

## **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) 2019 and 2020. It also includes brief status reports for projects that were still active as of April 10, 2020.

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 FY19 and 20; expenditure data is according to DAWN as of April 10, 2020)

Heritage Project Number	Name of Heritage Project	Project Manager	Heritage Award Amount	Dollars Spent as of April 10	Status of Project
18-05	Overland Pass Pinyon and Juniper Thinning	Caleb McAdoo, NDOW	\$75,000	\$0	Ongoing; expected to be completed this fall/next spring
18-06	Goshute Mountains Springs Protection	Matt Glenn, NDOW	\$45,000	\$25,393	Completed
18-10	Robinson Spring Complex Exlosures in the Diamond Mountains	Moira Kolada, NDOW	\$75,000	\$0	Ongoing; expected to be completed this fall/next spring
18-11	Cheatgrass Research Using Herbicides and a Biological Control Agent	Moira Kolada, NDOW	\$22,900	\$0	Ongoing; expected to be completed this summer
19-06	South Steptoe Watershed Restoration	Moira Kolada, NDOW	\$35,000	\$35,000	Completed
19-07	Kern Mountain Habitat Improvement Project	Moira Kolada, NDOW	\$30,000	\$0	Ongoing; expected to be completed this fall
19-08	Izzenhood Basin Habitat Improvement Project	Matt Glenn, NDOW	\$30,000	\$29,831	Completed
19-09	Bighorn Sheep Gene Transcription Analysis	Nate LaHue, NDOW	\$84,500	\$87,500	Ongoing; analysis completed; final results expected this summer
19-10	Comins Lake Boat Ramp	Shane Boren, White Pine CAB	\$55,000	\$0	Ongoing; expected to be completed this fall/next spring
19-11	Rebuild of Last Chance #6 Hanging Basin Water Development	Clint Bentley, Fraternity of the Desert Bighorn	\$25,100	\$14,410	Completed
19-13	Simkins/Docs Pass PJ Chaining Maintenance Project	Cory Lytle, Lincoln County CAB	\$75,000	\$75,000	Completed
19-14	Cave Valley Ranch PJ Removal Project	Lauren Williams, DCNR	\$59,674.01	\$35,476	Ongoing; expected to be completed this fall
20-01	Bighorn Sheep Capture, Transplant, and Monitoring	Mike Cox, NDOW	\$100,000	\$83,339	Completed
20-02	Wildlife-Related Restoration and Seed Purchase	Lee Turner, NDOW	\$115,000	\$115,000	Completed

### Recently Completed and Active Wildlife Heritage Projects

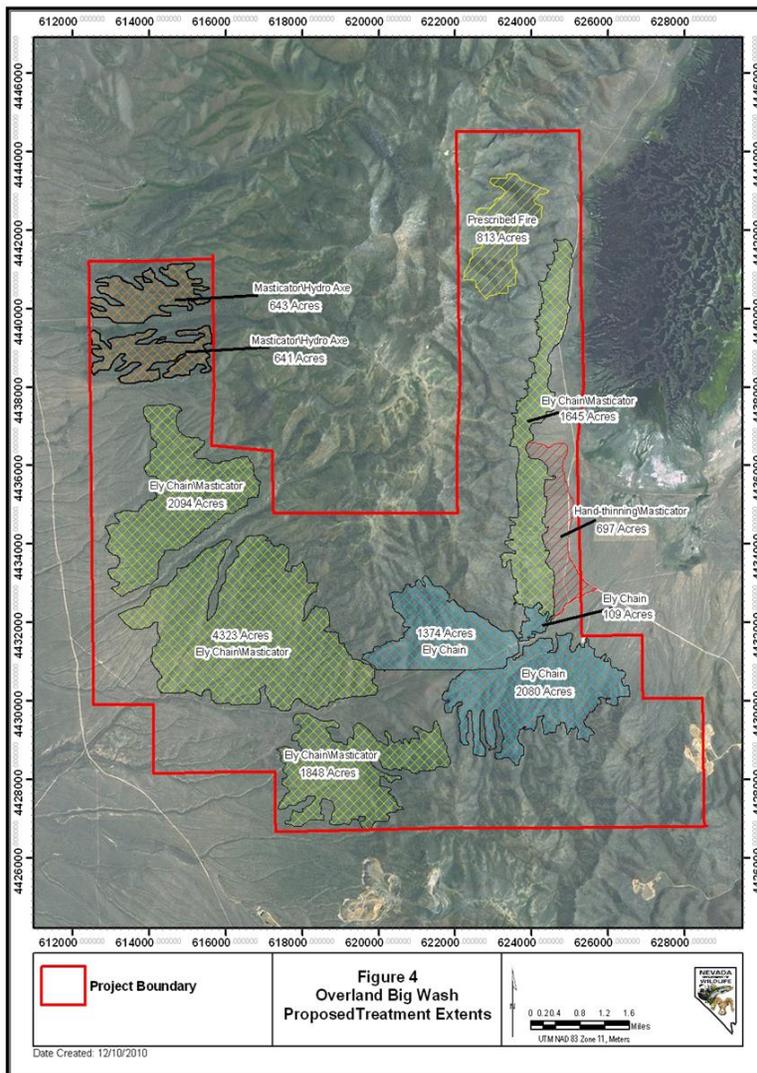
(active projects and those completed during FY19 and 20; expenditure data is according to DAWN as of April 10, 2020)

