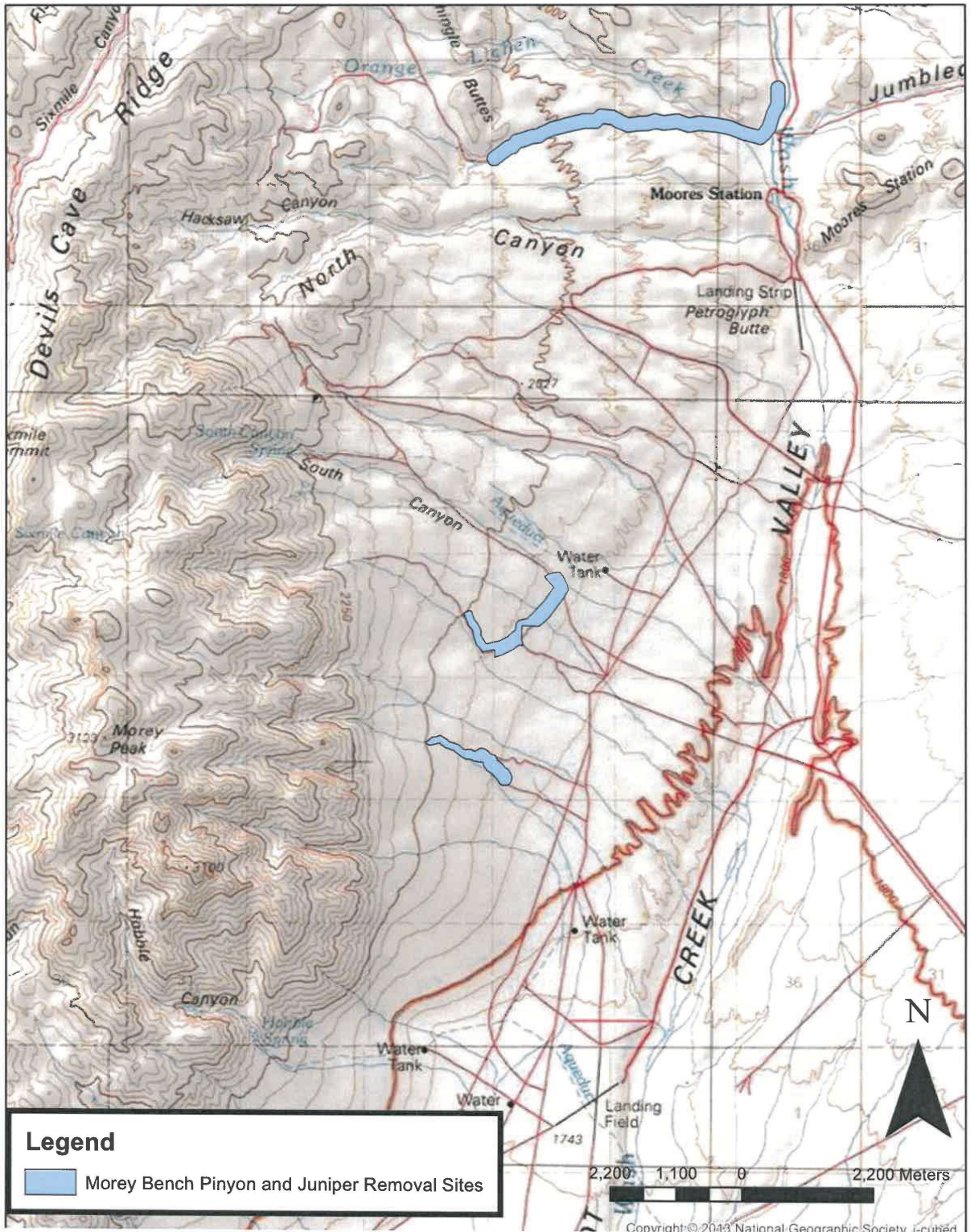
PROJECT COSTS

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. BLM Contract PJ Removal	\$ 40,000.00	\$ 150,000.00
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ 40,000.00	\$ 150,000.00
6. Miscellaneous Costs		
a.		
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ -	\$ -
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 40,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ 150,000.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 190,000.00</u>	
(Note: total project funding from previous table must match total project costs)		

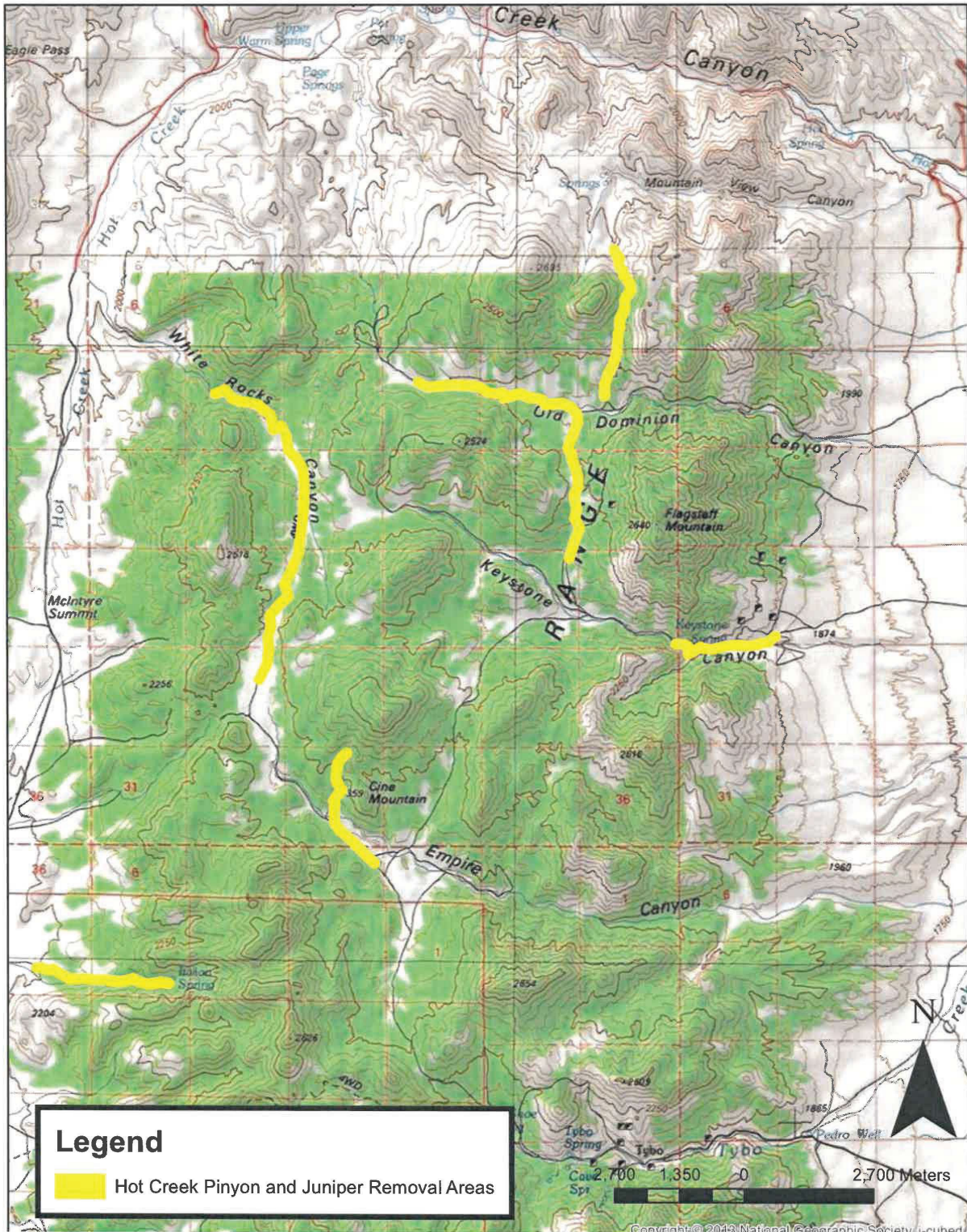
Morey Bench Pinyon and Juniper Removal Areas

2/25/22



Hot Creek Pinyon and Juniper Removal Areas

2/25/22





BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Moira Kolada/Daniel Sallee

Organization/Agency: Nevada Department of Wildlife

Date: 14 February 2022

Address: 1218 N. Alpha St. City: Ely

State: Nevada Zip Code: 89301

Cell: (775) 233-4798 Phone: (775)289-1655

Email: mkolada@ndow.org Fax: (775)289-1649

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

PROJECT INFORMATION

Project Title: Bullwhack Habitat Restoration

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: Lincoln County, North Cave Valley

Amount of Funds Requested from Heritage Account: \$75,000

Is a Project Map Attached? Yes No

(a map **must** include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Implementation Lead—NDOW

Agency Cooperator—Ely BLM

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game):

Big Game, Upland Game



BOARD OF WILDLIFE COMMISSIONERS

Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Mule Deer, Sage Grouse

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):
NDOW Mule Deer Enhancement Program

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Conifer Removal

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes

Purpose of the Project:

Vegetation attributes in North Cave Valley have been altered from their desired (historic) range and now include uncharacteristically high densities of trees and below normal levels of perennial grasses and forbs. Current conditions indicate that appropriate management actions (i.e. vegetation treatments) could prevent these areas from further departure from the desired condition and instead move towards a more ecologically sound condition.

The areas proposed for treatment in North Cave Valley were selected because of the habitat values that they provide, specifically mule deer and sage grouse. However, these treatments and their designs will be designed to benefit a variety of game and non-game wildlife species. This area was also prioritized because of the lack of feral horse pressure. In addition, the proposed treatments in North Cave Valley will allow for a seamless transition of treatments from North Cave Valley to the treatments underway in South Steptoe Valley.

Detailed Description of Project and Rationale (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 Bureau of Land Management (BLM) Ely District, in coordination with the Nevada Department of Wildlife has identified approximately 2,600 acres of being affected by pinyon and juniper encroachment and eligible for treatment under the Cave and Lake Valley Watershed Restoration Plan EA. Treatment will consist of complete removal of pinyon and juniper within the treatment area. Islands and stringers would be designed to benefit big game, upland game, and nongame species.

Tree removal would be done primarily by hand crews with the use of chainsaws, however in some areas mastication may be more appropriate to achieve the desired outcome. Trees would be cut by a hand crew would be cut as close as possible to ground level with a maximum stump height of 12 inches. Cut trees would be lopped and scattered/leave. 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



BOARD OF WILDLIFE COMMISSIONERS

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project specifically meets the objectives in subsection 1(a) of NRS 501.3575, “...the protection, propagation, restoration, transplantation, introduction, and management of any game fish or mammal, game bird or fur-bearing mammal in this state. The treatments funded by the Wildlife Heritage Fund would greatly improve upon a critical transition zone for mule deer, better foraging opportunities for elk, and increased habitat for the greater sage grouse.

Project Schedule (describe key milestones for project implementation):

- Final project design—Spring 2022
Release of Scope of Work for bid—Summer 2022
Project work—Fall 2022-Fall 2023

Does this Project have a Monitoring Plan and if so, please describe:

Photo monitoring will be used to monitor this project.

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):

T11N 63E Sections 13-15;22-24;26,27, 34, and 35
T11N 64E Sections 18-19

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

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

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

The Ely BLM office has been unable to secure funding to move forward with treatments in this area. Without funding from the Wildlife Heritage Account the project would likely be delayed or would not occur. Delay in treating these areas would likely result in an increase in loss of understory vegetation and the cost of treatment would likely increase.

Project Duration: one year [] two years [X] three years [] more []

Estimated Start Date: Fall 2022

Estimated End Date: Fall 2023



BOARD OF WILDLIFE COMMISSIONERS

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		\$ 75,000.00
2. Other Cash Funding Sources for this Project		
a. BLM		\$ 100,000.00
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 100,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations /In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 175,000.00	

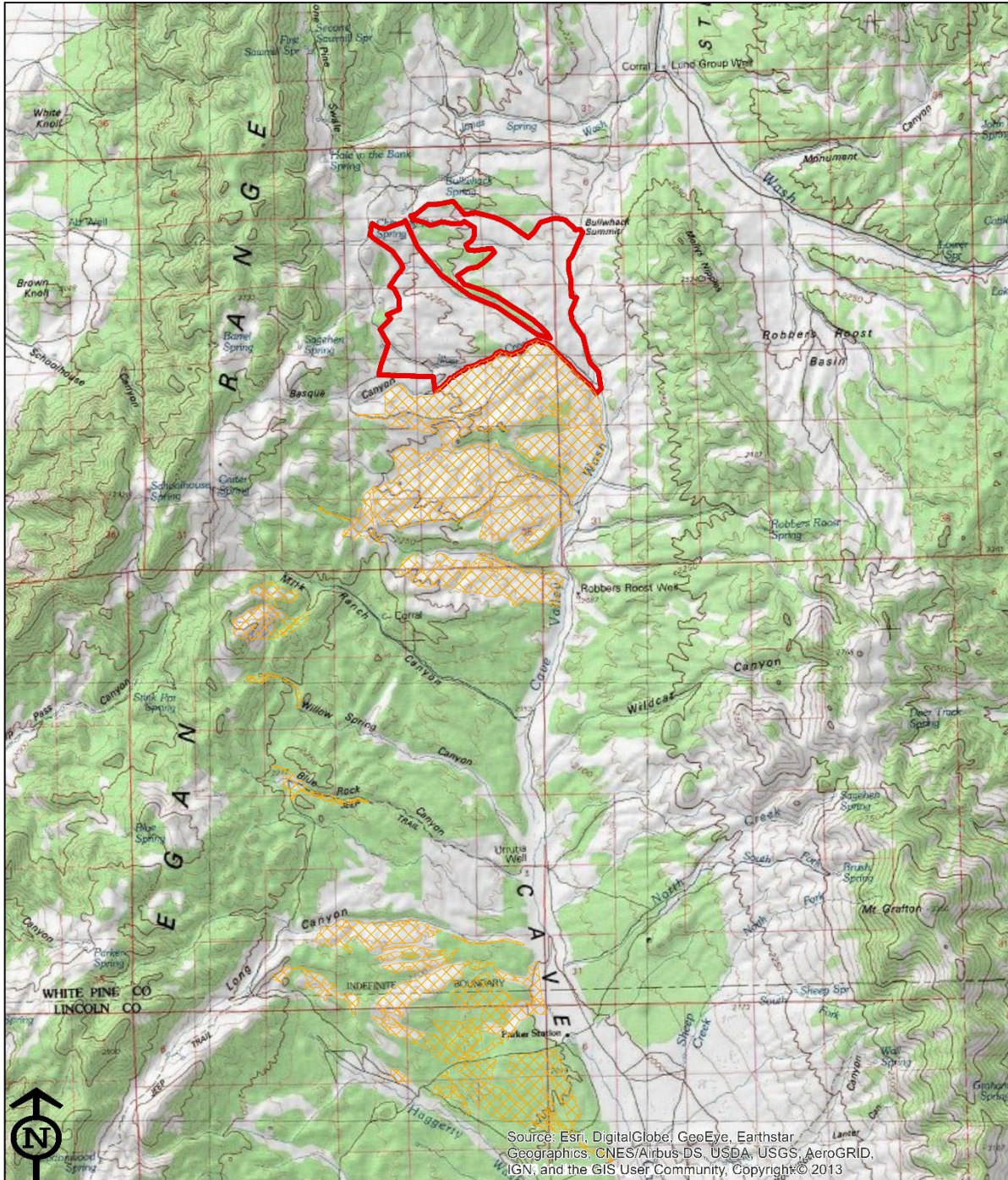


BOARD OF WILDLIFE COMMISSIONERS



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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a. PJ sawyer crew contract	\$ 75,000.00	\$ 100,000.00
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 75,000.00	\$ 100,000.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 75,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ 100,000.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 175,000.00</u>	
(Note: total project funding from previous table must match total project costs)		



Bullwhack Habitat Improvement

-  Bullwhack General Treatment Area
-  Completed Treatments



No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.
Projection: UTM Zone 11 North, NAD 83
Map Created: 27 November 2019





BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Matthew Glenn

Organization/Agency: Nevada Department of Wildlife

Date: 02/28/2022

Address: 60 Youth Center Rd

City: Elko

State: Nevada

Zip Code: 89801

Cell: 775-388-3848

Phone: 775

Email: mglenn@ndow.org

Fax: _____

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

Caleb McAdoo, Eastern Region Habitat Supervisor

PROJECT INFORMATION

Project Title: Corta Fire Habitat Improvement

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: Harrison Pass, Ruby Mountains Elko County Nevada

Amount of Funds Requested from Heritage Account: \$40,000.00

Is a Project Map Attached? Yes No

(a map **must** include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

- Nevada Department of Wildlife, Matt Glenn (Habitat Biologist, Implementation Lead)
- Nevada Department of Wildlife, Brittany Trimble (Habitat Biologist, Agency Liaison)
- United States Forest Service, Kyra Walton (Wildlife Biologist, FS Representative)
- United States Forest Service, Joshua Nichols (District Ranger)



BOARD OF WILDLIFE COMMISSIONERS

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game):

Mule Deer & Sage Grouse

Select Priority Species (e.g. Sage-grouse, mule deer, etc.):

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

NDOW Mule Deer Enhancement Program and Shared Stewardship

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Brush Species Restoration/Fire Rehabilitation

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): YES

Purpose of the Project:

The 16,000-acre Corta Fire burned a large portion of the Harrison Pass area within Ruby Mountains in 2019, this specific portion of the Ruby Mountains is considered by many to be one of the Nevada's most important resources for mule deer. The post fire vegetation response was largely positive in stabilizing the site with desirable perennial species; however, the brush species response has been limited at best. Most, if not all bitterbrush did not resprout and there has been limited sagebrush response.

