

# Upland Game Bird Stamp Program Report



Photo courtesy of remote camera stations placed by Matt Jeffress, Eastern Region Game Division biologist

Nevada Department of Wildlife

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# Progress Report on Upland Game Bird Stamp Projects Funded in FY 2022

## Bi-State Sage-grouse Coordinator

The Bi-State Sage-grouse Coordinator position has been in place since 2016 with an office located in Bishop, California. Amy Sturgill has been in the position since its inception. One of the main tasks of this position is to develop a progress report each year that outlines the accomplishments of the Bi-State Sage-grouse Working Group (relative to the 2012 Bi-State Action Plan) along with maintaining and updating the website specific to this population of sage-grouse ([www.bistatesagegrouse.com](http://www.bistatesagegrouse.com)), and coordinating meetings of the Bi-State Local Area Working Group, Bi-State Technical Advisory Committee (TAC), Bi-State Executive Oversight Committee (EOC) and any relevant subcommittees. During fiscal year 2022, the Bi-State EOC held one meeting in February. Two Technical Advisory Committee meetings were held, and 14 Bi-State Tribal Natural Resources Committee meetings were held.

## Bi-State Sage-grouse Monitoring within the Mount Grant and Desert Creek Population Management Units

In the mid-northern regions of the Bi-State Distinct Population Segment (Bi-State), Great Basin Bird Observatory research technicians intensively monitored sage-grouse within the Mount Grant and Desert Creek PMUs. Additional lek-count only monitoring occurred for the Fales sub-population within Desert Creek. The Mount Grant PMU consists of low elevation leks surrounded by the high elevation habitats of Aurora Crater, Powell Mountain, Big Indian Mountain and the Wassuk Range. Desert Creek extends in a north-south orientation south of Wellington, Nevada, to Sweetwater Ranch, and east of the Sweetwater Mountains to west of State Highway 338. Black (*A. nova*) and low sagebrush (*A. arbuscula*) are the dominant sagebrush species within the study area.

### Preliminary Results

#### *Space use at Desert Creek and Mount Grant*

Because marked sage-grouse at Desert Creek and Mount Grant regularly intermingle, all telemetry data for these sub-populations was pooled and their combined utilization distribution areas (UDs) were estimated. Fifty percent core area and 95 percent home ranges for sage-grouse in the Desert Creek and Mount Grant sites were 5,537 ha and 45,729 ha in the winter; 7,577 ha and 47,845 ha in the spring; 3,424 ha and 34,191 ha in the summer; and 5,171 ha and 21,776 ha in the fall.

#### *White Mountains Sub-population*

Great Basin Bird Observatory and U.S. Geological Survey wildlife technicians and biologists estimated a population total of 40 sage-grouse (95 percent CRI=29–54) for the White Mountains subpopulation as of spring 2021. Median annual population growth rates ( $\lambda$ ) were estimated at 0.90 (95 percent CRI =0.74–

1.10) over the past 13 years. There are limitations in historic lek count data (number of leks and counts) that lead to predicted abundances in 2021 that should be interpreted with caution. Sage-grouse in the White Mountains are relatively understudied, largely because they reside at high elevations that are often inaccessible until mid-summer. The White Mountains subpopulation is unique in that it constitutes the most southwestern, and likely highest elevation occupancy of any sage-grouse population within the species range. The extreme nature and difficult access of this site mean the predicted number of unknown leks is likely much higher than elsewhere in the DPS. Limitations in time-series data for known leks also resulted in omission of some leks to guard against erroneous trends. Thus, it is suspected that the population model underrepresents true abundance. We began monitoring of the White Mountains subpopulation in 2018, and data collection from 2018–21 and potentially in future years will help describe population parameters of this understudied subpopulation. Notably, a new lek was discovered on the California side in 2018 (Iron Mountain).

### **Recent Monitoring Update**

During the fall of 2021, USGS research crews captured and marked 28 females within the Mount Grant PMU, many of which were near the Aurora Crater lek. During the spring of 2022, an additional three female sage-grouse were captured and outfitted with VHF transmitters. One female was captured near the China Camp 1 lek and two were captured near China Camp 2. Telemetry flights located 7 VHF marked sage-grouse during mid-winter and 5 mortalities. These flights were unable to locate 16 sage-grouse marked in the fall of 2021. A spring flight was scheduled for early April.

## **Desert Creek Ranch Conservation Easement**

### Project Accomplishment Summary

A conservation easement deed with incorporated Agricultural Land Easement minimum deed terms was submitted to the landowner for review in May of 2021. The State of Nevada (Department of Wildlife and Division of State Lands) has reviewed the easement draft and approved the form of the easement deed. Once the landowner provides edits and comments, those can be incorporated and the Eastern Sierra Land Trust (ESLT) will submit the easement deed to NRCS for final review.

With the assistance of Nevada State Lands, the ESLT and the landowner have agreed upon a list of qualified appraisers to seek bids from once the easement deed is agreed to (likely in April 2022). We expect the appraisal to be completed in the spring of summer of 2022 and to be submitted to the State of Nevada and NRCS for review upon landowner approval.

A draft title commitment dated May 17, 2019 was prepared by Title Service and Escrow Company in Yerington, Nevada.

### Estimated Project Timeline

- The conservation easement deed is expected to be delivered to the NRCS in the spring of 2022.
- The appraisal report is expected to be delivered to the NRCS in early summer of 2022.
- Baseline and ALE Plan field work to be completed during the summer of 2022.
- Expected closing by December 2022.