Heritage Project Number	Name of Heritage Project	Project Manager	Heritage Award Amount	Dollars Spent as of April 10	Status of Project
20-03	South Mountains Habitat Restoration	Moira Kolada, NDOW	\$75,000	\$0	Ongoing; expected to be completed by end of year
20-04	Toole Springs Lek Juniper Removal	Matt Glenn, NDOW	\$75,000	\$17,872	Completed
20-05	Egan Johnson Basin Restoration	Moira Kolada, NDOW	\$70,000	\$0	Ongoing; expected to be completed by end of year
20-06	North Cave Valley Habitat Restoration	Moira Kolada, NDOW	\$60,157.65	\$0	Ongoing; expected to be completed by end of year
20-07	Prioritizing and Protecting Natural Water Resources	Cody Schroeder, NDOW	\$50,000	\$0	Ongoing, expected to be completed by spring 2021
20-08	Monitoring Moose Expansion in Nevada	Cody McKee, NDOW	\$28,000	\$12,205	Completed
20-09	Big Game Survey Tool	Cody McKee, NDOW	\$70,000	\$0	Ongoing, expected to be completed by spring 2021
20-10	Maximizing the Effectiveness of Common Raven Removal	Pat Jackson, NDOW	\$70,000	\$48,194	Ongoing, expected to be completed by spring 2021
20-11	Survey and Maintenance of Existing Big Game Water Developments	Clint Bentley, Fraternity of the Desert Bighorn	\$36,000	\$36,000	Completed
20-12	Staheli Chaining Maintenance Project	Cory Lytle, Lincoln County CAB	\$75,000	\$51,603	Ongoing, expected to be completed this fall
20-13	Blacktop Apron Guzzler Upgrade	Clint Bentley, Fraternity of the Desert Bighorn	\$21,400	\$0	Ongoing, expected to be completed this summer/fall
20-14	Mormon #3 "Prospect" Guzzler Upgrade	Clint Bentley, Fraternity of the Desert Bighorn	\$21,615	\$0	Ongoing, expected to be completed this summer/fall
20-15	Douglas Canyon PJ Removal Project	Lauren Williams, DCNR	\$50,000	\$5,725	Completed
20-16	Bighorn Disease Susceptibility Analysis	Matthew Blackburn, Fraternity of the Desert Bighorn	\$62,530	\$0	Ongoing, work expected to be completed spring 2021
Totals			\$1,588,877	\$557,550	

## 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.

The majority of this project work has been completed. The bids came back lower than expected so an additional SOW has been prepared to complete some additional acres for the project. This SOW is currently awaiting release.



## 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.



**Heritage Project 18-10: Robinson Spring Complex Exclosures in the Diamond Mountains**

The Robinson Spring Complex burned in the 2015 Diamond Fire. The Diamond Fire burn area was aerielly seeded by the Ely BLM with assistance from NDOW. However, because of the terrain and other

restrictions the BLM was unable to construct temporary fencing to protect the fire from wild horses and drifting cattle. The allotment has been closed to cattle grazing for at least two years. Since fencing the entire burned area was not an option, the burn area was examined to determine if there were any high priority areas that would benefit from permanent fencing. During this process the Robinson Spring Complex was identified by NDOW biologists as being important for both mule deer and sage grouse and would benefit from permanent fencing to manage wild horses and livestock. The grazing permittee and water right holders are in favor of the project and have been involved with the fence design and layout.

The fence layout encompasses the main spring complex as well as two smaller spring complexes which will allow water to flow out of the enclosures providing access to water for livestock and horses. The fence design is a modified pipe rail design, with steel posts and wooden rails. This design was chosen for its ability to withstand pressure from cattle and horses while still allowing access to all wildlife. In addition, the BLM anticipates this style of fencing will be easier for their personnel to maintain since there will be no welding required.