The primary objective of this project is to restore the brush component within the burn scar to provide mule deer, sage grouse, and a myriad of other wildlife species the crucial habitat type that presently does not exist. Left without active restoration efforts and relying solely upon natural response could potentially translate into decades of little to limited utility for one of Nevada's largest mule deer herds.

The Harrison Pass area of the Ruby Mountains is of special significance as it provides 5,000-10,000 mule deer a critically important stop-over site in the herds migration to and from winter range, all while supporting a year around resident mule deer population. In most years thousands of mule deer will transition through this area relying heavily on the historically robust brush component to provide much needed high value forage as they migrate south for the winter. In more recent years, while experiencing milder winter conditions mule deer have been observed selecting to remain in the Harrison Pass area throughout the winter only making the area that much more important.



BOARD OF WILDLIFE COMMISSIONERS

Detailed Description of Project and Rationale (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 treatment prescription necessary to restore brush species at this site just requires a single step in planting brush species seedlings. In this project approximately 75,000 antelope bitterbrush and sagebrush species seedlings would be grown out from seed at a nursery for 1-2 years, transported to the site, then planted by both contract and volunteer labor. Seed would be provided by the Nevada Department of Wildlife to the nursery in the fall of 2022 to be grown out for approximately one calendar year, seedlings will then either be planted in fall of 2023 or cold stored and planted in spring of 2024. Due to the high use of this area by migrating deer, seedlings will require protective mesh to protect the young plants and allow time to mature sufficiently to handle herbivory.

A desktop analysis of the site has been completed to determine species composition and soil profiles to help increase likeliness of success of the project. Sagebrush composition is largely low and mountain sage with antelope bitterbush as a higher density component of the composition. When considering the logistics of the nursery grow out process, and the time it takes to grow out low sage (in most cases two-years), antelope bitterbrush and mountain sage stand out as the best candidates for our purposes. Timing of the planting portion of the project is planned for fall, after the soil at the site has likely received some moisture and the young plants can take advantage the higher soil moisture throughout the winter and spring months.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

As the Area ten mule deer herd continues to face adversity, primarily in loss of habitat, and drought conditions, it becomes more important for NDOW and land management agencies to increase effectiveness and efficiency in the rehabilitation of crucial habitats for the herd. As one of the state’s largest mule deer herds that has real potential to rebound and remain stable to provide an even greater resource for the sportsmen of Nevada, projects like this one are congruent with objectives and mission of the intended use of Wildlife Heritage Trust Account as defined in NRS 501.3575.

Project Schedule (describe key milestones for project implementation):

Project Timeline:

- Fall 2022- Seed purchased and delivered to nursery for grow out
- Fall 2023- Seedlings picked up and delivered to site for planting by contract and volunteer labor
- Spring 2024- Any seedlings not planted in fall of 2023 will be planted

Does this Project have a Monitoring Plan and if so, please describe:



BOARD OF WILDLIFE COMMISSIONERS

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 area lies completely on United States Forest Service land located in the Ruby Mountains, Elko County, NV. The sites can be most easily accessed from the Jiggs Highway (SR228) heading south from Spring Creek Nevada for approximately 33 miles.

Site	Township and Range
Corta Fire Habitat Improvement Project	Portions of both T28N R57E & T29N R57E

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

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

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

As with most range restoration projects, the process can be both difficult and expensive. Most, if not all this project requires contract labor, and seedlings that have significant costs associated with them. When working to improve a large enough tract of range land that will have real value for mule deer, and other wildlife costs become an obstacle, and it is important to NDOW as well as sportsman that no one group bear the brunt of this funding burden.

The Management Area Ten mule deer herd has been severely impacted over the last 20 years with their winter, stop over, and migration corridor habitat experiencing most of those impacts. Pinyon juniper encroachment, wildfire, heavy industry, and then drought have kept these habitats from responding in a productive manner that provides utility and viable habitat to the heard. It is the generosity of the groups and committees like the Heritage Commission that allow for well-placed and implemented restoration on Nevada's range land to maintain healthy sustainable mule deer populations.

Project Duration: one year two years X three years more

Estimated Start Date: _____

Estimated End Date: _____



BOARD OF WILDLIFE COMMISSIONERS

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		\$ 40,000.00
2. Other Cash Funding Sources for this Project		
a. Habitat Conservation Fee		\$ 17,250.00
b. Upland Game Bird		\$ 17,250.00
c. Restoration Grant (W-24)		\$ 35,000.00
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 69,500.00
3. In-kind Services for this Project		
a. Volunteer Time		\$ -
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations /In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 109,500.00	



BOARD OF WILDLIFE COMMISSIONERS

PROJECT COSTS

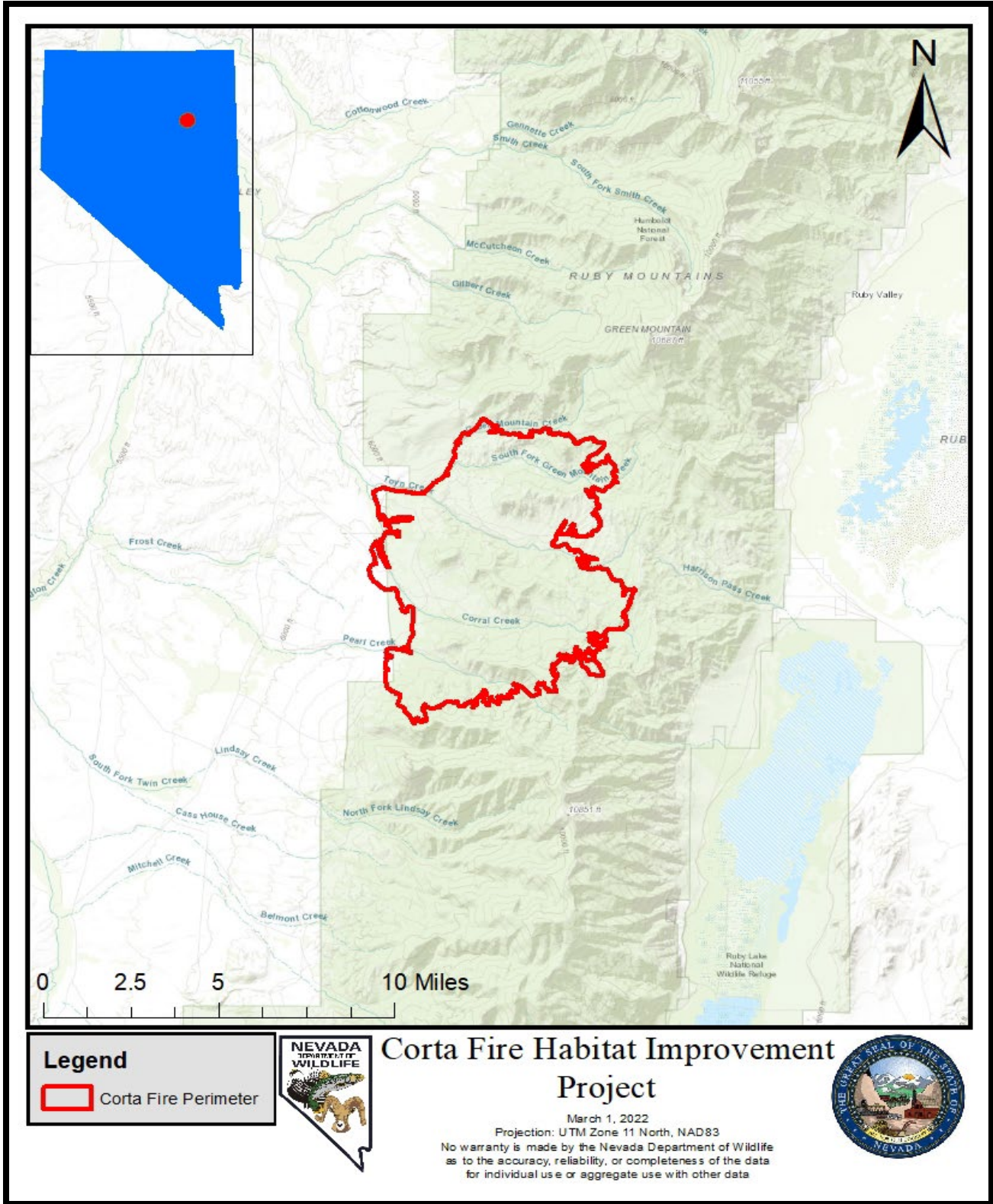
The cost breakdown below should cover the total costs of the project you are seeking funding for. NOTE: THE HERITAGE ACCOUNT CANNOT BE USED TO PAY INDIRECT COSTS. Double click on the table to activate the embedded spreadsheet.

	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. Seedlings	\$ 2,500.00	\$ 35,000.00
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ 2,500.00	\$ 35,000.00
6. Miscellaneous Costs		
a. Contract labor	\$ 37,500.00	\$ 34,500.00
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 37,500.00	\$ 34,500.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 40,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ 69,500.00</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 109,500.00</u>	
(Note: total project funding from previous table must match total project costs)		



BOARD OF WILDLIFE COMMISSIONERS

Maps:





BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Moira Kolada

Organization/Agency: Nevada Department of Wildlife

Date: 15 February 2022

Address: 1218 N. Alpha St City: Ely

State: Nevada Zip Code: 89301

Cell: (775) 233-4798 Phone: (775) 289-1655 ext. 5

Email: mkolada@ndow.org Fax: (775)289-1649

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

PROJECT INFORMATION

Project Title: Flint Spring Habitat Restoration

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: Flint Spring, Egan Johnson Basin, White Pine County

Amount of Funds Requested from Heritage Account: \$40,000

Is a Project Map Attached? Yes [X] No []

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner:

Implementation Lead—NDOW

Agency Cooperator- Ely BLM, Bristlecone Field Office



BOARD OF WILDLIFE COMMISSIONERS

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game):

Big Game, Upland Game

Select Priority Species (e.g. Sage-grouse, mule deer, etc.):

Mule Deer, Sage Grouse

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

NDOW Mule Deer Enhancement Program

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)

Conifer Removal, Riparian Enhancement

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes

Purpose of the Project: The purpose of this project is to help restore natural site conditions, reduce potential for large wildfires by reducing fuel loading, increase understory grass and forb species diversity, and to improve wildlife habitat. The need of this action is to respond to the ecological departure of plant communities from the natural range of variability within Egan and Johnson Basins relative to desired conditions. The need arises primarily due to successional changes in sagebrush and pinyon-juniper stands resulting in establishment and above normal density of single-leaf pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) trees. Important habitat for Greater Sage Grouse (GRSG), mule deer, antelope and elk has been identified within the project area. There are several GRSG leks within close proximity to the proposed treatments. The presence of these leks increases the likelihood the GRSG are utilizing the area for nesting, early brood rearing, and wintering. The proposed treatment area also includes crucial summer for both mule deer and elk, crucial winter habitat for mule deer, and general winter and summer habitat for mule deer and elk. Pinyon and juniper encroachment has been identified by NDOW as one of the limiting factors for mule deer crucial winter range. The proposed treatments would specifically benefit GRSG by removing potential perches for avian predators. All species would see an improvement the habitat conditions due to the expected rebound in native shrubs, perennial grass and forbs. The increases in these native vegetation components directly translate to increased foraging opportunities which are extremely important for all species especially during crucial summer and crucial winter periods, especially in years that have severe weather conditions i.e. drought or high snowfall winters.



BOARD OF WILDLIFE COMMISSIONERS

Detailed Description of Project and Rationale (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 Egan Johnson project boundary is approximately 84,675 acres and encompasses 21 treatment units identified within that boundary. The 21 treatment units are approximately 37,455 acres of public lands administered by the BLM and 1,045 acres of private lands in the Egan and Johnson Basins. Treatment of private land would only occur if a cooperative agreement is executed with the private landowners. Up to 65% of the treatment unit acres may be treated within the identified units. A combination of vegetation treatment methods would be used to achieve resource objectives.

The proposed treatment methods would include manual tree thinning. Areas targeted for treatment are sagebrush communities where pinyon-juniper trees have become established. Within that project boundary and between treatment units, hand thinning of Phase I pinyon-juniper would occur.

The Bureau of the Land Management (BLM), Ely District has completed all necessary NEPA for this project and has developed treatment polygons in conjunction with the Nevada Department of Wildlife. This proposal focuses on continuation of treatments that BLM and NDOW began in 2019 within Egan Basin and the Cocomongo Mountains. This proposal will target the areas near Flint Spring.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project specifically meets the objectives in subsection 1(a) of NRS 501.3575, “...the protection, propagation, restoration, transplantation, introduction, and management of any game fish or mammal, game bird or fur-bearing mammal in this State.” The treatments funded by the Wildlife Heritage Fund would greatly improve habitat for many big game, non-game species, and greater sage grouse.

Project Schedule (describe key milestones for project implementation):

Project implementation- Summer 2022

Does this Project have a Monitoring Plan and if so, please describe:

Photo monitoring would used for this project and would include pre and post treatment photos.



BOARD OF WILDLIFE COMMISSIONERS

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):

T24N R62E Sections 3,4,9,10,15,16,21
T23N R62E Sections 22,23,26,27,34,35
T22N R62E Sections 1,2, 12

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:

Restoration activities are inherently expensive and any contribution towards this endeavor would provide great benefit to achievement of project objectives of improving habitat for GRSG, mule deer, and elk. Without Heritage funding the area near Flint Spring will be placed on hold until funding can be obtained. The density of the PJ encroachment is currently such that it is financially and ecologically feasible to treat using lop and scatter methods. Should the project be delayed, it may become necessary to change treatment methodologies to more expensive methods in order to account for increased density of trees.