### **Desert Creek Weed Treatment**

The 15 acre site was treated in fall 2020 with Plateau, a preemergent herbicide. Herbicide treatment was assessed in the spring of 2021 and was found to be effective. In December 2021, we seeded the site using hand and ATV broadcast seeders. A site inspection occurred in spring of 2022, and it appears that bunchgrasses are establishing and invasive grasses and weeds remain low. A second seeding is planned for fall/winter of 2022.

Thus far, FY22 funding from the Desert Creek Weed Treatment account has not been expended, however, a second broadcast seeding treatment is needed to continue establishing greater herbaceous cover in order to create a resistant system in preventing further cheatgrass invasion.

### **Eastern Complex Weed Control**

To date 574 acres of invasive weeds have been treated on the Eastern Wildlife Management Area Complex. The removal of these weeds has improved wildlife habitat, increased user accessibility, and improved aesthetics on the Complex.

Total Dollars Spent to Date: \$20,000 of reserve account dollars have been spent so far. All remaining reserve account funding should be spent this spring. Approximately \$30,000 from other funding sources (SNPLMA, WMA Grant) have been spent to date.

It is anticipated this project will be completed by 6/30/2022. All remaining funds held in reserve for spring weed treatments will be used as described in the project proposal. It is estimated an additional 500-600 acres will be treated this May and June.

# Estimating Greater Sage-grouse Vital Rates

## Project Accomplishment Summary

Working collaboratively with the Great Basin Bird Observatory and the U.S. Geological Survey, demographic rates and space use of greater sage-grouse were measured in the Monitor Range study area from 2016 to 2021 as part of a long-term research program. General goals of this project are aimed at providing managers with information on population trajectories and threats to sage-grouse across the Great Basin. Specific to the Monitor Range, goals of this project are to provide a control site with few anthropogenic disturbances to serve as a comparison for demographic trends with other sage-grouse populations impacted by anthropogenic disturbances. To date, 169 sage-grouse have been captured and outfitted with very high frequency ( $n = 159$ ) or Global Positioning System transmitters ( $n = 10$ ) over the course of the effort. Annual population rate of change derived from an integrated population model utilizing vital rates measured during this study and longer lek count data was estimated at 0.94 (95 percent credible interval= 0.71–1.24) from 2008 to 2021.

## Preliminary Results

From fall 2015 to fall 2021, 169 sage-grouse were captured in the fall ( $n=90$ ) and spring seasons ( $n=79$ ). Of those, 164 were female where 159 very high frequency (VHF) transmitters were attached and 5 with Global Positioning Systems (GPS). In addition, 5 were male with GPS transmitters attached.

## *Space Use*

GPS transmitters provided 15,762 locations of marked sage-grouse at the Monitor Range from 2015–21. During the spring (March–May) season, the 50 percent core area of sage-grouse activity and the 95 percent population level home-range were 4,501 ha and 41,320 ha, respectively. During the summer (June–August, i.e. brood rearing) season, the 50 percent core area and the 95 percent population level home-range were 5,902 ha and 30,905 ha, respectively.

Seasonally, sage-grouse use of the landscape changed as marked individuals utilized distinctly different areas across seasons. Sage-grouse were most concentrated during the winter (December–February) season and were localized to a 50 percent core area of only 685 ha compared to the summer, where they used 5,902 ha. (Figure 3).

## *Avian Predator Monitoring*

A total of 231 Raptor, Raven, Horse and Livestock (RRHL) surveys throughout the Monitor Range in 2021 for a total of 1,473 surveys during March–August 2016–21. In 2021, a total of 28 ravens were observed during the 231 RRHL surveys which was equivalent to 0.12 ravens per survey. RRHL surveys were not conducted at nest sites in 2020 due to COVID-19 restrictions. An average of 3.00 ravens per RRHL were detected at random locations. In 2021, 0.10 ravens per RRHL survey were detected at nest sites, which was similar to the number of ravens detected per random survey (0.10). Livestock were encountered at 33 RRHL survey, and raven detections per survey were lower during surveys in which livestock were detected (0.09), compared with surveys in which livestock were not detected (0.13). When ravens were detected in 2021, the median number of observed ravens was 1 per RRHL survey, and the maximum number of ravens detected in any survey was 4.