Approximately 50 were originally identified for enclosure; NDOW put the project out to bid however the bids came back much higher than expected. NDOW has been working with the BLM to revise the scope and the design of the fences. The current plan is to use the Heritage dollars to purchase the materials and the fence construction will be done in house.

#### **Heritage Project 18-11: Cheatgrass Research Using Herbicides and a Biological Control Agent**

This ongoing project in southern Newark Valley along the White Pine Mountain Range and in south Steptoe Valley along the Egan Mountain Range will treat eight test plots of 5 acres each to gauge the efficacy of Imazapic and Rimsulfuron in suppressing cheatgrass within post-wildfire plots.

Ely BLM is completing NEPA for this project this winter and it is anticipated that this project will be completed by late summer 2020.

#### **Heritage Project 19-06: South Steptoe Watershed Restoration**

3,206 acres were treated for Pinyon-Juniper removal using a hand crew. The areas prioritized by the 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 design encompassed a variety of features to benefit other game and non-game wildlife species.

The treatments completed in South Steptoe will dovetail into the proposed treatments in North Cave Valley, creating a larger contiguous area of habitat improvement. The removal of these trees at this stage is a cost-effective way to maintain and enhance these sagebrush and mountain brush communities. At this point in time shrub, forb, and grass species are still present, having not yet been outcompeted by the encroaching trees.

#### **Heritage Project 19-07: Kern Mountain Habitat Improvement Project**

There was a delay in receiving notification of match dollars for this project, but the contract for the project was awarded earlier this year. The targeted completion date for this project is September 2020.

The Bureau of Land Management (BLM) Ely District, in coordination with the Nevada Department of Wildlife (NDOW) has identified approximately 1,100 acres of being affected by pinyon and juniper encroachment and eligible for treatment under the Kern Mountain Landscape Restoration Project EA. Treatment will consist of complete removal of pinyon and juniper within the treatment area. Islands and stringers are being designed to benefit big game, upland game, and nongame species. Tree removal will be done by hand crews with the use of chainsaws. Trees will be cut as close as possible to ground level with a maximum stump height of 12 inches. Cut trees will be lopped and scattered/leave.

#### **Heritage Project: 19-08: Izzenhood Basin Habitat Improvement Project**

In the fall of 2019 approximately 1,155 acres were treated with the pre-emergent herbicide Esplanade to prepare for future sagebrush seedling transplants with the goal of reestablishing critical winter nule deer habitat. The initial project design incorporated the use of Imazapic as the pre-emergent herbicide, however the Nevada Department of Agriculture was granted a section 18 exemption to lift grazing restrictions for Esplanade allowing for its use in this project. Based upon recent literature Esplanade was selected due to the project sites soil profile and the Esplanades chemistry allowing it to bind in sandy soils as well as limited organic matter present in the first soil horizon where the annual grass bank persists. As this project requires different phases because of the required fallow period after the use Esplanade all successive sagebrush seeding will need to implemented in years to come however seedling planting can be implemented as early as this fall.

The Izzenhood Mountains and the proximal area account for nearly one third of the Area Six mule deer herds crucial winter habitat making its compromised range a priority for projects such as this. Other species that will likely benefit from this project include pronghorn antelope and myriad of other sagebrush obligate species.



**Legend**

 State Owned Parcels



**Izzehood Basin  
Restoration**

January 17, 2016

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.

### Heritage Project 19-09: Bighorn Sheep Gene Transcription Analysis

This project conducted immunological assays on 228 bighorn sheep within the state to assess herd susceptibility to pathogens by examining immunological response. Nevada has the most successful bighorn sheep restoration program in the West. However, a number of herds have also been impacted by disease events following pathogen spill-over, with some suffering catastrophic die-off events, followed by years of little to no lamb recruitment and others displaying little population impact following infection.

This gene transcription technology and assessment of herds will allow managers to gain knowledge about how the sheep themselves are responding to their environment and greatly compliment the knowledge of herd health that we have gained from physical exams, disease testing and herd demography profiles. By adding the information gained from these gene transcription profiles wildlife professionals can improve the management of individual herds in relation to their immediate environment and pathogen profiles, allowing improved health in all of Nevada's bighorn herds.