Project Duration: one year two years three years more

Estimated Start Date: July 2022

Estimated End Date: December 2022



BOARD OF WILDLIFE COMMISSIONERS

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		\$ 40,000.00
2. Other Cash Funding Sources for this Project		
a.		
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ -
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations/In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 40,000.00	

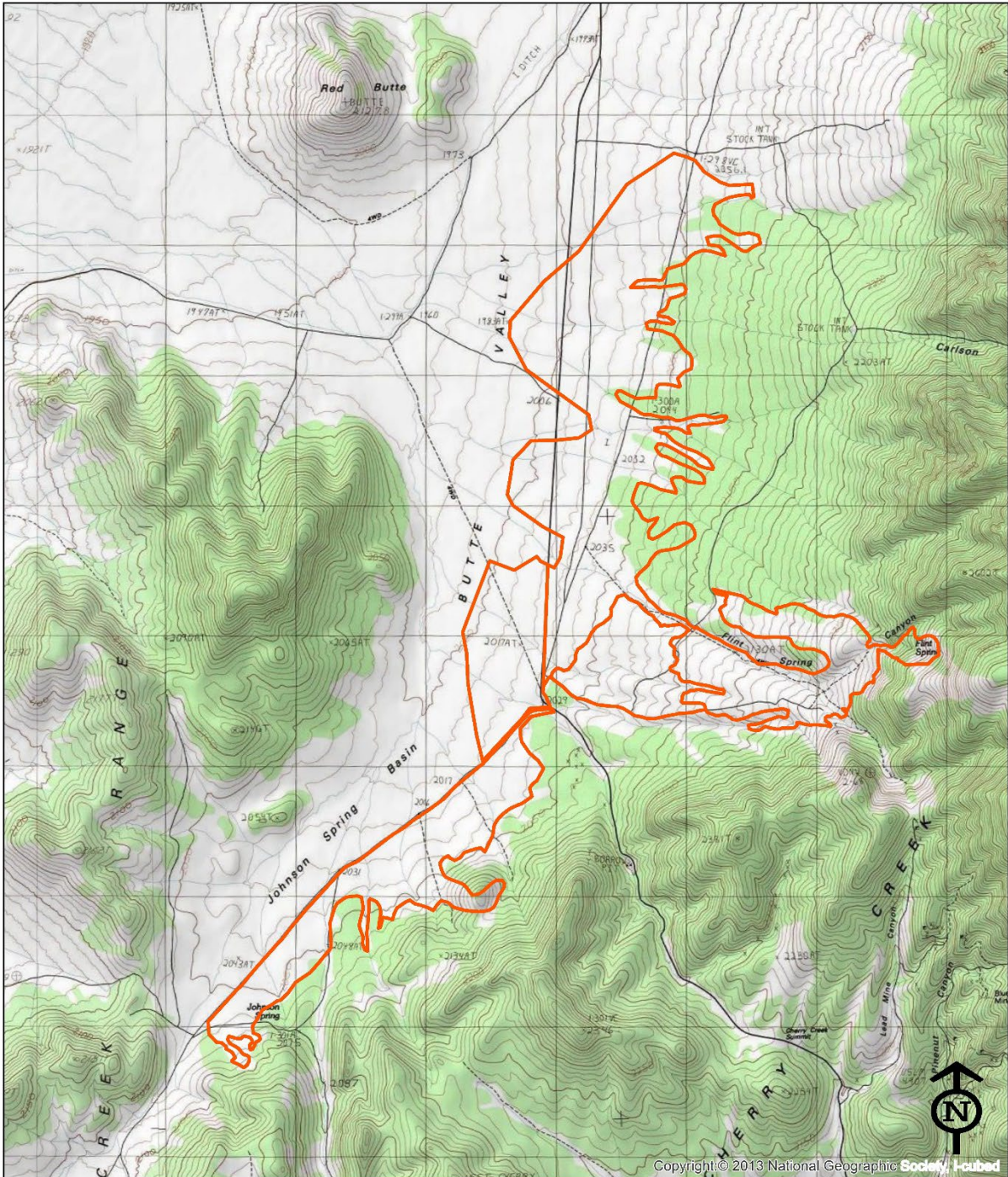


BOARD OF WILDLIFE COMMISSIONERS

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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a. PJ Removal Contract	\$ 40,000.00	
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 40,000.00	\$ -
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	<u>\$ 40,000.00</u>	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		<u>\$ -</u>
9. Total Project Costs (add lines 7 & 8)	<u>\$ 40,000.00</u>	
(Note: total project funding from previous table must match total project costs)		

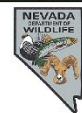


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Flint Spring Habitat Restoration



Treatment Areas



No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.
 Projection: UTM Zone 11 North, NAD 83
 Map Created: 15 February 2012





BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Moira Kolada/Daniel Sallee

Organization/Agency: Nevada Department of Wildlife

Date: 14 February 2022

Address: 1218 N. Alpha St. City: Ely

State: Nevada Zip Code: 89301

Cell: (775) 233-4798 Phone: (775)289-1655

Email: mkolada@ndow.org Fax: (775)289-1649

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

PROJECT INFORMATION

Project Title: Toner Spring Habitat Restoration

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY23

Project Location: Smith Valley, White Pine County

Amount of Funds Requested from Heritage Account: \$75,000

Is a Project Map Attached? Yes [X] No []

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

Implementation Lead—NDOW

Agency Cooperator—Ely BLM

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game):

Big Game, Upland Game



BOARD OF WILDLIFE COMMISSIONERS

Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Mule Deer, Sage Grouse

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.):

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.)
Conifer Removal

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes

Purpose of the Project:

Vegetation attributes in within the Toner Spring Habitat Restoration area have been altered from their desired (historic) range and now include uncharacteristically high densities of trees and below normal levels of perennial grasses and forbs. Current conditions indicate that appropriate management actions (i.e. vegetation treatments) could prevent these areas from further departure from the desired condition and instead move towards a more ecologically sound condition.

The areas proposed for treatment were selected because of the importance of the area for the Area 12 mule deer and habitat values that they provide, specifically for wintering mule deer. However, these treatments and their designs will be designed to benefit a variety of game and non-game wildlife species. This area was also prioritized because of the lack of feral horse pressure. In addition, the proposed treatments are adjacent to the Smith Valley Habitat Restoration.

Detailed Description of Project and Rationale (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 Bureau of Land Management (BLM) Ely District, in coordination with the Nevada Department of Wildlife has identified approximately 10,000 acres of being affected by pinyon and juniper encroachment. The Bristlecone Field Office is currently processing a CX for these treatments. The CX and necessary cultural clearances will be completed by July 2022. Treatment will consist of complete removal of pinyon and juniper within the treatment area. Islands and stringers would be designed to benefit big game, upland game, and nongame species.

Tree removal would be done primarily by mastication, however in some areas hand crews may be more appropriate to achieve the desired outcome. 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. Aerial seeding would occur to help bolster the understory species. Shrub species such as bitterbrush would be seeded utilizing seeders mounted on the masticators.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)



BOARD OF WILDLIFE COMMISSIONERS

This project specifically meets the objectives in subsection 1(a) of NRS 501.3575, "...the protection, propagation, restoration, transplantation, introduction, and management of any game fish or mammal, game bird or fur-bearing mammal in this state. The treatments funded by the Wildlife Heritage Fund would greatly improve upon a critical transition zone for mule deer.

Project Schedule (describe key milestones for project implementation):

Final project design—Spring 2022

Release of Scope of Work for bid—Summer 2022

Project work—Fall 2022-Fall 2023

Does this Project have a Monitoring Plan and if so, please describe:

Photo monitoring will be used to monitor this project.

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):

T19N 62E Sections 23, 26, 27, 34, and 35

T18N 62E Sections 2, 3, and 11

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:

The Ely BLM office has been unable to secure funding to move forward with treatments in this area. Without funding from the Wildlife Heritage Account the project would likely be delayed or would not occur. Delay in treating these areas would likely result in an increase in loss of understory vegetation and the cost of treatment would likely increase.

Project Duration: one year two years three years more

Estimated Start Date: Fall 2022

Estimated End Date: Fall 2023



BOARD OF WILDLIFE COMMISSIONERS

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		\$ 75,000.00
2. Other Cash Funding Sources for this Project		
a. Habitat Conservatin Fee		\$ 25,000.00
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 25,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations /In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$	100,000.00

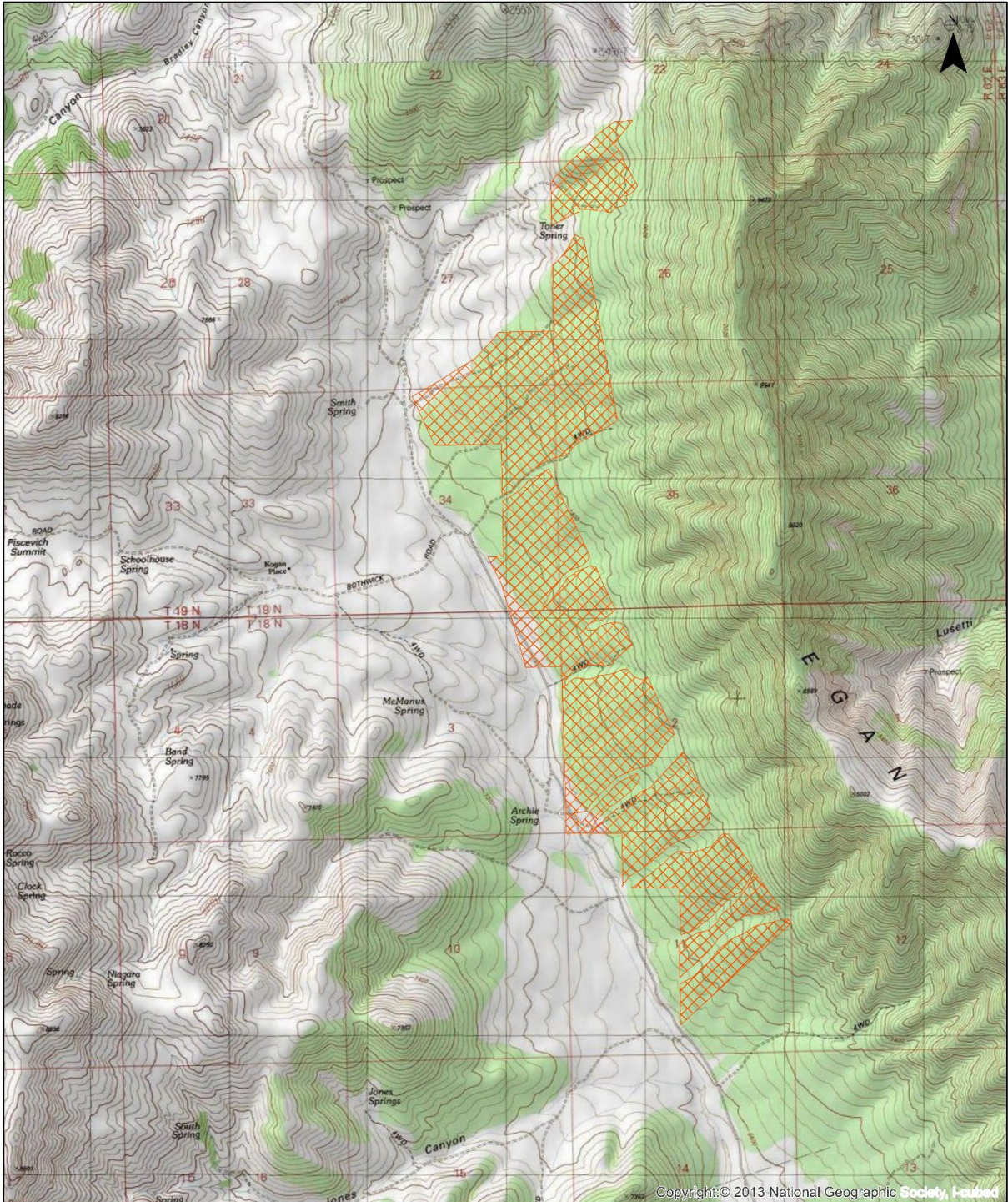


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PROJECT COSTS

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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a. PJ sawyer crew contract	\$ 75,000.00	\$ 25,000.00
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 75,000.00	\$ 25,000.00
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	\$ 75,000.00	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		\$ 25,000.00
9. Total Project Costs (add lines 7 & 8)	\$ 100,000.00	
(Note: total project funding from previous table must match total project costs)		



Toner Spring Habitat Restoration Project

 Project Area



No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

Projection: UTM Zone 11 North, NAD 83
Map Created: 16 February 2022





Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Clint Bentley

Organization/Agency: Fraternity of the Desert Bighorn

Date: 2/24/2022

Address: PO Box 27494

City: Las Vegas

State: Nevada

Zip Code: 89126

Cell: 702-275-3525

Phone: 702-275-3525

Email: jackie@redstarfence.com

Fax: 702-910-3699

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

Samuel Hughes, Nevada Department of Wildlife, Water Development Biologist

PROJECT INFORMATION

Project Title: Survey and Maintenance of existing big game guzzlers.

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: FY22

Project Location: Multiple mountain ranges in Clark, Nye, and Lincoln County

Amount of Funds Requested from Heritage Account: 40,000

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:

Helicopter flights to land at remote guzzler sites. Survey status of project, record water storage, and make minor repairs as necessary. Major repairs will be noted and completed at another time.



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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.):

Land a helicopter at each existing guzzler location listed on the proposed inspection flight schedule to check water levels and overall status of the project. Minor repairs will be completed, and necessary major repairs will be documented so that a returning crew can complete these. Landings in wilderness will be recorded and let known by specific land managing agency. Flights on the National Testing and Training Range will be in coordination with the Desert National Wildlife refuge.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

The status of these guzzlers is imperative to the existence of numerous Bighorn Sheep and Mule Deer herds throughout Southern Nevada, as well as many non-game species. Guzzlers are the only source of water in many of these mountain ranges and the reason many of these animals can persist in these habitats.



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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):

See attached coordinates on Water Development Inspection Flight Sheets.

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:

The Fraternity of the Desert Bighorn is a non-profit organization which has no paid staff. Members volunteer their time to visit these sites and provide volunteer hours to maintain and/or construct the guzzler water developments. The Fraternity organizes fund raisers to help pay for construction supplies.

Project Duration: one year two years three years more

Estimated Start Date: February, 2023

Estimated End Date: March, 2023



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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			\$40,000
2.	Other Cash Funding Sources for this Project			
	a.			
	b.			
	c.			
	d.			
	e. Total Other Cash Funding Sources (lines a - d)			\$ -
3.	In-kind Services for this Project			
	a. Volunteer Time			
	b. Equipment			\$ -
	c. Materials			\$ -
	d. Mileage			\$ 250.00
	e.			
	f.			
	g.			
	h. Total Donations/In-kind Services (lines a - g)			\$ 250.00
4.	Total Project Funding			\$ 40,250.00



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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	\$0	\$0
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		\$ 250.00
c. Total Travel Costs (lines a & b)	\$ -	\$ 250.00
4. Equipment Items		
a. Sundance Helicopter	\$38,450	
b. Sundance Fuel Truck	\$2,550	
c.		
d. Total Equipment Costs (line a - c)	\$ 41,000.00	\$ -
5. Materials		
a.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a.		
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ -	\$ -
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	\$ 41,000.00	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		\$ 250.00
9. Total Project Costs (add lines 7 & 8)	\$ 41,250.00	
(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.

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

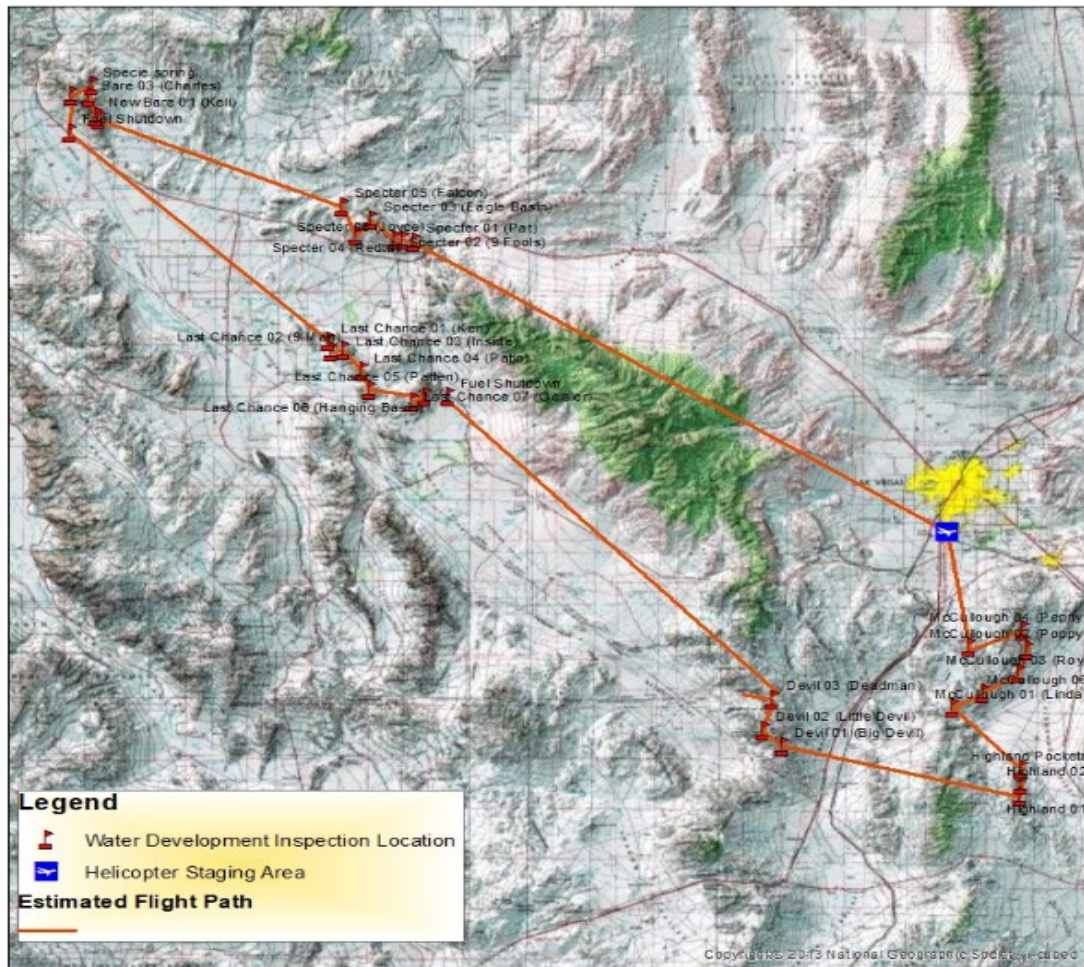
The Wildlife Heritage Account and Fraternity of the Desert Bighorn are mentioned throughout the annual completion report that is written upon the completion of the maintenance flights. This document is used by multiple Biologists and agencies in the conservation of wildlife.