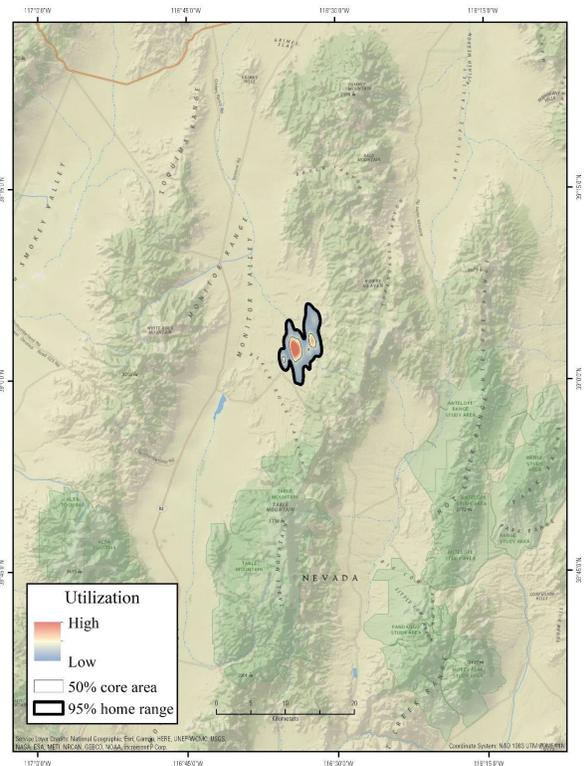
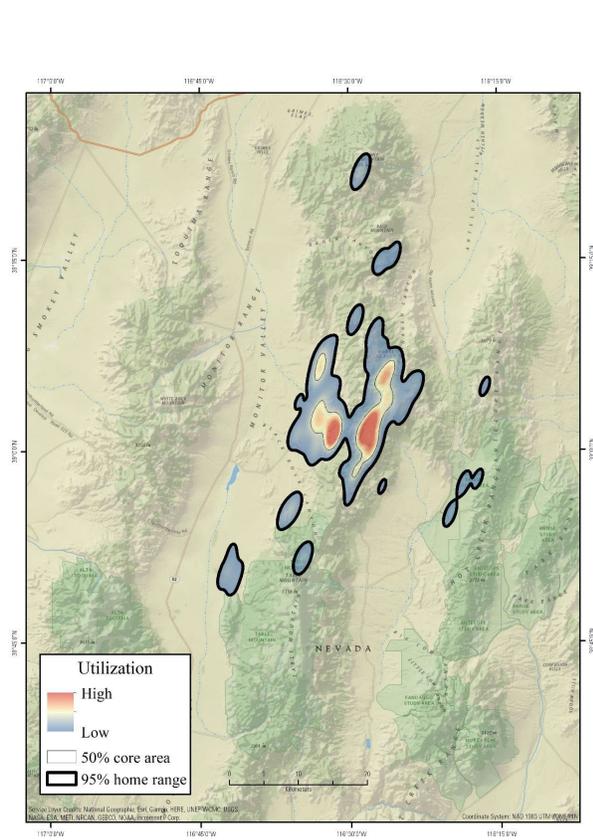


Figure 3. Cumulative utilization distribution of sage-grouse during the summer (left panel) and winter

(right panel) at the Monitor Range study area from 2015-2021. Utilization distributions were approximated via kernel density estimators. The winter period is the most concentrated use period for this study area.

#### *Estimates of Population Growth Rates*

From 2008–21, the Monitor Range had a median  $\hat{\lambda}$  estimate of 0.94 (95 percent credible intervals [CRI]=0.71–1.24, Figure 4). Estimated declines in population sizes are reflected by a trend of decreasing lek counts. Adult sage-grouse had slightly higher median estimates of annual survival (0.57, 95 percent CRI=0.50–0.63; table 2), but lower recruitment (0.31, 95 percent CRI=0.24–0.40; table 2) compared to yearlings (survival=0.56, 95 percent CRI=0.49–0.62; recruitment=0.58, 95 percent CRI=0.46–0.71; table 2).

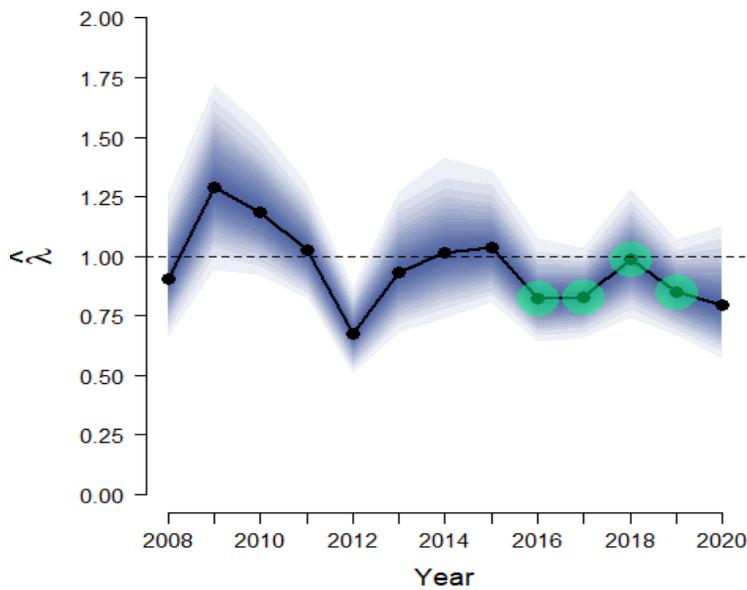


Figure 4. Annual population growth rate of sage-grouse at the Monitor Range study area from 2008-2020 ( $\hat{\lambda}=0.94$ , 95 percent credible intervals=0.71–1.24).  $\hat{\lambda}$  for 2021 is not shown here because lek counts in 2022 are required to calculate  $\hat{\lambda}$  in 2021. Shading represents the 95 percent credible interval of the integrated population model; no highlighting represents years wherein only lek count data was collected, and green shading represents years that lek count and demographic data were collected.

Table 2. Summary of posterior distributions of derived population demographic parameters for greater sage-grouse at the Monitor Range study area from 2016-2021. Values are cumulative estimates across all years of the study.