Location, year, and number of individuals immunological analysis completed on for this project:

Location	Year	Female			Male		
		Adult	Yearling	Lamb	Adult	Yearling	Lamb
Bare Mountain	2016	5	-	-	2	-	-
	2017	8	-	-	1	-	-
Cactus Range	2017	4	-	-	-	-	-
Clan Alpine Range	2016	3	-	-	1	-	-
Desatoya Mountains	2017	6	-	-	2	-	-
Double H Mountains	2017	5	1	-	4	-	-
Excelsior Mountains	2016	2	-	-	2	-	-
Fairview	2016	6	1	1	-	-	-
Garfield Hills	2018	7	-	-	-	-	-
Granite Range-Washoe	2017	4	-	-	-	-	-
Last Chance Range	2016	1	2	-	3	2	-
Lone Mountain	2018	27	-	-	-	-	-
Monte Cristo Mountains	2016	4	1	-	1	-	-
Muddy Mountains	2016	3	1	1	-	1	3
	2017	12	-	1	2	1	-
NTTR	2016	4	1	1	1	-	-
Pahute Mesa	2017	3	-	-	3	-	-

Pintwaters	2016	12	2	-	10	1	-
River Mountains	2016	7	-	1	1	1	-
Santa Rosa Range	2018	8	-	-	1	-	-
Slate Range	2016	5	-	-	-	-	-
Snowstorm Mountains	2017	6	-	-	-	-	-
Spring Mountains	2016	6	-	-	-	1	-
Stillwater Range	2017	5	-	-	6	1	-
Stonewall Mountain	2017	4	-	-	1	-	-
Tobin Range	2016	1	-	-	3	-	1

Bighorn sheep herds in this study had unique transcript profiles, reflecting differential environmental stressors and herd immune function in each range. In general, some herd responses indicated:

- contaminant exposure
- inability to mount immune response
- inability to mitigate immune response (potential immunopathology)

Differences in susceptibility may be due to differences in herd immune function and may be influenced by nutrition, contaminants, pathogens, and underlying genetics. In order to fully utilize the results of our immune response analyses, our data needs to be placed in the larger context of overall herd health and response to disease, including environmental information such as available forage (NDVI database). We are currently overlaying our results with an NDVI database, examining how patterns in forage availability correlate with patterns of immune function. We will submit this work to a peer-reviewed journal. Ideally, researchers would combine results of our immune function/susceptibility analyses with disease dynamic data and, if available, translocation history and/or population genetics to identify the underlying pressures driving differential disease manifestations among populations.

Please see the following for more in-depth results and analyses:

Bowen, Lizabeth, et al. "Gene Transcript Profiling in Desert Bighorn Sheep." *Wildlife Society Bulletin*.

### **Heritage Project 19-10: Comins Lake Boat Ramp**

NDOW's Boating Access Program continues to work towards completion of the Comins Lake Boat Launch Project. The project will be ADA compliant and consists of a boat ramp, sled dock, primary boat trailer parking lot, overflow boat trailer parking lot, shoreline improvements to enhance shoreline fishing opportunities, and designated picnic sites, with concrete slabs, shade ramadas, tables, and trash containers.

On November 15, NDOW received notification that the Nevada State Historic Preservation Office (SHPO) concurs with the U.S. Fish and Wildlife Service's finding of "No Historic Properties Affected". Currently, the site is cleared from an environmental, cultural, and historical perspective.

The design of the facility is still 90% complete however, to generate necessary cash match for the project, a requirement of the grant, Ely sportsmen have requested to construct some site improvements. The site improvements will provide better access to the shoreline and will allow better shoreline fishing opportunities. As a result of the sportsmen's request, a separate set of construction drawings is being prepared by the design consultant, Basin Engineering, for the sportsmen's portion of the project. Basin Engineering is expected to have the plans for the contracted portion of the work completed in time to have the project completed by the fall of 2020.

### **Heritage Project 19-11: Rebuild of Last Chance #6 Hanging Basin Water Development**

Work entailed the modernization of the Last Chance #6 (Hanging Basin) big game guzzler. Activities centered around reducing the likelihood the guzzler could fail, leaving wildlife without water during the summer. Over 63 species of wildlife have been known to drink at guzzlers in the Mojave Desert. The primary beneficiary of the guzzler rebuild will be large animals such as Desert Bighorn. The over 100 Desert Bighorn inhabit the Last Chance Range require stable year-round water sources; the increase in the storage capacity and collection surface will allow for this goal to be achieved. Both an increased storage capacity and collection surface will reduce any need for NDOW to supplement the guzzler with water manually hauled to it via helicopter.

Removal of the older storage system dependent on a float valve to regulate water to a modern self-leveling system free of mechanical parts is central to this reconstruction effort. In addition to this the ability of this guzzler to continue to collect precipitation during drought years is central to the redesign of the guzzler system. Increasing the guzzler's storage capacity from 7,350 available gallons to 9,200, represented a 1,850 gallon increase. Increasing the collection apron's size from and outdated plastic 34'x28' apron which had as of 2018 ceased to function in its collection capacity to a 60'x40' steel apron. This new apron is far more durable, and its larger size affords it the ability to collect 903 more gallons of water for every 1 inch of precipitation received. Other modern components such as new tanks with a greater number of UV inhibitors and stainless-steel plumbing parts are also featured in the new guzzler design.