Authorizing Signature: 

Review Date 3/15/2022

2023 Day 1

Nevada Department of Wildlife



0 5 10 20 30 40 Miles



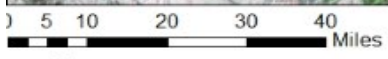
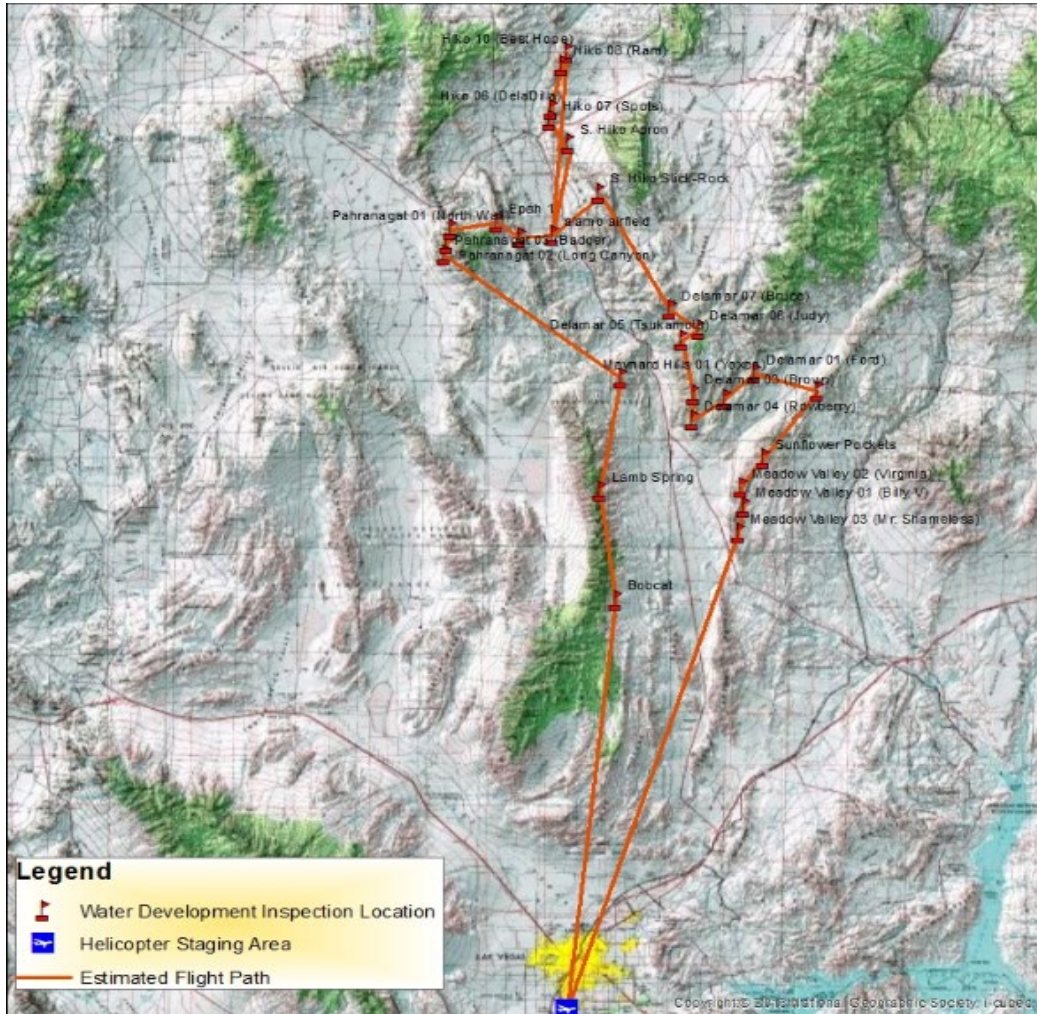
This map is for reference only. No warranty is made as to the accuracy, reliability or completeness of the data for individual use or aggregate use with other data. Guzzlers depicted on this map may or may not be visited due to the needs of visitation prior to flight day.

Matt Flores 2/19/2019
1:1,000,000 scale map
Nad 83 Zone 11N

Day One of Four of 2020 maintenance flights
approximately 289 mile traveled.

2023 Day 2

Nevada Department of Wildlife



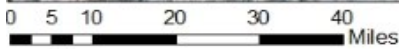
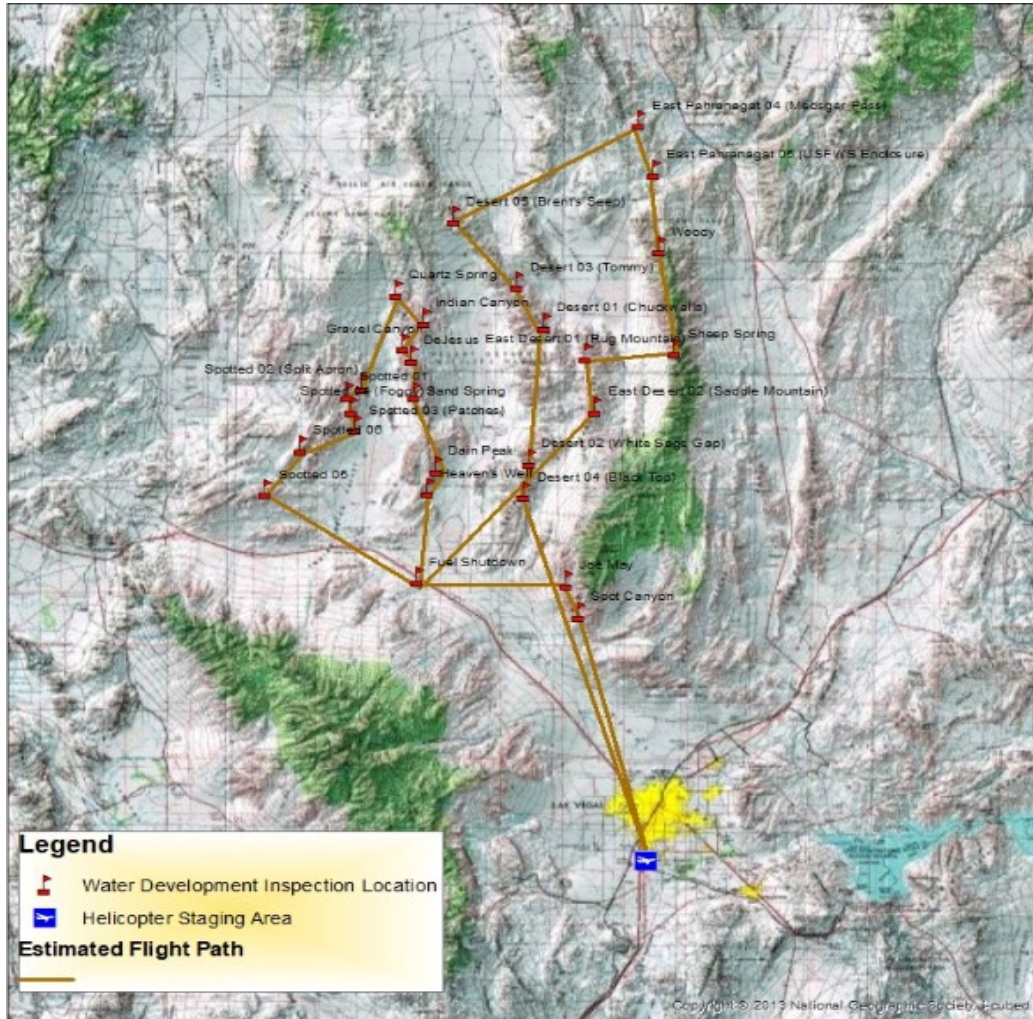
This map is for reference only. No warranty is made as to the accuracy, reliability or completeness of the data for individual use or aggregate use with other data. Guzzlers depicted on this map may or may not be visited due to the needs of visitation prior to flight day.

Matt Flores 2/19/2019
1:1,000,000 scale map
Nad 83 Zone 11N

Day Three of Four of 2020 maintenance flights
approximately 283 miles traveled.

2023 Day 3

Nevada Department of Wildlife



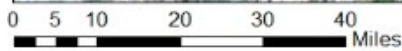
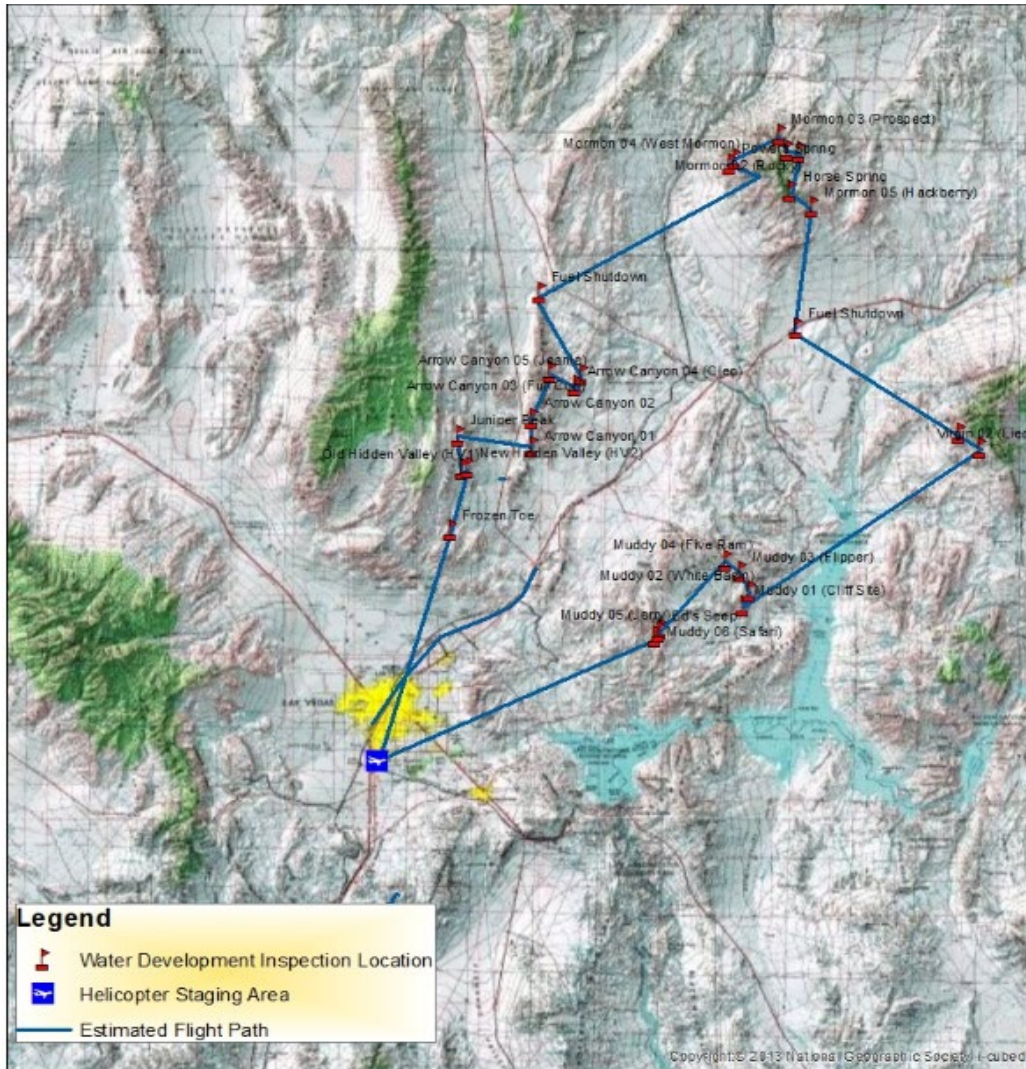
This map is for reference only. No warranty is made as to the accuracy, reliability or completeness of the data for individual use or aggregate use with other data. Guzzlers depicted on this map may or may not be visited due to the needs of visitation prior to flight day.

Matt Flores 1/17/2017
1:1,000,000 scale map
Nad 83 Zone 11N

Day two of Four of 2020 maintenance flights
approximately 211 mile traveled.

2023 Day 4

Nevada Department of Wildlife



This map is for reference only. No warranty is made as to the accuracy, reliability or completeness of the data for individual use or aggregate use with other data. Guzzlers depicted on this map may or may not be visited due to the needs of visitation prior to flight day.

Matt Flores 2/19/2019
1:1,000,000 scale map
Nad 83 Zone 11N

Day Three of Four of 2020 maintenance flights
approximately 217 miles traveled.



BOARD OF WILDLIFE COMMISSIONERS

Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Shane Boren/Jake Brunson

Organization/Agency: White Pine County Conservation District

Date: 3/1/22

Address: 744 N. Industrial Way City: Ely

State: Nevada Zip Code: 89301

Cell: Shane, 775-296-0903; Jake, 775-296-1011 Phone:

Email: (Shane) shaneb@mwpower.org_and (Jake) brunsonranches@gmail.com Fax:

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

PROJECT INFORMATION

Project Title: Duck Creek Aspen Restoration

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: 2023

Project Location: Duck Creek Basin, approximately 20 miles north of Ely, NV

Amount of Funds Requested from Heritage Account: \$50,000

Is a Project Map Attached? Yes [X] No []

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

- White Pine Conservation District, project applicant and administrator
Lauren Williams, DCNR, implementation lead
NDOW, agency cooperator
BLM, agency cooperator



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USFS, agency cooperator
 Jim Bath, landowner
 Gracian Uhalde, landowner

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): Big Game, Diversity, General Habitat Improvement.

Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Sage grouse, mule deer, elk.

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.): No

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.) Fuels Management, Riparian enhancement.

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes

Purpose of the Project:

Additional match is needed for existing funded project titled Duck Creek Aspen Rehabilitation. This project will be funded by a Secure Rural Schools grant via the U.S. Forest Service. It has been approved for \$130,000 with the notion that additional match will be sought after.

Removing dead and dying aspen from the basin will help generate new growth to existing stands. Diseases have negatively impacted aspen stands and our goal is to prevent spread of those diseases, including but not limited to: Oystershell Scale, Aspen Leaf Miners, and Ink Spot disease.

Detailed Description of Project and Rationale (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.):

Aspen have declined 60 to 90% throughout the West and in Nevada, with many current aspen stands containing old-age or single-age trees that have not successfully regenerated for 80 years or longer. Decline of aspen communities has been largely attributed to declines in natural disturbances (e.g., fire suppression in the surrounding landscape) which has led to an increase in disease within stands. While a healthy aspen stand can withstand or recolonize after a disturbance, an unhealthy or stressed stand is likely to be lost. Aspens rarely grow from seed because of their demanding seed bed requirements and high vulnerability to herbivory making it impractical to replace an aspen stand once it has been lost. Present day aspen clones have likely maintained their presence on those sites for thousands of years through vegetative regeneration.



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Aspen communities have exceedingly high biodiversity, second only to riparian areas on western ranges. Aspen produce forage for both wildlife and domestic livestock. Healthy aspen communities consist of developed dense multi-age structure that provides benefits to wildlife dependent upon the diverse nature of these communities. Many species utilize aspen stands for various life stages. A variety of birds and mammals, including many species that are classified as species of conservation priority, utilize mid-story structure and herbaceous/shrub understory of aspen communities for forage, nesting, and protective cover.