Population Vital Rate	Age	Median Estimate	Credible interval (CRI)	
			Lower -0.025	Upper -0.975
Annual growth rate	NA	0.94	0.71	1.24
Nest propensity (1)	Adult	0.96	0.94	0.97
	Yearling	0.89	0.87	0.91
Clutch size – First Nest	Adult	9.2	7.94	10.75
	Yearling	9.88	8.44	11.65
Clutch size – Second Nest	Adult	7.42	6.83	7.92
	Yearling	7.96	7.25	8.60
Nest survival – First Nest	Adult	0.30	0.21	0.41
	Yearling	0.45	0.36	0.53
Nest survival – Second	Adult	0.26	0.20	0.33
	Yearling	0.41	0.32	0.50
Hatchability	Adult	0.88	0.83	0.92
	Yearling	0.91	0.87	0.94
Chick survival	Adult	0.34	0.28	0.42
	Yearling	0.41	0.33	0.49
Annual survival	Adult	0.57	0.50	0.63
	Yearling	0.56	0.49	0.62

## Greater Sage-grouse Monitoring

### Lek Count Technicians

No lek count technicians were hired to conduct sage-grouse lek surveys during the 2022 spring breeding season as it was difficult to find interested and qualified applicants.

### Aerial Lek Survey

Along with several mornings of aerial helicopter surveys conducted with agency aircraft (summarized below), two days of contracted survey were conducted in northeastern Nevada (Area 7). A total of 56 leks were surveyed in the O'Neil Basin and Gollaher Population Management Units. Of these, just 13 were confirmed as active. Several updates to lek centroid coordinates were made during these flights as well.

- Elko County (Management Area 6) – 81 leks were visited by helicopter over three mornings in the North Fork, Tuscarora and Desert PMUs. Of those, 38 were active with 409 males observed.
- Humboldt County - Four mornings of aerial survey were conducted. During the survey, 82 leks were visited in the Lone Willow PMU of which 25 were active. In the Santa Rosa PMU, 79 leks were checked and 18 were found to be active.
- Lander County – Three mornings of helicopter survey were conducted; however, only 5 leks were found to be active. Survey conditions were not ideal, so several leks were re-visited from the ground and 10 of the 49 were found to be active.
- Nye County - 54 leks were surveyed by helicopter over the course of three mornings. Eighteen leks were found to be active with 36 inactive at the time of survey.
- Washoe County - 81 leks were surveyed from the helicopter during four mornings of survey. Of those, 44 were found to be active.

### Fixed-Wing Aerial Infrared Surveys

Although fixed wing aerial infrared surveys were coordinated and planned at the following sites, they were not conducted due to several issues with the contractor (Owyhee Air) including Federal Aviation Administration compliance and permissions, abnormal weather conditions during the spring (high wind events) and various other aircraft maintenance issues. The following survey polygons identified for the spring of 2022 will be surveyed during 2023:

- Pinion Range, Elko County
- North Steptoe Valley, White Pine County
- West Ruby Mountains, Elko County
- Ruby Valley, Elko County
- Owyhee Desert, Elko County
- White Pine Range, White Pine County
- Santa Rosa Range, Humboldt County
- South Independence Range, Elko County
- Table Mountain, Nye County
- Mount Jefferson, Nye County

We have requested less funding for this project for state fiscal year 2023 as funds from the 2022 proposal will be used to help complete these surveys.

## Key Pittman WMA Wildlife Food Plots

Approximately 60 acres were planted in October with winter wheat, cereal rye, barley, alfalfa, Austrian winter pea and hairy vetch as a winter cover crop and to enhance hunter success while hunting the fields on the Key Pittman WMA. Due to drought conditions approximately 20 acres of the food plot was unsuccessful due to lack of water. An additional 20 acres were planted in

March with intermediate wheat grass, sand dropseed and sandberg bluegrass to enhance desirable vegetation in areas where the removal of noxious weeds left areas that were lightly vegetated or in areas where improved vegetation cover and variety is needed. Approximately 70 acres were over seeded in March with Spring wheat, oats, Ladak Alfalfa, Rocky Mountain bee plant, sorghum, and native annual sunflower. The spring planting is robust and healthy.

## **Monitoring Greater Sage-grouse Response to the Martin Fire**

### Project Accomplishments Summary

Technicians from the Great Basin Bird Observatory working in collaboration with the U.S. Geological Survey measured demographic rates and space use of greater sage-grouse in the Santa Rosa Mountains during 2016–2021 as part of a broad, long-term collaborative research program. Goals of this project are to provide a control site with few anthropogenic disturbances to serve as comparison and control for demographic trends and comparisons with other sage-grouse populations impacted by anthropogenic disturbances, and to measure the effects of wildfire on sage-grouse populations in a before-after framework (following the Martin Fire of July 2018). To date, 166 sage-grouse have been captured and outfitted with very high frequency ( $n = 149$ ) and Global Positioning System ( $n = 17$ ) transmitters. Annual population rate of change ( $\lambda$ ) derived from an integrated population model utilizing vital rates measured during this study and longer lek count data starting in 2008 was estimated at 0.96 (95 percent credible interval= 0.77–1.20).

### Preliminary Results

A total of 96 sage-grouse were captured in the fall and 70 in spring season from 2016 to 2021. Of those, 158 were female where 148 very high frequency (VHF) transmitters were attached and another 10 Global Positioning System (GPS) transmitters were placed on grouse. Eight were males with one VHF and 7 GPS transmitters. Nest and brood locations have been noted both within and outside of the Martin Fire of perimeter.

### *Space Use*

GPS transmitters provided 6,849 locations of marked sage-grouse at the Santa Rosa Mountains study area from 2018 to 2021, and seasonal UD's were developed from these locations. During the spring season, the 50 percent core area of sage-grouse activity and the 95 percent population level home-range were 8,240 ha and 39,832 ha, respectively. During the summer (brood-rearing) season, the 50 percent core area and the 95 percent population level home-range were 9,424 and 57,612 ha, respectively.