### **Heritage Project 19-13: Simkins/Docs Pass Pinyon-Juniper Chaining Maintenance Project**

A total of 858 acres were maintained with the Simkins Chaining. This area was previously chained during the 1960s. The original Simkins Chaining project encompassed approximately 4,000 acres. The primary method of treatment was manually cutting (chainsaw- lop and scatter) encroaching pinyon and juniper. Because regenerating trees were Phase 1 and 2, there is was no need to further address the leftover biomass. This will help maintain the original investment in the chaining and will maintain habitat for the browse species within the chaining.

In 2014, a wildfire (2,000+ acres) occurred directly north of and adjacent to the proposed project area. This project, coupled with fire rehab seeding to the north provides added habitat benefit to the area. There are also 2 big game guzzlers within close proximity to the project area.

Wildlife in the area includes a host of non-game species, birds, mule deer, a growing number of elk and a growing number of wild turkeys. Big game, including a growing number of elk, are the main benefactors of this treatment but a variety of non-game species, birds, and a growing number of wild turkeys will benefit as well.

#### **Heritage Project 19-14: Cave Valley Ranch Pinyon-Juniper Removal Project**

To date 1,534 acres have been treated and the majority of this project has been completed. We are currently working the final stages of this project, removing the PJ slash from priority areas for wildlife. It is anticipated that the remainder of this project will be completed by the end of calendar year.

This 3,400 acre ranch has prime wildlife habitat and is involved in several habitat improvement projects including: a conservation easement with Rocky Mountain Elk Foundation, entry into the Conservation Credit System, and various habitat improvement grants. This ranch is a working cattle ranch, however they work to make every aspect of the property wildlife friendly. There are two sage grouse leks on the ranch property as well as an abundance of elk, deer, and other wildlife.

Trees targeted for removal were masticated, lopped and dropped, and/or cut into firewood length and left onsite for removal by the ranch. Removal of pinyon and juniper trees will benefit a variety of wildlife including, but not limited to, sage grouse, mule deer, elk, and antelope. Sage grouse are priority in this removal effort, given that pinyon and juniper create an abundance of perch points for predatory birds and devastate grouse populations. It is anticipated that by removing the encroaching trees from the property, there will be an increase of surface water, which support the valuable grasses, forbs, and shrubs on site.

#### **Heritage Project 20-01: Bighorn Sheep Capture, Transplant, and Monitoring**

As of April 1, 2020, the entire FY2020 Project 20-01 approved funding of \$100,000 was expended. There were \$97,923 cash donations from Nevada conservation NGOs received in FY2020 or unused in previous years available to use this year. Not all of those funds were used due to weather and issues with helicopter capture crew. BLM contributed \$40,000 to specific projects in Humboldt County. NDOW expended a great deal of Wildlife Restoration funds and \$8,828 from the Predator Fund to support this project. Utah Division of Wildlife Resources paid for presampling and the animals captured for translocation. Pyramid Lake Paiute Tribe paid for the animals captured for their transplant. A full accounting of expenditures will be completed after the project period ends June 30, 2020.

There were 203 bighorn sheep of all subspecies captured, with 89 animals GPS collared (excluding Utah) during 20 capture events to meet a variety of objectives including: Presampling for translocation in 4 herds, support monitoring risk of contact and sheep separation efforts with adjacent domestic sheep and goat operations in 3 herds, ongoing Test and Removal project in Snowstorm Mountains, collaboration with Sheldon National Wildlife Refuge to assess future augmentation needs, completing statewide disease surveillance and changes in pathogen profiles in several herds (example is assessing recovery in Ruby Mountains and East Humboldt Range bighorn herds), provide source stock for UDWR Utah Division of Wildlife Resources to reintroduce desert bighorn into the Mineral Mountains, assist Pyramid Lake Paiute Tribe in reintroducing bighorn to the Lake Range, assisting predator control efforts, and conducting bighorn augmentation to Negro Creek portion of the Granite Range.

Also, a 1-day critical capture of mountain goats in the East Humboldt Range was conducted to evaluate pathogen status of mtn goats to develop plan to ensure herd recovery from past poor performance.