The removal dead and diseased aspen in Duck Creek basin is necessary to limit spread of those diseases, including but not limited to, Oystershell Scale, Aspen Leaf Miners, and Ink Spot disease. Trees over approximately 10 feet will be removed using professional crews and chainsaws. Aspen will be cut into manageable lengths and piled for removal or mastication. Removing dead aspen and treating diseased aspen supports overall forest health by making space for healthy saplings to grow and will help limit the spread of disease. Any remaining trees will be assessed for health and treated accordingly. Fungicide, herbicide, and infected limb removal are a few treatment options. While not all aspen diseases are fatal or contagious, removal of sick trees will allow for healthier stands of aspen which will benefit a variety of wildlife.

How Would this Project Help with “the protection, propagation, restoration, transplantation, 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)

This project meets these objectives in multiple ways: 1) local biodiversity will increase coincident with the improvement of aspen communities; 2) benefit local wildlife by increasing availability of forage, nesting opportunities, and cover; and, 3) support overall forest health by making space for healthy saplings to grow and help limit spread of disease. Restoration of Nevada’s wildlife habitat will, in turn, protect numerous wildlife species by providing more natural habitat conditions capable of supporting a diversity of wildlife. Healthier aspen stands will create healthier landscapes, which support wildlife populations, which in turn attracts recreation and allows communities to experience the outdoors and provides for more economic benefit to the area.

Project Schedule (describe key milestones for project implementation):

June-July 2022: Identify aspen that need chemical treatment and aspen that need removal.

Fall 2022: Remove dead aspen.

Does this Project have a Monitoring Plan and if so, please describe:



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Photo monitoring will be utilized to document: pre-treatment and post regrowth after removal and effectiveness of treatment including direct removal and chemical/biological treatments. Photos will be available with completion report.

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):

Property addresses and federal land treatment areas are not available.

Access: North on Highway 93 to Duck Creek Basin turnoff. Follow Duck Creek Basin Road until it turns south, use GPS to find aspen stands.

Township: 17N

Range: 65E

Sections: 19, 20, 29, 30

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:

This project is the epitome of collaborative wildlife habitat restoration. Removal of diseased aspen will reinvigorate much needed regeneration of stands.

Project Duration: one year two years three years more

Estimated Start Date: July 2022

Estimated End Date: June 2023



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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. Resource Advisory Committee and USFS		\$ 130,000.00
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ 130,000.00
3. In-kind Services for this Project		
a. Volunteer Time		
b. Equipment		
c. Materials		
d.		
e.		
f.		
g.		
h. Total Donations/In-kind Services (lines a - g)		\$ -
4. Total Project Funding	\$ 180,000.00	
(add lines 1, 2e,3h)		



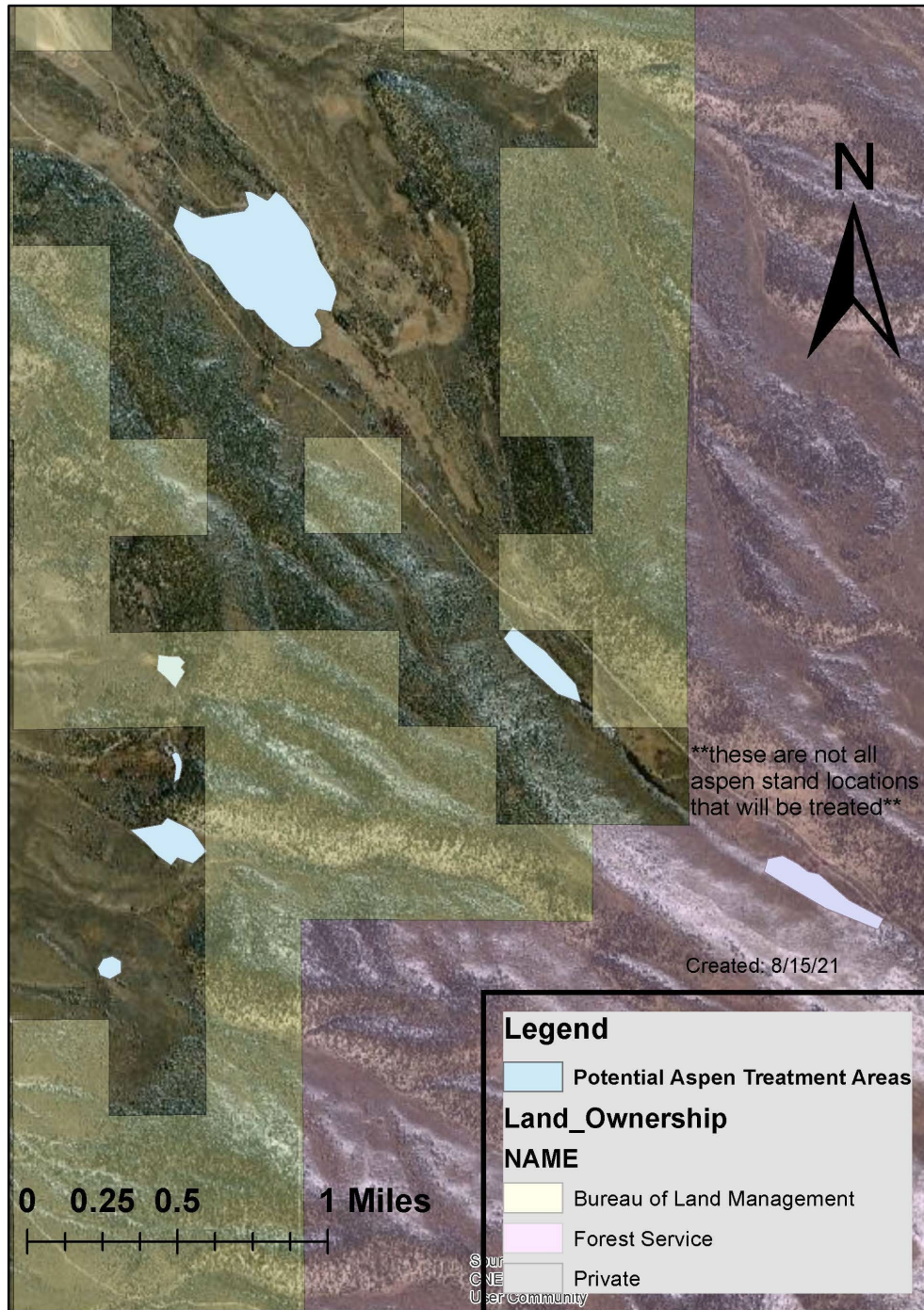
BOARD OF WILDLIFE COMMISSIONERS

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.		
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ -
6. Miscellaneous Costs		
a. Contractor for tree removal	\$ 50,000.00	\$ 130,000.00
b.		
c.		
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 50,000.00	\$ 130,000.00
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)		\$ 130,000.00
9. Total Project Costs (add lines 7 & 8)	\$ 180,000.00	
(Note: total project funding from previous table must match total project costs)		

Duck Creek Aspen Restoration





BOARD OF WILDLIFE COMMISSIONERS



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Ely District Office
702 North Industrial Way
Ely, Nevada 89301
https://www.blm.gov/nevada

In Reply Refer To:

SEP 16 2021

Lauren Williams
Conservation Staff Specialist
Department of Conservation and Natural Resources
744 North Industrial Way
Ely, NV 89301

Dear Ms. Williams:

The Bureau of Land Management (BLM), Ely District would like to extend support for your project proposal to remove dead and severely diseased aspen in Duck Creek Basin. Aspen communities are rather rare within the BLM Ely District, and a priority for protection and enhancement within the Duck Creek area. Your project will coincide well with aspen treatments we are proposing on public lands in the same area. This could be a great collaborative project among many stakeholders in the area. The project would improve overall aspen health and assist in meeting objectives for the area.

We support your request and look forward to possibly partnering with you to complete aspen restoration in the Duck Creek area.

Sincerely,

[Handwritten signature of Cody Coombs]

Cody Coombs
Fuels Program Manager

INTERIOR REGION 10 • CALIFORNIA-GREAT BASIN
CALIFORNIA*, NEVADA*, OREGON*
* PARTIAL



Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Professor Gail Patricelli

Organization/Agency: University of California, Davis

Date: March 1, 2022

Address: 1 Shields Ave, 2320 Storer Hall

City: Davis

State: California

Zip Code: 95616

Cell: 530-902-8983

Phone: 530-754-8310

Email: gpatricelli@ucdavis.edu

Fax: 530-752-1449

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

PROJECT INFORMATION

Project Title: The interaction between restoration, foraging ecology, and mating behavior in Greater Sage-Grouse (year 3)

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: 2022-2023

Project Location: Winnemucca District, Nevada (Santa Rosa Mountains)

Amount of Funds Requested from Heritage Account: \$38,370.00

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 increasing frequency and severity of wildfires in the sagebrush ecosystem is a primary threat to sagebrush species, such as Greater Sage-Grouse (*Centrocercus urophasianus*; sage-grouse). Restoration efforts have focused on regrowth of native plant communities, but we still know too little about the effectiveness of these efforts in protecting species of concern. Studies have addressed sage-grouse population trends and large-scale habitat selection in response to restoration. However, no studies to date have linked wildfire impacts and restoration treatments to foraging behavior (time spent foraging, diet choice in restored areas, and diet quality) and breeding behaviors (display behavior, lek visitations, and mating rate), though these microhabitat-scale processes are critical drivers of population health and habitat use. We propose to continue coordinating with ongoing restoration efforts by NDOW and the BLM, and ongoing large-scale monitoring and habitat-selection mapping by the USGS, to investigate how fire and restoration practices alter sage-grouse microhabitat selection processes.



We have been conducting this work in the Santa Rosa Mountains (Humboldt County, NV), which burned in the 2018 Martin fire, and is in the early stages of restoration. Our 3-year project, which began in spring 2020, has 3 objectives. **Objective 1** is to use non-invasive biomarkers from fecal samples to assay health and diet quality (systemic stress and nutritional stress) of sage-grouse across a mosaic of unburned and recently burned areas, with different types of ongoing restoration (post-fire seeding, herbicide treatment, drill-seeding). Sage-grouse are considered an indicator species of the sagebrush ecosystem due to the expansive range needed to sustain their population numbers (Coates et al. 2020, Hanser & Knick 2011). Therefore, understanding how their systemic and nutritional stress levels are affected by habitat changes due to wildfire and restoration can give us insight into how best to protect sage-grouse and other sagebrush-obligate species (Coates et al. 2020). **Objective 2** is to follow GPS PTT satellite-tagged birds to foraging sites to examine how nutritional quality of sagebrush differs with different burn/restoration status, and to examine sage-grouse diet preference at the large-scale (patch choice) and microhabitat scale (plant choice). This will help us to understand how foraging sage-grouse use different habitat types (unburned areas, remnant patches of sagebrush within burn areas, and areas undergoing different types of restoration), as well as the dietary consequences of these choices. We can use this information to help focus future habitat restoration and improvement efforts on more effective treatments. **Objective 3** is to assess movement of GPS PTT satellite-tagged birds among leks and foraging sites relative to burn/restoration status, and whether the habitat quality of lek sites affects male and female lek behaviors and the browsing on sagebrush or forbs/grasses on the lek area. This component of the project will help to understand how reproductive behaviors—critical for population growth and health—differ after wildfire and with habitat restoration and how they change over the course of the study.

Our preliminary field season in 2020 (funded by UC Davis) was cut short due to COVID-19. However, we were able to lay the groundwork for our 2021 and 2022 field seasons by finding accessible leks, working out field logistics, and collecting lek counts and sagebrush samples to establish a project baseline. In our 2021 spring field season, we deployed 4 PTT tags (2 on males and 2 on females), observed each lek every two days, and collected vegetation (400 sagebrush samples) and fecal pellets (60 fecal samples) at 6 leks across the field site, 3 in burned areas and 3 in unburned areas. For the final spring field season, beginning March 1 2022, we have purchased additional tags and are adapting our field methods to increase our sample sizes and statistical power, as described in more detail below. We anticipate collecting an additional 600 sagebrush samples and 120 fecal samples for chemical analysis.

The objectives below are the same as those in our previous proposals, with some changes to the methods and updates on current progress. The most significant methodological change is the addition of drone imagery during our current field season, which will allow us to vastly expand the scale of habitat mapping around leks, and to examine how habitat quality is changing on islands of remnant sagebrush. Conducting this work during the current and final field season will allow us to link imagery with data collected on the ground, as described in more detail below. To fund drone imagery collection and analysis this spring, we have received approval from our NDOW partners to use the funds previously awarded to us by the Heritage Account that were earmarked for analysis of sagebrush and fecal sample chemistry (\$10,000).

Here, we are requesting 2022-2023 Heritage Account funds to conduct the chemical analyses of our sagebrush and sage-grouse fecal samples collected in the 2020, 2021 and 2022 field seasons, and to support the analysis and publication of our results. The funds we are requesting will replace the \$10,000 we have redirected from chemical analyses to drone imagery. The funds will also cover analysis of additional samples (beyond what we originally proposed), as we expanded our sampling to more-accurately represent the variation among leks in habitat quality. Funds will also pay for PhD candidate Maria Ospina to work with the Forbey lab to process the chemistry samples more quickly and to learn methods for processing and analysis of drone imagery. Analysis of these samples will allow us to understand the impacts of ongoing restoration efforts on habitat quality, diet chemistry, and sage-grouse physiology; these measures will then be linked to field data about bird movement, foraging behavior and breeding behavior on leks. Taken together, results from this project will help us to understand the mechanisms that drive large-scale patterns of habitat selection, informing future restoration efforts in the Santa Rosa Mountains and across the range of the species.

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.):

Throughout the western United States, warmer temperatures have intensified droughts and wildfires (Crockett and Westerling 2018). Fires have increased in size, frequency, and severity since the mid-1980's (Clifford et al. 2018), burning two million hectares per year in the Great Basin since 2014 (Knutson et al. 2014); the effects of fire result in increased fuel load for subsequent fires through the rapid spread of invasive annual grasses, such as cheatgrass. Combined with other ecological stressors, fires have increased fragmentation, reduced biodiversity, and caused changes in ecosystem structure and function (Knutson et al. 2014).

To protect sagebrush obligates of critical conservation concern, such as greater sage-grouse, there has been an increase in active restoration of sagebrush habitat, such as herbicide treatments, post-fire seeding, and drill seeding. These efforts are especially important because wildfire is a primary threat to sage-grouse populations in much of their range (U.S. Fish and Wildlife Service 2015, Foster et al. 2019). Researchers and resource managers are working together to monitor the effects of landscape change on sage-grouse, but the effects of fire and restoration efforts at the microhabitat scale remain poorly understood. Current research efforts at the microhabitat scale, for example, have focused on nest survival and adult female survival as it relates to post-fire habitat condition and cover, how fire regimes are disrupting sagebrush recovery, and modeling of how to restore current landscape characteristics to increase sage-grouse survival (Foster 2019, Coates et al. 2016, Coates et al. 2017). However, few studies have focused on post-fire diet quality and its relationship to on-lek behavior, even though foraging patterns and courtship dynamics can help us understand the effects of landscape changes on reproductive success. We will continue to coordinate with ongoing restoration efforts by NDOW and the BLM, and ongoing large-scale monitoring and habitat-selection mapping by the USGS, to investigate how fire and restoration practices alter foraging and breeding behaviors of sage-grouse across a mosaic of unburned and recently burned areas undergoing different types of restoration.

Microhabitat scale effects can take on different forms. A micro-scale effect can be observed at the lek scale (e.g., which leks sage-grouse visit for mating and nesting), at the habitat patch scale (e.g., how sage-grouse interact with remaining sagebrush patches after fires), or even at the individual plant scale (e.g., which specific plants sage-grouse are eating based on sagebrush toxicity and nutrient quality). Previous research has shown that micro-scale effects can alter survival, mating, and breeding mechanisms critical for sage-grouse survival. Recent work in Idaho by our collaborator, Dr. Jennifer Forbey, used radio-telemetry to locate groups of foraging sage-grouse, then looked for distinctive bite marks on sagebrush leaves to determine which plants were consumed (Frye et al. 2013, Fremgen 2015). These studies provide strong evidence that the dietary quality of sagebrush is more important than cover in explaining foraging-site selection by sage-grouse and pygmy rabbits, with animals choosing patches with more palatable species of sagebrush, and within a patch, preferentially browsing on plants with higher crude protein and lower toxin content (Ulappa 2011, Frye et al. 2013, Fremgen 2015, Nobler 2016). These findings have important implications for management—for example, they showed that “dwarf” species of sagebrush (including black and low sagebrush) are preferred to Wyoming big sagebrush, which was the opposite of some management and restoration recommendations at that time (Frye et al. 2013). Poor diet quality can compromise body mass and reproductive fitness of both mammalian and avian herbivores (Brittas 1988, Guglielmo et al. 1996; Sorensen et al. 2005, DeGabriel et al. 2009), so in addition to driving larger patterns of habitat selection, these foraging choices of individual animals can affect regional population trends.