Seasonally, sage-grouse use of the landscape changed as marked individuals utilized distinctly different areas throughout various seasons. Sage-grouse were most concentrated during the fall (September–November) season and were localized to a 50 percent core area of only 1,981 ha (Fig. 6) compared to summer, where they used 9,424 ha. We note, however, that differences among seasonal UD estimates can be partly attributed to variation in location frequency and corresponding adjustments of bandwidths used to smooth UD's.

### *Avian Predator Monitoring*

One hundred and thirty-four raptor, raven, horse and livestock (RRHL) surveys were completed throughout the Santa Rosa Mountains in 2021 for a total of 1,091 surveys during March through August 2016–2021. In 2020, ravens were detected during 6 surveys (40 percent). No RRHL surveys were conducted at nest sites in 2020 due to COVID-19 restrictions. An average of 1.00 ravens were detected per RRHL at random locations. In 2021, 0.18 ravens were detected per RRHL survey at nest sites, which was lower than the number of ravens that we detected per random survey (0.51). Livestock were observed

at 79 surveys, and raven detections per survey were higher during surveys in which livestock were detected (0.41), compared with surveys in which livestock were not detected (0.18). When ravens were detected in 2021, the median number of observed ravens was one per survey, and the maximum number of ravens detected in any survey was four.

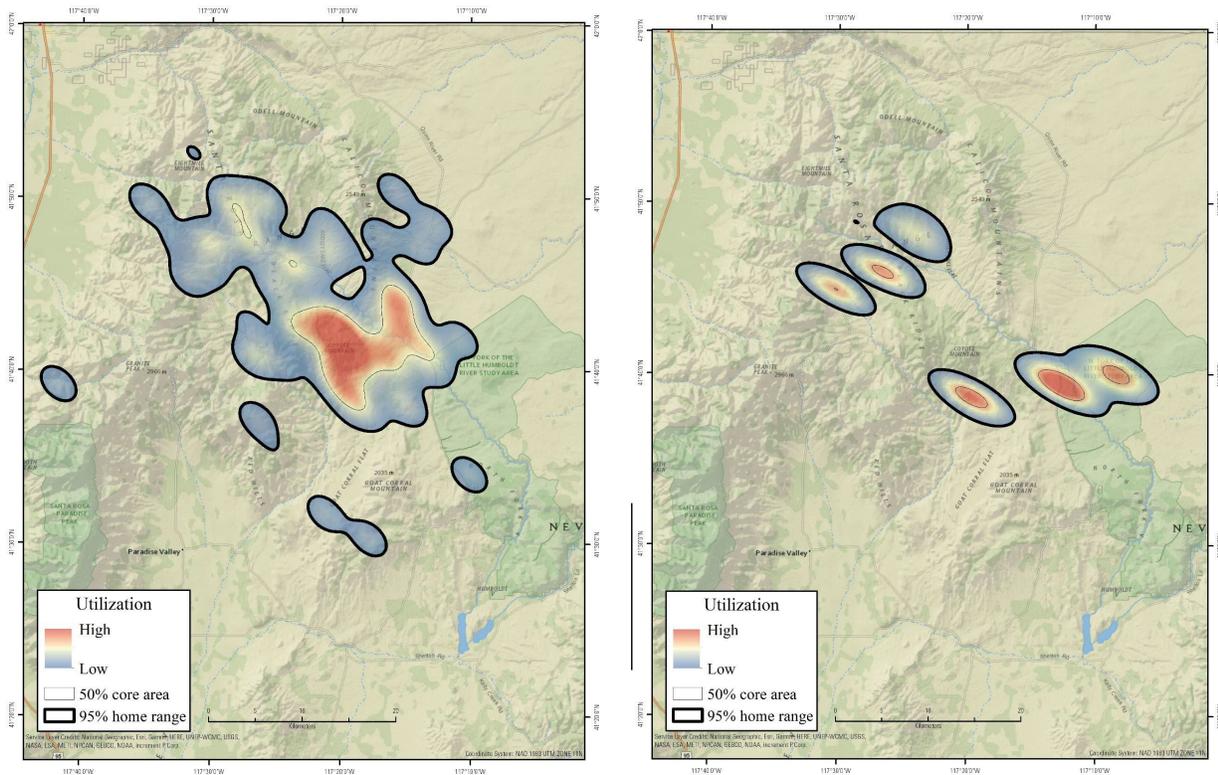


Figure 6. Cumulative utilization distribution of greater sage-grouse during the summer season (brood rearing period; left panel) when sage-grouse were widely distributed and the fall season (right panel) when sage-grouse were most concentrated at the Santa Rosa Mountains study area from 2016–2021. Utilization distributions were approximated using kernel density estimators.

#### *Estimates of Population Growth Rate*

From 2008–2021, the Santa Rosa Mountains had a median  $\lambda$  estimate of 0.96 (95 percent credible intervals [CRI] =0.77–1.20; Figure 7). Estimated declines in population sizes are reflected by a trend of decreasing lek counts. Adult sage-grouse had higher median estimates of annual survival (0.55, 95 percent CRI=0.47–0.61; table 3) compared to yearlings (0.54, 95 percent CRI=0.45–0.61; table 3), but lower recruitment (adult  $R$ =0.34, 95 percent CRI=0.27–0.43; yearling  $R$ =0.63, 95 percent CRI=0.5–0.76; table 3) which is expressed in other study areas around the state as well.