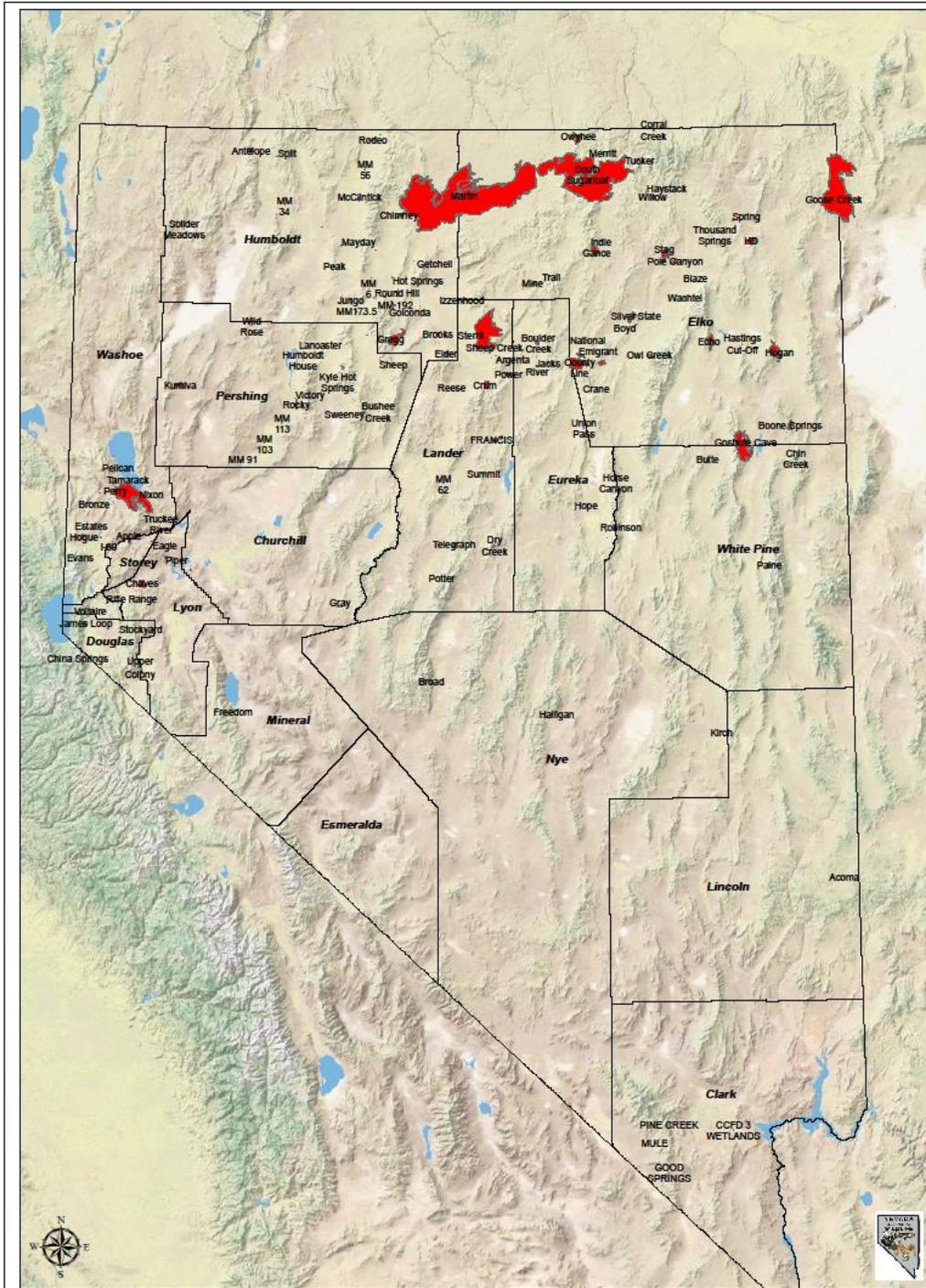
#### **Heritage Project 20-02: Wildlife Related Restoration and Seed Purchase**

Heritage Trust Funds were spent at locations across northern Nevada where wildfires burned during 2018, 2019 and 2020. Fire season in 2019 was small. The primary goal of this project is to work with the Nevada BLM to supplement their 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 the 2018, 2019 and 2020 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. 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.

NDOW routinely works with the BLM to apply seeds to numerous fires. The Nevada BLM applied for Emergency Stabilization and Rehabilitation (ES&R) funds and was granted ~\$3,900,000 toward fire rehabilitation. The funding granted to BLM covers only a portion of the acres burned. BLM requested that NDOW secure 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.

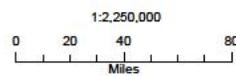
The NV BLM districts have been funded for rehabilitation work on portions of the Martin East and West, and other fires and NDOW is seeking funding to provide assistance in two main ways. First, NDOW can add important species to seed mixes. Second, NDOW can seed and provide additional restoration activities on areas the BLM may not have received funding for. 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.