These studies by the Forbey Lab and others have shown how microhabitat preferences and diet choice can link small-scale movements to patterns of occupancy and abundance at the population scale (Blickley et al 2012a; Forbey et al. 2017). We know little about how and whether microhabitat selection and diet choice change after wildfires and post habitat improvement efforts. One reason to expect these processes to change is that burning and post-fire restoration may cause changes in toxicity and nutritional quality of newly emerging sagebrush seedlings and of mature sagebrush surviving in islands and along the fire periphery. We do not yet know whether these changes will be positive or negative. The reduction in



competition from other plants and the release of nutrients and compounds through burning (Rau et al. 2008) may cause faster growth and lower toxicity. Alternatively, higher toxicity may be expected if increased browsing pressure by herbivores on remaining sagebrush plants induces defensive chemicals (Karban et al 2003). Toxicity may also increase if high-temperature burns slow regrowth by destroying hydrophobic materials and organic matter in soils, especially when soil is overtaken by clay cementation (Glenn & Finley 2010). Resulting changes in toxicity could shift diet preferences and habitat use, especially when travel time is increased to unburned or high-quality patches. Understanding these dynamics will help us to predict how sage-grouse will use habitat restoration treatments relative to remaining habitat after fire. It is particularly important to understand how diet quality changes, how surviving birds use unburned islands and peripheral habitats in the 3-5 years following a fire, and whether early restoration can help populations persist through this critical time.

Changes in diet quality across the post-fire landscape may also drive patterns of lek attendance in and around burned areas. Lek attendance patterns have long been used to monitor population trends, so understanding how birds move among leks can help to interpret attendance numbers after a disturbance (Walsh et al, 2004). Studies to date have shown that leks often persist years after a major fire, likely driven by philopatry of adults (Harju et al. 2010; Foster 2019), but these leks decline without recruitment of younger birds. We still have a great deal to learn about how microhabitat selection by sage-grouse relates to persistence of leks. For example, we know little about how the habitat characteristics of burned lek sites (restoration type, degree of sagebrush and forb/grass regrowth, and proximity to unburned islands of sagebrush or fire perimeter) relate to lek attendance and display behaviors by males and lek visitation and nesting location of females. The strut display of males on leks is energetically costly (Vehrencamp et al. 1989), and males often forage on or near the lek when they are not courting females or fighting rivals. Females also typically forage for much of the time spent on leks (Hartzler 1974, Perry 2019). Thus, leks with closer access to food, or regrowth of forage plants, may be better able to sustain lek activity and may show improved recruitment of younger birds. Females often visit multiple leks when searching for a mate, and typically nest within 5 km of the lek on which they breed, though some nest up to 20 km from the lek (Sika 2006). Examining the relationships between lek visitation patterns, mate choice, on- and off-lek foraging patterns, and patterns of nest-site selection and success will help to understand how different patches of the landscape are linked and may suggest options for targeted restoration to sustain lek activity.

This ongoing project investigates the mechanisms that drive habitat selection by sage-grouse at multiple scales post-wildfire and restoration. By understanding how sage-grouse are using restoration areas, we will understand which efforts are improving the habitat most effectively for sage-grouse. We will do so by collaborating with the USGS on ongoing large-scale monitoring and habitat-selection studies. Dr. Peter Coates and colleagues at the USGS have conducted a large-scale, multi-year study addressing habitat selection and population trends for sage-grouse populations with different types of disturbance, including wildfire, across the range of the species. This study has used VHF and satellite GPS PTT tracking of hens (and some males), to monitor habitat use on a large scale, and to assess nest location, microhabitat characteristics, and fledging success at a small scale (Dudko, Coates, & Delehanty 2019). We will expand upon this extensive USGS effort, which provides access to a population with tagged hens, to address microhabitat selection throughout the breeding season. We will combine measures of plant chemistry and foraging behavior with detailed observation of behaviors on leks, helping to elucidate the mechanisms that underlie microhabitat selection and the consequences of those decisions on reproduction in unburned areas and recently-restored burned areas.

This work is being conducted in the Santa Rosa Mountains in the Winnemucca district (Humboldt County, Nevada), which burned in the devastating 440,000-acre Martin Fire in 2018. This region is critical sage-grouse habitat and the Martin Fire burned 23 active lek sites; therefore, effective restoration of this habitat is critical for maintaining short- and long-term population health in this area and the surrounding region. Our study site (See Map 1) has a mosaic unburned and burned habitat types (hereafter *burn/restoration status*), including unburned areas, which can be in intact areas or islands surrounded by burn, and burned areas, which are undergoing different types of restoration—post-fire seeding, herbicide treatment, drill-seeding, or no active restoration. This diversity of habitat types allows us to examine how

diet quality and habitat characteristics vary in this complex post-fire landscape, and how they are affected by restoration methods.

This project is applying established methods for behavioral monitoring on leks (e.g., Forbey et al. 2017, Patricelli and Krakauer 2010, Blickley et al. 2012a, Koch et al. 2015, Krakauer et al. 2016) to the study of wildfire-impacted landscapes. The work continues our collaboration with Dr. Jennifer Forbey (Boise State University), where we have combined Patricelli Lab methods for collecting behavioral and fitness measures on leks, with Forbey lab methods for measuring diet choice, plant chemistry, and biomarkers of diet and health at multiple field sites in Idaho, Wyoming, and California. The project also continues our collaboration with Dr. Peter Coates from the USGS, with whom the Patricelli and Forbey Labs collaborated in 2017-2019 to study foraging behaviors, diet quality, and lek behaviors of sage-grouse in a California Bi-State population.

Our Santa Rosa Mountain study has three major objectives. **Objective 1** is to use biomarkers from fecal samples to non-invasively measure sage-grouse health and habitat quality across the mosaic of sites with different burn/restoration status. **Objective 2** is to follow telemetry-tagged hens to foraging sites to examine how nutritional quality of sagebrush differs with burn/restoration status, and to examine sage-grouse diet preference at the large scale (patch choice) and microhabitat scale (plant choice). **Objective 3** is to assess movement of telemetry-tagged hens among leks relative to burn/restoration status, and whether the habitat quality of lek sites affects male and female lek behaviors and browsing on sagebrush, forbs, and grasses on the lek area. Detailed methods for these objectives were provided in previous proposals; below we describe progress on these objectives and updates to our methods, as well as plans for the 2022-2023 Heritage Accounts Funds we are requesting here.

2020-2022 Progress and Updated Methods:

Our preliminary field season in 2020 (funded by UC Davis) was cut short due to COVID-19. However, we were able to find leks accessible for detailed monitoring, work out logistics for local housing and field site access, and collect lek counts and sagebrush samples to establish a baseline for the project.

In the 2020-2021 fiscal year, our project was granted \$65,855 from the Wildlife Heritage Trust Account for our first field season of data collection in spring 2021. Much of the equipment we used was previously purchased and thus owned by the Patricelli Lab and UC Davis. This includes the two RV trailers, three ATVs+trailer, spotting scopes, tripods, video cameras, laptops, GPS devices, and field gear (e.g. spotlights and nets for capture, observation blinds, etc). This allowed us to direct more of our Heritage Account funds toward data-collection efforts. In our 2021 spring field season, we monitored 6 leks across the field site, three in burned areas and 3 in unburned areas. On each lek, we observed and filmed behaviors every three days. After birds left the lek in the morning, we collected fecal samples (~10 samples/lek for 60 samples total). We also conducted ~10 vegetation transects per lek to characterize habitat quality (forb, grass, and shrub cover; shrub height; evidence of browsing by sage-grouse). Along these transects, we collected samples of sagebrush for chemical analysis (400 sagebrush samples total).

In spring 2021, we deployed tags near project leks in areas with different burn/restoration status. However, we found that our plan to deploy PTT tags on hens alone was not possible in the time constraints of the spring breeding season. To accomplish Objectives 2 and 3, we must link off-lek foraging behaviors and diet to on-lek breeding behaviors. Therefore, we need to place tags on birds that will visit our 6 monitored leks, rather than unobserved leks; to do so, we need to capture birds near the monitored leks. Last spring, we found that too few females could be captured by spotlighting at night near leks (to minimize disturbance of breeding activity, we did not attempt drop or rocket netting during lekking hours). Hens are easier to capture in the fall, however, those captured by the USGS in fall 2019 and 2020 did not visit our monitored leks; we will use their satellite data for analysis of movement patterns across the landscape, but we cannot link this movement to on-lek behavior. Therefore, we received approval from our NDOW partners to expand our methods to include tagging males. Males can be captured fairly easily, as they roost near their leks at night. In addition, males can be observed performing display behaviors on the lek, allowing us to link individual foraging behavior with display behavior (Forbey et al. 2017). We began tagging males toward the end of the 2021 tagging period, so we ended the season with 2 PTT tags deployed on females and 2 deployed on males.



In the 2021-2022 fiscal year, our project was granted \$69,520.93 from the Wildlife Heritage Trust Account for our second field season of data collection in spring 2022, which will begin March 1. With the funds in this grant, we have hired three experienced field technicians. We also purchased additional 12-gram GPS PTT tags from GeoTrak to track both hens and males. Combined with recovered and unused tags from last spring, we plan to deploy 15 PTT tags this field season. By tagging both males and females from the start of the season, we anticipate that we will be able to deploy all of our tags in a timely fashion. We are currently preparing for departure for the field.

While characterizing habitat quality in spring 2021, we found that islands of remnant sagebrush in burned areas have been decreasing in size and quality. Our first year, we found sagebrush islands that looked to be promising food-sources for sage-grouse—these islands were often a few hundred meters wide, with healthy leaves even on the sagebrush at the edges of the islands. However, in 2021, some of the same islands we visited the year before had much less vegetation—in some cases, these islands had turned into skeletal remains of previously healthy sagebrush. We therefore planning new ways to characterize habitat quality that will better capture these changes and allow us to analyze a larger spatial scale. One way we plan to accomplish this is by using drone imagery this spring to characterize the size and health of sagebrush plants across our leks. We can couple these larger-scale drone habitat measurements with our on-the-ground vegetation sampling techniques and results from our analyses of plant chemistry. Our Boise State University collaborators, Professor Jen Forbey and Dr. Peter Olsoy, have validated the use of thermal drone imaging to characterize sagebrush cover and dietary quality across larger areas than we can sample on foot. The addition of drone imagery will allow us to make better recommendations for future habitat enhancement efforts. For example, drone imagery and chemistry will help us determine which landscape attributes are contributing to increased sagebrush survival and health 4 years post-fire. By linking this information too bird movement and lek behavior, and physiological markers of bird health from fecal samples, we can assess the importance of remnant sagebrush islands and sagebrush regrowth in persistence of lek activity.

Because the habitat is changing quickly, collecting the drone and on-the-ground samples in the same spring is important. Therefore, we have received permission from our NDOW partners to add the drone imagery component to our project in spring 2022, during our final field season of habitat quality measures. To fund the drone work, we will redirect funds previously requested for analysis of sagebrush chemistry and fecal samples (\$10,000 total; \$5,000 from our 2020-2021 grant and \$5,000 from our current 2021-2022 grant). Due to COVID-related slowdowns, these chemical analyses have not yet begun, so these funds are available to be redirected to drone work this spring.

Research Proposed with 2022-2023 Heritage Account Funding

With 2022-2023 funds from the Heritage Account, the third year of the project will be focused on chemical analysis of sagebrush and fecal samples collected in the 2020, 2021 and 2022 field seasons, as well as statistical analysis and writing of manuscripts for open-access publication in peer-reviewed journals. As described above, the funds we previously received for chemical analyses have been redirected to drone imagery, therefore we are requesting replacement funds to begin the chemical analyses this summer. Further, we originally budgeted for 150 sagebrush samples collected per season, but we have collected more than twice this number of samples. We increased our sampling to better characterize variation across our 6 leks, as we have found unexpectedly high variability in sagebrush species, morphotype, and health around leks with different burn/restoration status and among different-sized islands of remnant sagebrush. Characterizing this variability is central to achieving our three research objectives and will help us to interpret the information we will collect in our planned drone imagery. Therefore, we are requesting additional funds for analysis of this larger number of samples.

The funds requested here will cover the per-sample costs for chemical analysis by the Forbey Lab at Boise State University (\$14 per sample for 1,000 sagebrush samples; \$6 per sample for 180 fecal samples); this includes the cost of supplies and technician time. To complete the chemical analyses, graduate student Maria Ospina will live in Boise, Idaho, for three months to help analyze both the sagebrush and fecal samples we have collected. Ms. Ospina will spend a portion of her time in Boise learning from Dr. Peter Olsoy how to apply and analyze the drone imagery at the lek-scale, so that we can compare to and couple drone measures with the plant chemistry across the field site.

Qualifications of the team:

Gail Patricelli is a Professor in the Department of Evolution and Ecology at UC Davis and Chair of the Animal Behavior Graduate Group. Dr. Patricelli is overseeing and assisting in all aspects of the project. Fieldwork for this project is being led by Maria Ospina, who is currently a Ph.D. student in Ecology at UC Davis and a trained USGS volunteer. Ms. Ospina will take the lead in analysis and writing of the results from this project for her Ph.D. dissertation in Ecology, and for publication in peer review journals.

The Patricelli Lab has been working on greater sage-grouse behavior and conservation for 16 years. We have successfully used the methods proposed here at sites in Wyoming (near Lander, Fremont County), California (Bi-State population, near Lee Vining, Mono County), and a successful pilot field season (2020) and first field season (2021) at the Santa Rosa site. We have published extensively on the breeding behaviors of sage-grouse, using the methods for observation proposed here (Patricelli and Krakauer, 2010; Koch et al. 2015; Krakauer et al. 2016; Forbey et al. 2017; Perry et al. 2019). We have a strong record of working with resource managers to find solutions to conservation concerns—we conducted experimental studies demonstrating the impacts of noise from energy development on the abundance and behavior of sage-grouse on leks (Blickley et al. 2012a, 2012b, and 2012c); we translated these results into recommendations for improving conservation planning for this species (Blickley & Patricelli 2010; Patricelli et al. 2013) and consulted with resource managers to help implement these recommendations into management practice. Using methods developed by our collaborator, Dr. Jennifer Forbey from Boise State U., we have used VHF and GPS satellite tags to track birds to foraging locations at both our Wyoming (2014-2017) and California Bi-State (2017-2019) field sites and at the Forbey Lab sites in Idaho (2013-2019), where we have collected and analyzed sagebrush samples using the protocols proposed here (Frye et al. 2013; Forbey et al. 2017). Our work in the Bi-State and Santa Rosa populations has been done in collaboration with Dr. Peter Coates of the USGS; the USGS has worked at the Santa Rosa site successfully for 5 years (2016-2018 and 2020-2021). We coordinated with the USGS local crews to help capture and tag sage-grouse, then we followed these birds to foraging and lek sites to measure diet choice and behavior. We have thus been adding a new angle and new depth to this ongoing USGS study. We are confident in our ability to complete the proposed research at the Santa Rosa field site because of our past experience, the success of our first field seasons, and our collaboration with the USGS

Our work is covered under existing USGS research permits and USGS Western Ecological Research Center Animal Care and Use Protocol #WERC-2015-02. Our UC Davis Animal Care and Use permit (IACUC# 21721) for this work is valid through April 2023.

How Would this Project Help with “the protection, propagation, restoration, translocation, 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)

This study will support goals of improving the scientific foundations for sage-grouse management on public lands, both locally and across the range of the species. This project will contribute to understanding critical population drivers at the microhabitat scale during the first few years following fire, a time period when sage-grouse survival and persistence of leks is known to decrease. Our results will inform restoration efforts in multiple ways. First, this project uses non-invasive biomarkers of systemic stress and nutritional stress in sage-grouse to improve our understanding of the links between habitat quality and the health of birds, an important tool that may be applied to other areas recovering from fire. Second, by improving our understanding of habitat use, diet quality and on-lek behavior, results of this study inform range-wide management efforts as well as local management of the recovering Santa Rosa population. Third, our data will be shared with BLM, NDOW and USGS to support ongoing efforts to inventory sagebrush habitat in the region. Thus our study supports one of the key conservation goals identified by the Heritage Fund: to maintain, restore, enhance, and propagate sage-grouse habitats in order to maintain and increase sage-grouse populations, using biological data and information to identify needs for each of the habitat types. We will share the outcomes of our proposed work with conservation management agencies and the public through publication in peer-reviewed open-access journals, as well as through presentations at conferences, to stake-holders, and to the community.