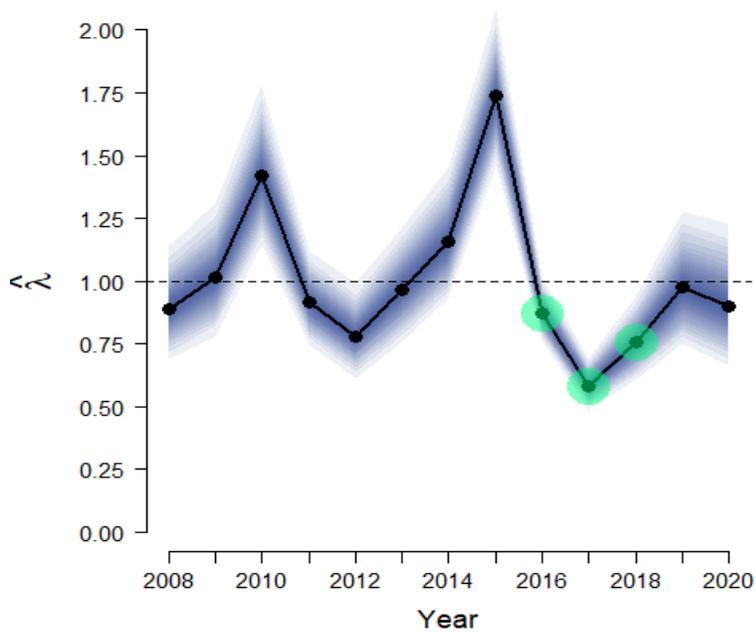


Figure 7. Annual population growth rate of sage-grouse at the Santa Rosa Mountains study area from 2008-2020 ( $\hat{\lambda} = 0.96$ , 95 percent credible interval = 0.77-1.2). for 2021 is not shown here because lek counts in 2022 are required to calculate in 2021. Green circles represent years where both lek count and demographic data was collected, while years without circles represent years with only lek count data.

Table 3. Summary of posterior distribution of derived population demographic parameters for sage-grouse in the Santa Rosa study area from 2016-2020. Values reported here are cumulative estimates across all years of the study.

Population Vital Rate	Age	Median Estimate	Credible interval (CRI)	
			Lower -0.025	Upper -0.975
Annual growth rate	NA	0.96	0.77	1.20
Nest propensity (1)	Adult	0.96	0.94	0.97
	Yearling	0.89	0.87	0.91
Clutch size – First Nest	Adult	9.43	8.10	11.17
	Yearling	10.12	8.63	12.05
Clutch size – Second Nest	Adult	7.57	7.12	8.40
	Yearling	8.12	7.51	9.08
Nest survival – First Nest	Adult	0.31	0.22	0.42
	Yearling	0.46	0.37	0.55
Nest survival – Second	Adult	0.27	0.21	0.35
	Yearling	0.42	0.33	0.51
Hatchability	Adult	0.88	0.83	0.92
	Yearling	0.91	0.87	0.94
Chick survival	Adult	0.39	0.33	0.45
	Yearling	0.41	0.34	0.49
Annual survival	Adult	0.55	0.47	0.61
	Yearling	0.54	0.45	0.61

# Monitoring the Effects of Landscape Level Treatments on Greater sage-grouse in the Desatoya Mountains of Central Nevada

## Project Accomplishments Summary

The Great Basin Bird Observatory, working in collaboration with the USGS, measured demographic rates and space use of greater sage-grouse (*Centrocercus urophasianus*; hereinafter, “sage-grouse”) in the Desatoya Mountains study area in Nevada from 2014 to 2021 as part of a long-term collaborative research program. General goals of this project are aimed at providing managers with information on population trajectories and threats to sage-grouse across the Great Basin. Specific to the Desatoyas study area, goals of this project are to evaluate the potential effects of habitat restoration and enhancement through riparian restoration and removal of single leaf pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) on greater sage-grouse demographic rates, movement patterns, and predator community composition. To date, we have captured and fit 212 sage-grouse with very high frequency ( $n = 168$ ) or Global Positioning System transmitters ( $n = 44$ ). Annual population rate of change ( $\lambda$ ) derived from an integrated population model utilizing vital rates measured during this study and longer lek count data starting in 2008 was estimated at 0.93 (95 percent credible interval 0.75–1.15). These estimates are largely reflective of extreme drought-like conditions at the Desatoya Mountains study area and across the Great Basin in general.

## Preliminary Results

From fall 2013 to September 2021, 212 sage-grouse were captured at the Desatoya study site. Of those, 193 were females where 164 had very high frequency (VHF) transmitters attached and 29 had Global Positioning System (GPS) transmitters attached. Nineteen were male with four VHF transmitters and 15 GPS transmitters.

GPS transmitters provided 61,486 locations of marked sage-grouse at the Desatoya study area from 2013 to 2021. During the spring (March-May) season, the 50 percent core area of sage-grouse activity and the 95 percent population level home-range were 7,866 and 41,794 ha, respectively. During the summer (June-August, brood-rearing) season, the 50 percent core area and the 95 percent population level home-range were 1,449 and 20,426 ha, respectively.