The Heritage Trust funds were spent primarily on reseeding efforts on the Martin Fire which burned approximately 460,000 acres. 19, 500 acres were seeded in coordination with Winnemucca and Elko BLM offices and NDOW contributed to seed purchase and application and herbicide purchase and application. Additional Heritage Trust funds were spent on seeds for the Cherry Fire (1,900 acres), and the Corta Fire (8,000 acres).



**2018 Wildfire**

Map date Jan 14, 2020



NAD 1983 UTM Zone 11N

- 2018 Fire Perimeters
- Nevada Counties



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### **Heritage Project 20-03: South Mountains Habitat Restoration**

The South Mountains Habitat SOW for bid has been delayed to better align with Ely BLM district's planning efforts for a holistic approach to habitat restoration in this area. It is anticipated that the SOW will be released for bid this spring/summer with work being completed by the fall of 2021.

The Nevada Department of Wildlife, in coordination with B-Enterprises has identified approximately 1,800 acres of that would benefit from habitat restoration. These acres have been targeted based on the expected wildlife benefits, specifically grouse (sage grouse and blue grouse), mule deer, and elk. Treatments under development will consist of targeted removal of pinyon and juniper within the treatment areas, seeding, riparian fencing, and fence removal.

### **Heritage Project 20-04: Toole Springs Lek Juniper Removal**

This project included the hand thinning of 1067 acres of phase one juniper with chain saw crews. The implementation of the Toole Spring Lek Juniper Removal Project was initiated and completed in October of 2019. In total, approximately 5,067 acres was treated where the Nevada Department of Wildlife contracted the treatment of 1067 acres and the BLM the remaining 4,000 acres.

The primary objective of this project was to remove low densities of pinyon juniper trees that are proximal to three greater sage-grouse leks. Pinyon and juniper trees act as perching sites where birds of prey actively hunt sage grouse making both sage-grouse and their nests more susceptible to predation. Mule deer and pronghorn populations in the area are also expected to benefit from improvements in habitat condition.

### **Heritage Project 20-05: Egan Johnson Basin Restoration**

The SOW for this project has been released and the contract has been awarded. It is anticipated that 1,093 acres of pinyon-juniper removal will be completed under this project by the end of calendar year 2020.

The purpose of this project is to restore natural site conditions, reduce potential for large wildfires by reducing fuel loading, increase understory grass and forb species diversity, and improving 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, as well as other wildlife has been identified within the project area.

### **Heritage Project 20-06: North Cave Valley Habitat Restoration**

The North Cave Valley restoration treatments will encompass 1,287 acres with an additional potential option area of 117 acres for hand cutting and selective thinning of another 145 acres of pinyon and juniper.

The release of the SOW for this project has been delayed to allow for additional planning and coordination with Ely BLM to create a more holistic and seamless approach for the on the ground restoration in this area including with the South Steptoe Watershed Restoration Project (19-06) mentioned earlier. The SOW has been prepared and is awaiting release it is anticipated that this project will be completed by the end of the calendar year.

### **Heritage Project 20-07: Prioritizing and Protecting Natural Water Resources**

We are currently in the final stages of completing a contract with USU to conduct the analysis outlined in the project proposal. However, due to internal and external delays in that contract process, and partially due to the COVID-19 pandemic, we will likely not resolve those matters until Fiscal Year 2021. All NDOW contracts in development or awaiting final signatures have been placed on hold until further notice. We fully anticipate finalizing a contract during FY2021 and completing the analysis. NDOW will provide a full completion report to the Commission following the data analysis and final report for this project.

### **Heritage Project 20-08: Monitoring Moose Expansion in Nevada**

The successful capture and deployment of radio-collars on moose in Nevada under this project officially launches the Nevada Department of Wildlife's management program for moose. The Department will gain a significant amount of information about habitat-use and movement patterns of moose in Nevada through the life of the radio-collar deployments (~4 years). Further, the capture has already proved fruitful by providing a glimpse of moose productivity in Nevada. Three of the captured females were accompanied by calves and 1 of those 3 had twins.

10 moose available for capture in Nevada were located by funding an aerial infrared survey in early January. On 19 January 2020, a contracted capture crew darted 4 adult female moose from a helicopter using the previously collected infrared survey data. Nevada Department of Wildlife representatives from the Eastern Region, Wildlife Health, and Headquarters, transported via support aircraft, collected biological and morphological data and fit each moose with a radio-collar capable of collecting 6 GPS locations per day for 4 years. All moose were released in good health and radio-collars continue to transmit important habitat use data to Department biologists. Currently, 50% of radio-collared moose have spent all their time in Nevada and 50% have spent a portion of their time in Idaho.