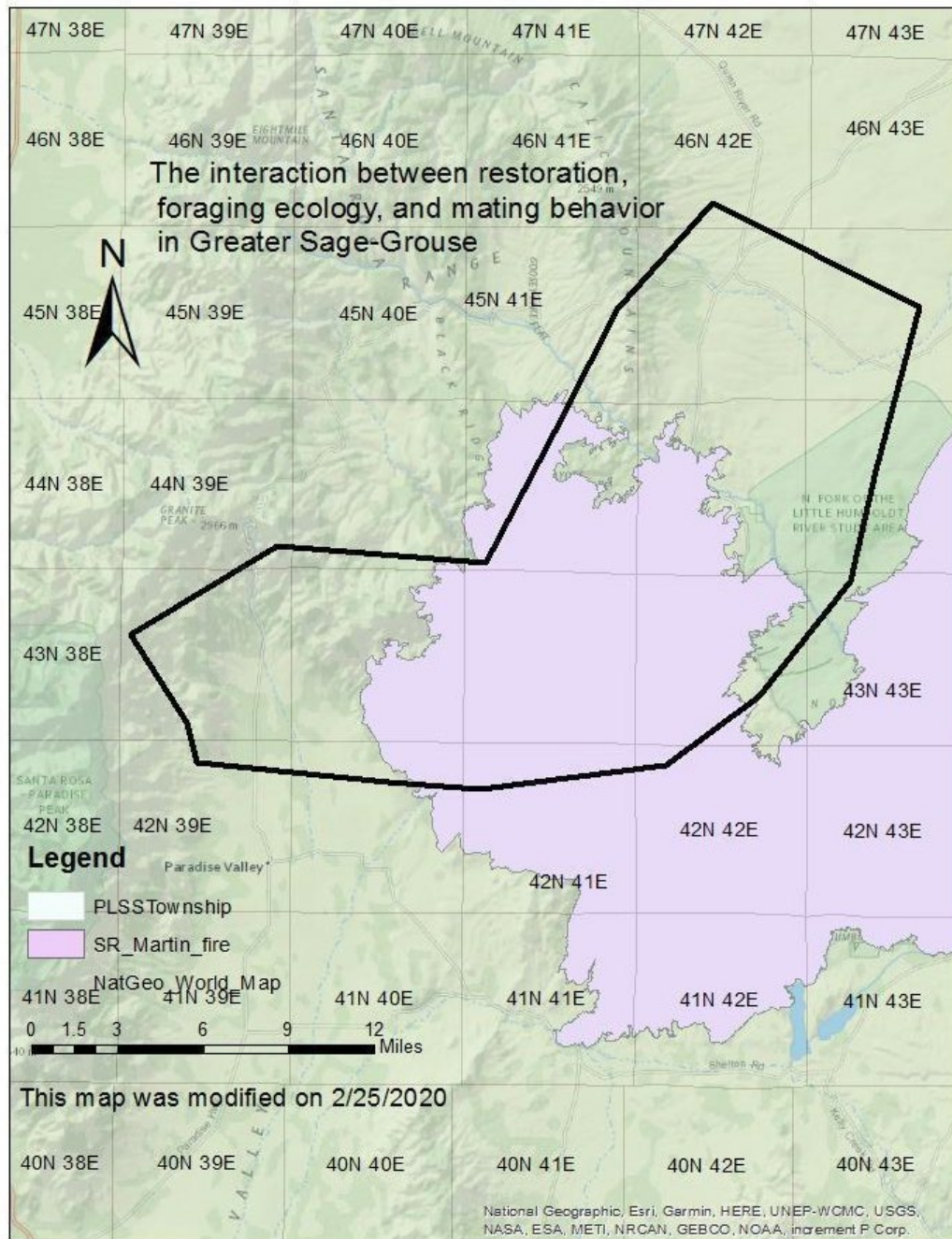


Legal Description of the Property on Which the Proposed Project is to be Located (must include the property address, access roads, township, range and section):

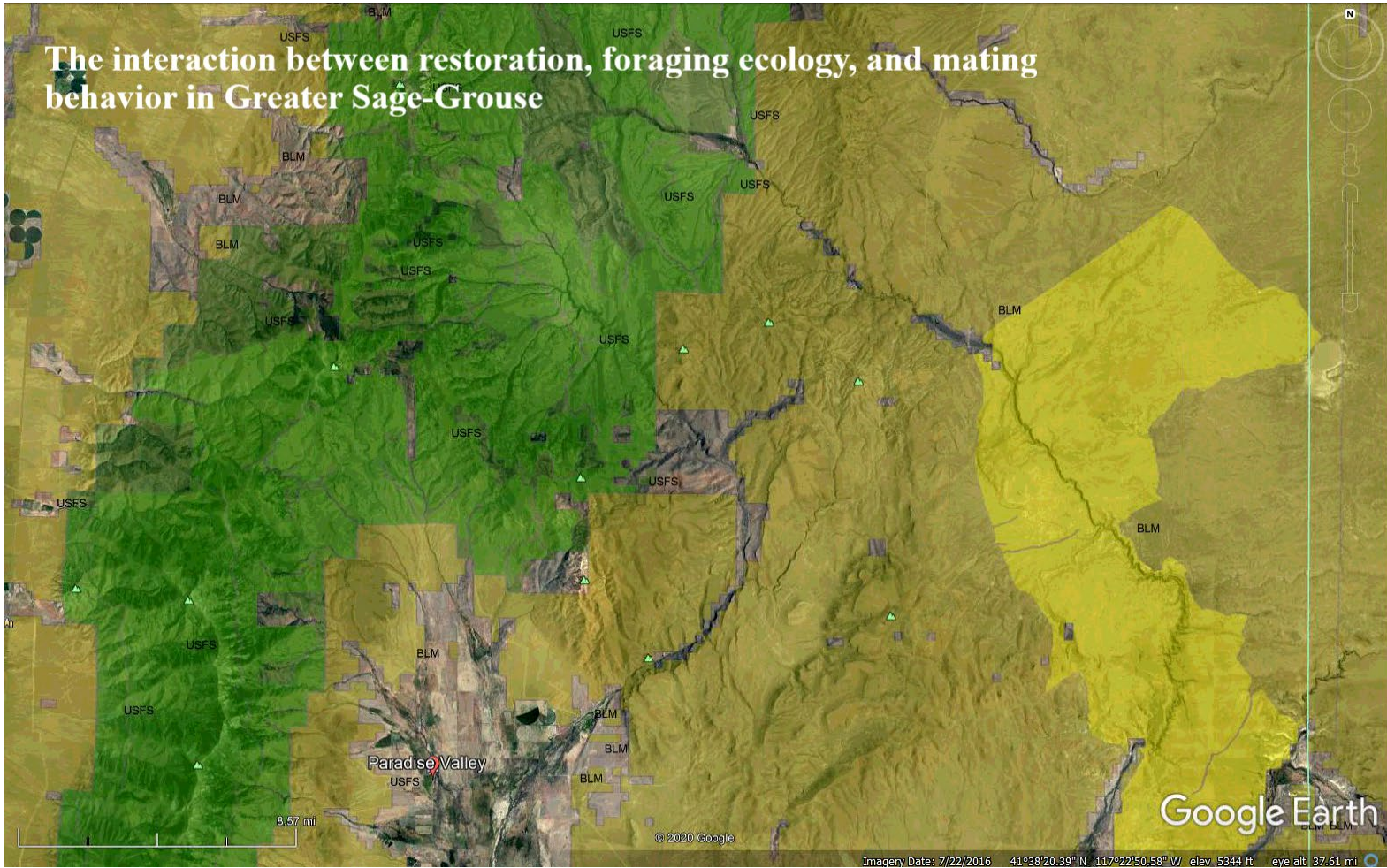
The Santa Rosa field site, where this project is taking place, is located in portions of Townships 42-44 North, Range 39 East; Townships 42-44 North, Range 40 East; Townships 42-45 North, Range 41 East; Townships 42-46 North, Range 42 East; Townships 43-45 North, Range 43 East (See Map 1). From Paradise Valley to leks and bird-directed foraging locations, we will be taking Martin Creek Rd and Hinkey Summit Rd primarily; access to leks will also require smaller gravel and two-track roads on public land.

The Santa Rosa field site is mainly on public lands, managed by the BLM; the western edge of the site includes US Forest Service System lands (see Map 2; acquired from the USGS). There are patches of privately-owned land in some remote parts of the site, but researchers have not had problems with access to these areas in the past.

Map 1: This map shows the approximate area encompassing our study leks (large black polygon in the center of map). We are studying 6 leks located in the portion of the area burned by the Martin fire shown (purple) and around the perimeter of the fire for comparison. This map also shows township and range and Paradise Valley. From Paradise Valley, where the field crew will live for the project’s duration, we will travel to leks and tagged bird locations by taking Martin Creek Rd and Hinkey Summit Rd primarily. Access to leks will also require smaller gravel and two-track roads on public land.



Map 2: This map shows the entire Santa Rosa Mountains region, which is primarily public land. The majority of the Santa Rosa field site is managed by the BLM (olive and yellow areas), overlapping US Forest Service System lands in the west (green).



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#H23-16



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:

Our objectives center around understanding how fire and post-fire restoration efforts are affecting population health and habitat use in a culturally important game bird, the greater sage-grouse. Without examining how fire and restoration efforts affect sage-grouse diet quality, we would be missing one of the most important drivers of habitat use at large and small scales. We are requesting Wildlife Heritage Account Funding because our objectives dovetail with the goals and purpose of the funds: “for the protection, propagation, [...] restoration” of wildlife.

Project Duration: one year two years three years more

Estimated Start Date: July 1, 2020

Estimated End Date: June 30, 2023

**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.

NOTES: While we are only listing as “All Other Costs” those funds from UC Davis that can technically be considered matching funds, there are additional resources and complementary contributions from UC Davis and USGS to the project, which will allow us to leverage Wildlife Heritage funds to the fullest.

UC Davis:

- Maria Ospina, the UC Davis Ph.D. student who will run the project, is funded by a National Science Foundation Graduate Research Fellowship. She will work full time on this project, but her stipend and benefits will be paid by this fellowship.
- We have three ATVs and a trailer for ATV transport that will be used for the project. We also have a 34’ travel trailer and a 17’ camper trailer that will be used for housing.
- We have 5 Sony HD camcorders that will be used to film behavior on the lek, field laptops, and computers and servers on the UC Davis campus, where videos will be analyzed. We have spotting scopes, tripods and hunting blinds for lek counts and observations. We also have the needed equipment and supplies for measuring habitat characteristics and sampling sagebrush.
- UC Davis will provide ‘overhead’—e.g. office space, library access, and support personnel.



1. Heritage Trust Fund cash amount requested	<u>\$38,370.00</u>
2. Other cash funding sources for this project	\$69,375.00
a.	_____
b.	_____
c.	_____
d.	_____
e. Total other cash funding sources (lines a - d)	<u>0</u>
3. Donations for this project	
a. Volunteer time	_____
b. Equipment	_____
c. Materials	_____
d.	_____
e.	_____
f.	_____
g.	_____
h. Total donations (lines a - g)	<u>0</u>
4. Total Project Funding	<u>\$107,745.00</u>
(add lines 1, 2e,3h)	



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.

	Heritage Costs	All Other Costs
1. Land Acquisition	\$-	\$-
2. Personnel		
a. 2 months of effort for PI Patricelli (including benefits at federally approved FY20 UC rates)		\$69,375.00
c. Total Personnel costs	\$0.00	\$69,375.00
3. Travel (NDOW travel costs can't be included in the Heritage column)		
a. Per diem \$22/day for 3 months in Boise, Idaho (Maria Ospina)	\$2,002	
b. Average rent in Boise (\$1,554/month) for 3 months	\$4,662	
c. Personal car reimbursement (\$0.56/mile) to and from Boise (567 miles x 2), plus transit to and from the lab within Boise	\$2,399	
e. Total Travel Costs (lines a & b)	\$9,063	\$-
4. Equipment Items		
a. ARGOS downloads (9 tags x \$63/tag/month, from August-February [6months]. 15 tags x \$63/tag/month for 5 months)	\$8,127.00	\$-
e. Total Equipment Costs (line a - e)	\$8,127.00	\$-
5. Materials		
e. Total Materials Costs (line a - e)	\$0.00	\$-
6. Miscellaneous Costs		
a. Invoice Boise State University (1,000 plant samples at \$14/sample and 180 fecal samples at \$6/sample)	\$15,080	
b. Open-access publication costs (3 scientific papers, \$1,700/paper based on current rates for PLOS ONE)	\$5,100	
c. Misc expenses	\$1,000.00	
d. Total Miscellaneous Costs (lines a - d)	\$21,180.00	\$-
7. Total Heritage Costs Only	\$38,370.00	
(add lines 1, 2, 3c, 4d, 5e, 6e)		
8. Total All Other Costs		\$69,375.00
(add lines 1, 2, 3c, 4e, 5e, 6e)		
9. Total Project Costs	\$107,745.00	
(add lines 7 & 8)		
(Note: total project funding from previous table must match total project costs)		

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- Welch, B. L., F. J. Wagstaff, and J. A. Roberson. 1991. Preference of wintering sage grouse for big sagebrush. *Journal of Range Management*:462-465.
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Available High-Resolution Imagery Be Used to Identify Brood-Rearing Habitat Across a Broad Landscape? PLoS ONE 11:e0156290.

Wilmers, C. C., B. Nickel, C. M. Bryce, J. A. Smith, R. E. Wheat, and V. Yovovich. 2015. The golden age of bio-logging: how animal-borne sensors are advancing the frontiers of ecolog. Ecology 96:1741-1753.



Supplementary Documents

Letter of Support for matching funds from UC Davis

Letter of approval from the UC Davis Office of Research



March 1, 2022

Nevada Department of Wildlife
6980 Sierra Center Parkway, Suite 120
Reno, NV 89511

Proposal entitled: "The Interaction between restoration, foraging ecology, and mating behavior in Greater Sage Grouse"
Principal Investigator:..... Gail Patricelli

Dear Administrator:

On behalf of The Regents of the University of California, Davis Campus, it is our pleasure to present for your consideration the above-referenced proposal in response to funding announcement "Wildlife Heritage Account Project."

In the event this proposal results in an award to UC Davis, we would expect to enter into good faith negotiations to agree upon conditions that are mutually acceptable to both parties.

Please do not hesitate to contact me if you have any questions. We request that correspondence pertaining to this proposal be sent via email to proposals@ucdavis.edu or mailed to the Office of Research Sponsored Programs Office, 1850 Research Park Drive, Suite 300 Davis, CA 95618-6153.

We look forward to working with you on this important project.

Sincerely,

Sarah Smith
Contracts and Grants Analyst

**Please refer to Proposal No 22-2996 on all future correspondence.*

Send Award Notice to:

Office of Research, Sponsored Programs
1850 Research Park Drive
University of California
Davis, California 95618-6153
awards@ucdavis.edu

Send Checks (Payable to The Regents of the University of California) to:

UC Davis AR Lockbox
PO Box 741816
Los Angeles, CA 90074-1816
Phone: 530-752-0460
cashier@ucdavis.edu



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COLLEGE OF BIOLOGICAL SCIENCES
DEPARTMENT OF EVOLUTION AND ECOLOGY
<http://www.eve.ucdavis.edu>

ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8755
FAX: (530) 752-1449

February 25, 2022

Nevada Department of Wildlife
6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511

RE: Letter of Support – Matching Funds

This letter is to provide departmental support of Professor Gail Patricelli's effort on the proposed project entitled "The interaction between restoration, foraging ecology, and mating behavior in Greater Sage-Grouse " for the budgeted period July 1, 2022 to June 30, 2023. She has advised that she will devote 16% time to the project. We authorize the equivalent salary and associated costs to be used as matching funds in support of the proposal as listed in the budget document.

If further information is needed, please do not hesitate to contact me.