Seasonally, sage-grouse use of the landscape changed as marked individuals utilized distinctly different areas throughout different seasons. Sage-grouse were most concentrated during the summer (June-August) season and were localized to a 50 percent core area of only 1,449 ha compared to the spring, where they used 7,866 ha (Figure 1).

## Avian Predator Monitoring

A total of 125 RRHL surveys were completed throughout the Desatoyas study area in 2021 for a total of 2,369 surveys during March–August 2014–21. In 2021, a total of 30 ravens were observed which was 0.24 ravens per survey. In 2021, we detected 0.28 ravens per RRHL survey at nest sites, which was lower than the number of ravens that we detected per random survey (0.31). In 2021, livestock were observed at 14 RRHL surveys, and raven detections per survey were higher during surveys in which livestock were detected (0.5), compared with surveys in which livestock were not detected (0.21). When ravens were detected in 2021, the median number of observed ravens was 2 per survey, and the maximum number of ravens detected in any survey was 4.

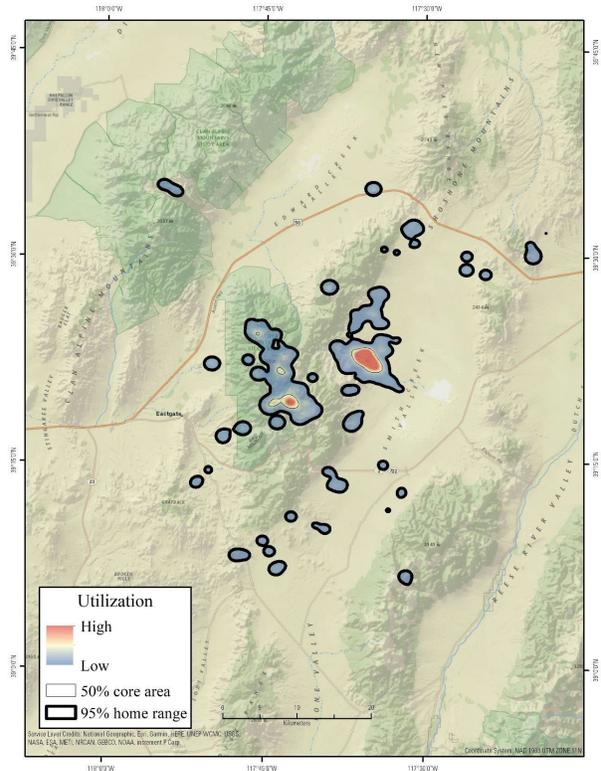
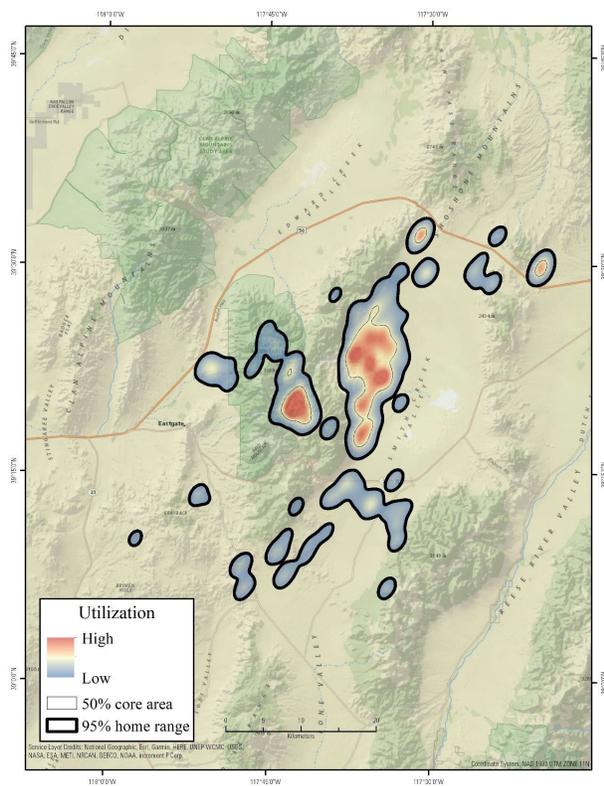


Figure 1. Cumulative utilization distribution of sage-grouse during the spring season (left tile)

and the summer season (right tile). Use is much more restricted and more concentrated during the summer months.

### Population Growth Rate Estimates

From 2008–21, the Desatoya study area had a median  $\hat{\lambda}$  estimate of 0.93 (95 percent credible interval=0.75–1.15; hereinafter, CRI; Figure 2). Estimated declines in population sizes are reflected by a trend of decreasing lek counts. Adult sage-grouse had similar median annual survival (0.62, 95 percent CRI=0.56–0.69; table 1) with yearlings (0.62, 95 percent CRI=0.55–0.69; table 1), but lower recruitment (0.25, 95 percent CRI=0.19–0.32; table 1) than yearlings (0.47, 95 percent CRI=0.37–0.59; table 1).