Despite the success of the winter 2020 effort, initial radio-collar and capture costs were higher than estimated. Higher costs were due, in-part, to the Department's decision to supplement capture efforts with an aerial infrared (IR) survey intended to locate moose immediately prior to the capture. The aerial IR survey was expensive (\$1,045/hr) but it greatly improved capture efficiencies by directing crews to known locations of moose.

The Department had intended to capture male moose during the January effort. At least 2 of the moose encountered during the aerial infrared survey were young males with cast antlers. Unfortunately, delays in

fabrication of male collars by the manufacturer, prevented the targeting males during the capture. Male collars have since been delivered and the capture of male moose is a high priority for the 2021 capture season.

The capture of moose has already generated significant positive exposure for the Department and the Wildlife Heritage Program. A video posted on the Department’s Facebook page summarizing the capture events generated nearly 14,000 views, 500 “likes”, and 200 shares. The capture will also be featured during the Department’s forthcoming reality-television program on Animal Planet.

#### **Heritage Project 20-09: Big Game Survey Tool**

The project went out to bid September 2019, however the contract has yet to be finalized. This project has been delayed due to contracting issues that are not likely to be resolved before the end of the Fiscal year, however work is expected to begin as early as the fall. This project will support the development of a digital application tool for collecting data during aerial surveys of big game species.

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

To date 17 ravens have been captured and fitted with transmitters and 411 point counts have been conducted post raven removal. Due to field work delays from COVID19 related closures field work for the spring 2020 has been delayed; we anticipate completing this important field work in the spring of 2021 as an alternative.



Attaching transmitter to common raven.

### **Heritage Project 20-11: Survey and Maintenance of Existing Big Game Water Developments**

Collaborative efforts between the Fraternity of the Desert Bighorn and NDOW have resulted in 18 consecutive years of successful inspection flights in the Southern Region from 2002 through 2020.

Inspection flights during NDOW's 2020 fiscal year occurred on February 20th, 24th, 26th and 29th. Four volunteers contributed 31 volunteer hours, 4 Nevada Department of Wildlife biologists, and 1 USFWS biologist also participated in the flights. During the 4 flight days, 102 water developments were inspected in 20 mountain ranges. Landings occurred at 85 guzzlers and spring developments. Multiple undeveloped and developed springs that benefit a variety of wildlife were also checked. 17 water developments were overflowed and inspected from the air.

At the 85 guzzlers that were landed at 65 drinkers were flushed. An entire float assembly was changed at three projects, with an additional three projects servicing or adjusting part of the float valve system. Silicone was added to the apron or gutter of five projects. The slick rock dam or Hypalon apron was cleaned at 48 sites as well. Major repairs were undertaken at four guzzlers. Six additional sites were identified for future major repairs.

### **Heritage Project 20-12: Staheli Chaining Maintenance Project**

To date 880 acres have been treated and the majority of this project work has been completed. The bids came back lower than expected so an additional SOW has been prepared to complete additional acres for the project. This SOW is currently awaiting release.

The scope of the Staheli Project is to conduct maintenance on an area that was previously "chained" during the 1960s. The original Staheli Chaining project encompasses approximately 3,400 acres.

### **Heritage Project 20-13: Blacktop Apron Guzzler Upgrade**

The Blacktop apron guzzler upgrade project has been designed and planned and is currently awaiting implementation. This project may be completed later this summer or fall depending upon circumstances limiting volunteer and staff activity. This project will improve storage and retention at the guzzler.

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

The Mormon #3 guzzler upgrade project has been designed and planned and is currently awaiting implementation. This project may be completed later this summer or fall depending upon circumstances limiting volunteer and staff activity. This project will improve storage and retention at the guzzler.

### **Heritage Project 20-15: Douglas Canyon Pinyon-Juniper Removal Project**

131 acres of encroaching pinyon-juniper were masticated in Douglas canyon under this project in cooperation with the Department of Conservation and Natural Resources. Sage grouse will benefit from decreased predator perch points and increased water availability from PJ removal. Forage for these birds is also expected to increase as existing understory recovers and drill seeding takes place with other funding. This will also benefit deer as they use this property for forage and seasonal habit.

### **Heritage Project 20-13: Bighorn Disease Susceptibility Analysis**

Samples from multiple herds including the Double H, Pine Forest, Black Rock, Jackson, and East Humboldt have been collected and are currently awaiting analysis. It is anticipated analyses will be completed in the fall of 2020 and spring of 2021. This project builds on project 19-09 and to increase understanding of susceptibility to respiratory disease within bighorn sheep populations.