Sincerely,

John J. Stachowicz
Professor and Chair
Department of Evolution and Ecology

JJS:SH



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Wildlife Heritage Account Project Proposal Form

APPLICANT INFORMATION

Person Submitting Proposal/Project Manager: Shane Boren and Jake Brunson

Organization/Agency: White Pine Conservation District

Date: 3/1/22

Address: 744 N. Industrial Way City: Ely

State: NV Zip Code: 89301

Cell: Shane, 775-296-0903; Jake, 775-296-1011 Phone:

Email: (Shane) shaneb@mwpower.org and (Jake) brunsonranches@gmail.com Fax:

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

Moira Kolada

PROJECT INFORMATION

Project Title: White Pine County Mastication and Brush Treatments

State Fiscal Year(s) Wildlife Heritage Account Funds are Needed: 2023

Project Location: Horse and Cattle Camp Wash and Duck Creek Basin, White Pine County

Amount of Funds Requested from Heritage Account: \$150,000

Is a Project Map Attached? Yes [X] No []

(a map must include the project title, map scale, date map was created, and a north arrow; Note that we will need project spatial information in the future if funded)

Project Partners/Organizations and Roles (Implementation Lead, Agency Cooperator, Non-Agency Cooperator, Private Landowner):

White Pine Conservation District, project applicant and administrator
Lauren Williams, DCNR, implementation lead



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NDOW, agency cooperator
 BLM, agency cooperator
 Jacob Carter, private landowner
 George Hall, private landowner

Define Priority Resources (Big Game, Diversity, Fish, General Habitat Improvement, Waterfowl, Upland Game): General Habitat Improvement for Big Game, Upland Game, and Diversity

Select Priority Species (e.g. Sage-grouse, mule deer, etc.): Sage grouse, mule deer, elk

Is this Project related to an Project Initiatives (e.g. NDOW Mule Deer Enhancement Program, Sagebrush Ecosystem Program, Shared Stewardship, NRCS Sage-grouse Initiative, NV Biodiversity Initiative, Sagebrush Conservation Initiative, Monitoring and Research, etc.): No

Project Activities (e.g. Conifer Removal, Fire Rehabilitation, Fuels Management, Riparian Enhancement, Acquisition, Population Monitoring or Research, etc.): Conifer removal, fuels management, riparian enhancement

Does the Project benefit Greater Sage-grouse or their Habitat (Yes/No): Yes

Purpose of the Projects:

Jacob Carter property at Horse and Cattle Camp, Cave Valley:

This project will add to work planned in Cattle Camp Wash by BLM. Pinyon and juniper need to be thinned out to prevent encroachment into the valley bottom. Rabbit brush treatments will also be put in place to restore the land to its natural wet meadow state.

George Hall property in Duck Creek Basin:

Property in Duck Creek needs to be masticated in order to reduce fire risk. Due to multiple years of unseasonably dry weather, piling slash for burning is not a viable option. Also, there is not a qualified entity ready and willing to burn any kind of vegetation. This property is adjacent to BLM and USFS, which both have active and/or planned pinyon and juniper removal in the basin. Mastication will complete work on this property and reduce fire risk by eliminating the fuel load.

Combining this smaller project with the larger project at Horse and Cattle Camp lowers the cost of mastication due to increased acreage.



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Detailed Description of Project and Rationale (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.):

These projects will start in Cattle Camp Wash with pinyon and juniper thinning and rabbit brush treatments. Mastication is the preferred method of tree thinning for a couple of reasons: 1) cut and pile creates an issue because there currently isn't a qualified source for pile burning; 2) lop and drop creates an abundance of dead biomass which creates a fire hazard if not removed (and it can't be safely burned). Overgrown rabbitbrush will be mowed and sprayed concurrently to increase effectiveness. This will be completed during the late summer, two years in a row, per contractor expertise. These treatments will be in conjunction with BLM who plans to treat rabbit brush and thin pinyon and juniper under existing NEPA, South Steptoe Watershed Restoration Plan EA.

Jacob Carter will provide match and landowner investment by using his equipment to mow rabbitbrush as Tri County Weed sprays. Mr. Carter's match includes time on his machine, the machine itself, as well as fuel for both treatments.

George Hall's property in Duck Creek Basin also needs mastication to breakdown pinyon and juniper piles. PJ was cut last fall on the property and needs removal. This project is in conjunction with USFS's and BLM's PJ mastication efforts in the basin. BLM started theirs last year.

How Would this Project Help with "the protection, propagation, restoration, transplantation, 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)

This project meets these objectives in multiple ways: 1) removal of pinyon and juniper biomass will reduce fire hazards during an era of recent record-breaking dry weather, and make way for existing understory; 2) these efforts benefit local wildlife by increasing availability of forage; and, 3) mastication will increase insect activity. Restoration of Nevada's wildlife habitat will, in turn, protect numerous wildlife species by providing more natural habitat conditions capable of supporting a diversity of wildlife.

Project Schedule (describe key milestones for project implementation):

Mastication will start late summer or early fall and continue as weather permits. Rabbitbrush treatments will occur late summer in 2022 and 2023.

Does this Project have a Monitoring Plan and if so, please describe:

Carter property: This project will include two years of rabbitbrush treatments, photo monitoring will be utilized to document: regrowth after removal and effectiveness of treatment including direct



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removal and chemical/biological treatments. Photos will be available with completion report. PJ thinning will be observed the first year in order to determine if drill seeding would be beneficial for the area. Historically, ground cover on this property has been substantial.

Hall property: Photo monitoring will take place to compare ground cover pre/post tree removal and mastication. Ground cover on the property is currently healthy with forbs, bunch grasses, and bio crusts.

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):

Property addresses are not available for these locations.

Access road for Jacob Carter property: Highway 93 south out of Ely, turn south on Cave Valley Road and follow for approximately 21 miles. Turn south at large yellow school bus and follow road for approximately 4 miles.

T: 11N R: 65E S: 12,7,8

Access road for George Hall property: Highway 93 north out of Ely for approximately 18 miles, turn east onto the Duck Creek Basin road. After 3.5 miles, turn north towards Kalamazoo and East Creek. Follow East Creek road for about a mile, turn into driveway.

T: 23N R: 66E S: 30

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:

This project is the epitome of collaborative wildlife habitat restoration. Removal of appropriate pinyon and juniper with potential drill seeding once effectiveness has been observed. Local ungulates and birds will greatly benefit from increased water supply and forage provided due to a decrease in pinyon, juniper, and rabbitbrush on both properties.



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Project Duration: one year two years three years more

Estimated Start Date: August 2022

Estimated End Date: October 2023



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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		\$ 150,000.00
2. Other Cash Funding Sources for this Project		
a.		
b.		
c.		
d.		
e. Total Other Cash Funding Sources (lines a - d)		\$ -
3. In-kind Services for this Project		
a. Volunteer Time: 40 hours @ \$28.54/hour		\$ 1,141.60
b. Equipment: Mower provided by landowner (\$80/hour for 40 hours)		\$ 3,200.00
c. Materials: 40 gallons of fuel @ \$5/gallon		\$ 200.00
d.		
e.		
f.		
g.		
h. Total Donations/In-kind Services (lines a - g)		\$ 4,541.60
4. Total Project Funding	\$ 154,541.60	
(add lines 1, 2e,3h)		



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PROJECT COSTS

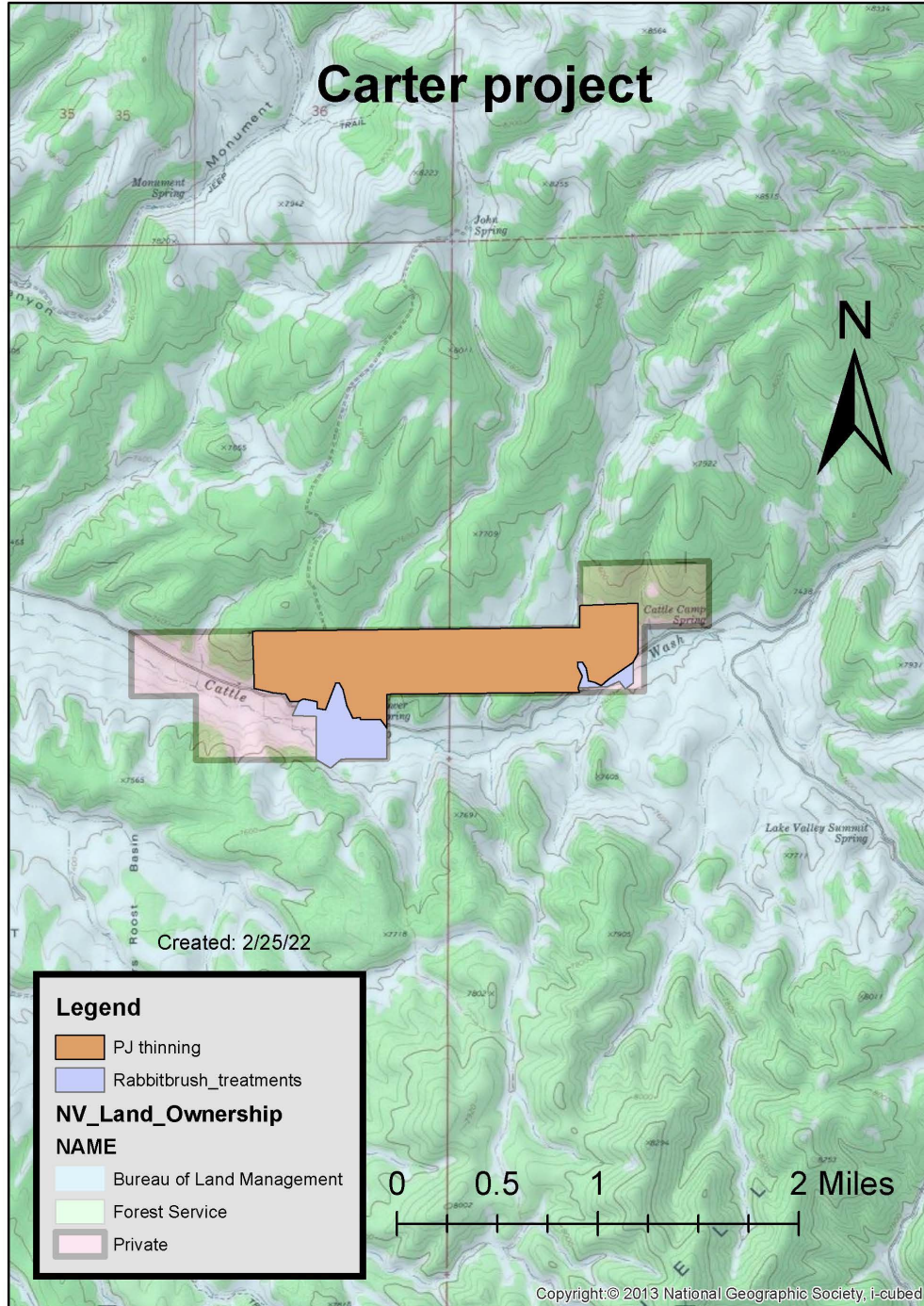
The cost breakdown below should cover the total costs of the project you are seeking funding for. NOTE: THE HERITAGE ACCOUNT CANNOT BE USED TO PAY INDIRECT COSTS. Double click on the table to activate



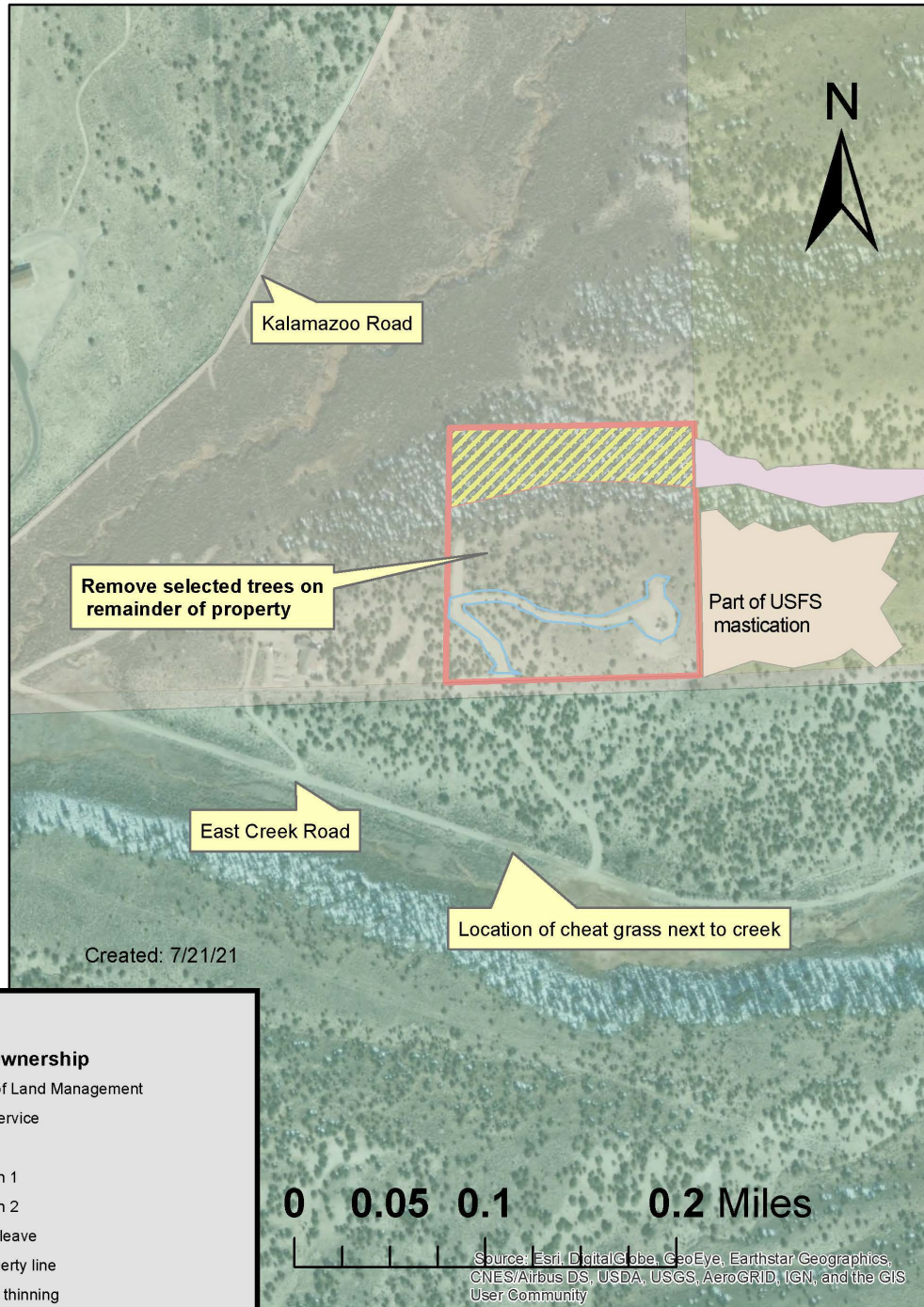
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the embedded spreadsheet.

	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. Mower (match)		\$ 3,200.00
b.		
c.		
d. Total Equipment Costs (line a - c)	\$ -	\$ 3,200.00
5. Materials		
a. Fuel for mower (match): 40 gallons @ \$5/gallon		\$ 200.00
b.		
c.		
d.		\$ -
e. Total Material Costs (lines a - d)	\$ -	\$ 200.00
6. Miscellaneous Costs		
a. Mastication costs	\$ 140,000.00	
b. Rabbitbrush treatments (two years)	\$ 10,000.00	
c. Volunteer time: 40 hours @ \$28.54/hour (landowner)		\$ 1,141.60
d.		
e. Total Miscellaneous Costs (lines a - d)	\$ 150,000.00	\$ 1,141.60
7. Total Heritage Costs Only (add lines 1, 2, 3c, 4d, 5e, 6e)	\$ 150,000.00	
8. Total All Other Costs (add lines 1, 2, 3c, 4e, 5e, 6e)		\$ 4,541.60
9. Total Project Costs (add lines 7 & 8)	\$ 154,541.60	
(Note: total project funding from previous table must match total project costs)		



Duck Creek Multi-Agency Sage Grouse Habitat Improvement



Legend

NV_Land_Ownership

- Bureau of Land Management
- Forest Service
- Private
- FS option 1
- FS option 2
- Trees to leave
- Hall property line
- Potential thinning
- Lek_data_2019
- South_Schell_PJ_Whacking_Project_Area