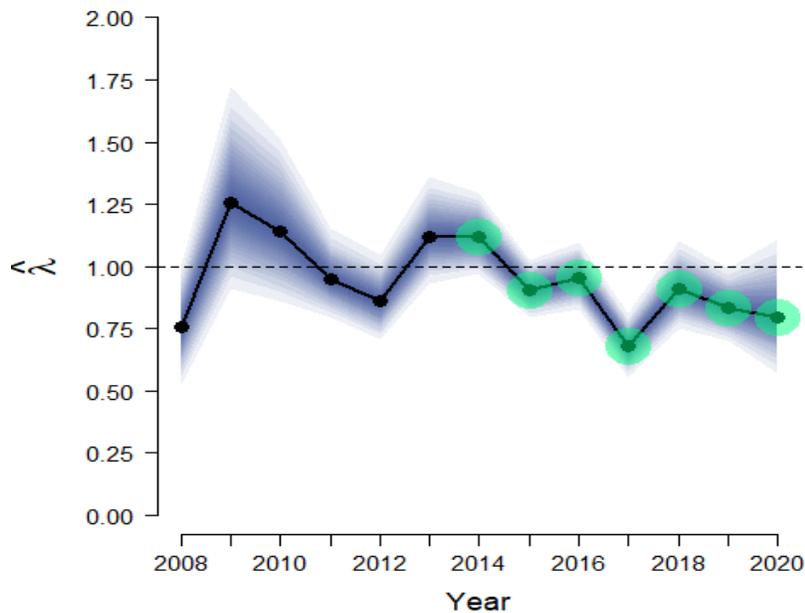


Figure 2. Annual population growth rate of sage-grouse at the Desatoya Mountains study area, 2008-2020 ( $\hat{\lambda} = 0.93$ , 95 percent credible interval = 0.75-1.15).  $\hat{\lambda}$  for 2021 is not shown here because lek counts in 2022 are required to calculate in 2020. Green circles represent years where both lek count and demographic data was collected, while years without circles represent years with only lek count data.

Table 4. Summary of posterior distributions of derived population demographic parameters for sage-grouse at the Desatoya Mountains study area from 2014-2021. Values reported are cumulative estimates across all years of the study.

Population Vital Rate	Age	Median Estimate	Credible interval (CRI)	
			Lower -0.025	Upper -0.975
Annual growth rate	NA	0.93	0.75	1.15
Nest propensity (1)	Adult	0.96	0.94	0.97
	Yearling	0.89	0.87	0.91
Clutch size – First Nest	Adult	9.18	7.93	10.70
	Yearling	9.86	8.44	11.56
Clutch size – Second Nest	Adult	7.41	6.89	7.85
	Yearling	7.94	7.28	8.58
Nest survival – First Nest	Adult	0.30	0.21	0.41
	Yearling	0.45	0.36	0.53
Nest survival – Second	Adult	0.26	0.21	0.33
	Yearling	0.41	0.32	0.50
Hatchability	Adult	0.85	0.81	0.89
	Yearling	0.89	0.84	0.92
Chick survival	Adult	0.28	0.22	0.34
	Yearling	0.34	0.27	0.41
Annual survival	Adult	0.62	0.56	0.69
	Yearling	0.62	0.55	0.69

## Montana-Humboldt SGI Spring Protection

Project planning, including field visits for spring protection layout, has been completed. Project is ready for implementation, however work is currently on hold. This is due to a position vacancy with the project partners, NRCS and Pheasants Forever. The vacant position is responsible for conducting project contracting, which reduces NDOW workload. Once this position is filled again, this project will be able to move forward.

When this project is able to move forward, fence contracting and building will be completed at five spring sites in Humboldt County.



Figure 1: Box Canyon Spring in the Double H Mountains; one of the project sites slated for protection.

## Native Seed Acquisition for Private Landowner Transition to Native Seed Production

Nevada landowners have expressed interest in converting both dryland and irrigated operations to native seed production and NDOW has committed to some landowners to providing the seed necessary to get producers started with their native seed operations. Funds from this Upland Game Bird Stamp code were used to purchase seed for native cultivars of “workhorse species” in one of the 2021 BLM seed buys. However, due to the substantial drought statewide over the past several years and the increase in the price of hay, landowners have been hesitant to change their operations to something they are less familiar with and we are still holding on to the seed that was purchased for this purpose. The remaining funds are being used for seed production research in partnership with the Walker Basin Conservancy which will help inform Nevada landowners with interest in producing native seed in the future.

## **Nine-Mile Unit Riparian Fence - Rough Creek**

### Project Accomplishment Summary

This project is located along Rough Creek within the Nine-Mile Unit (previously within the Flying M Ranch holdings) of the Walker River Recreation Area located in Mineral County (Figure 5). This area is within the Bi-State Sage-grouse Distinct Population Segment and is a significant contributor of brood rearing habitat for the Mount Grant Population Management Unit (PMU). Rough Creek is a perennial stream that flows into the Walker River downstream of the “Elbow”.

The fencing project serves three primary purposes: 1) improve brood rearing habitat for Bi-State sage-grouse; 2) protect Rough Creek channel from livestock grazing to improve riparian conditions; and 3) develop four pastures for rotational grazing of the Nine-mile Unit of the previous Flying M Ranch. The fence will relieve grazing pressure from the Rough Creek channel which was previously incised, but has reached a new stable state within a secondary flood plain. Future projects are planned to raise the streambed over a 20-30 year period and allow Rough Creek to once again access its original flood plain. The fence also allows livestock to be grazed in a rotational pattern and reduce grazing pressure in a few key areas that are primarily used by sage-grouse as brood rearing habitat. In addition, continued irrigation will be implemented by the lessee to maintain and improve brood rearing habitat in key areas.

The fence was completed in March of 2022 by Gold Standard Fence LLC and is approximately 12,471 feet in length around the perimeter and encompasses approximately 91 acres. Nine gates were constructed along the perimeter to allow for maintenance of irrigation structures and ditches and allow access with equipment if necessary. The fence was constructed to wildlife friendly specifications.

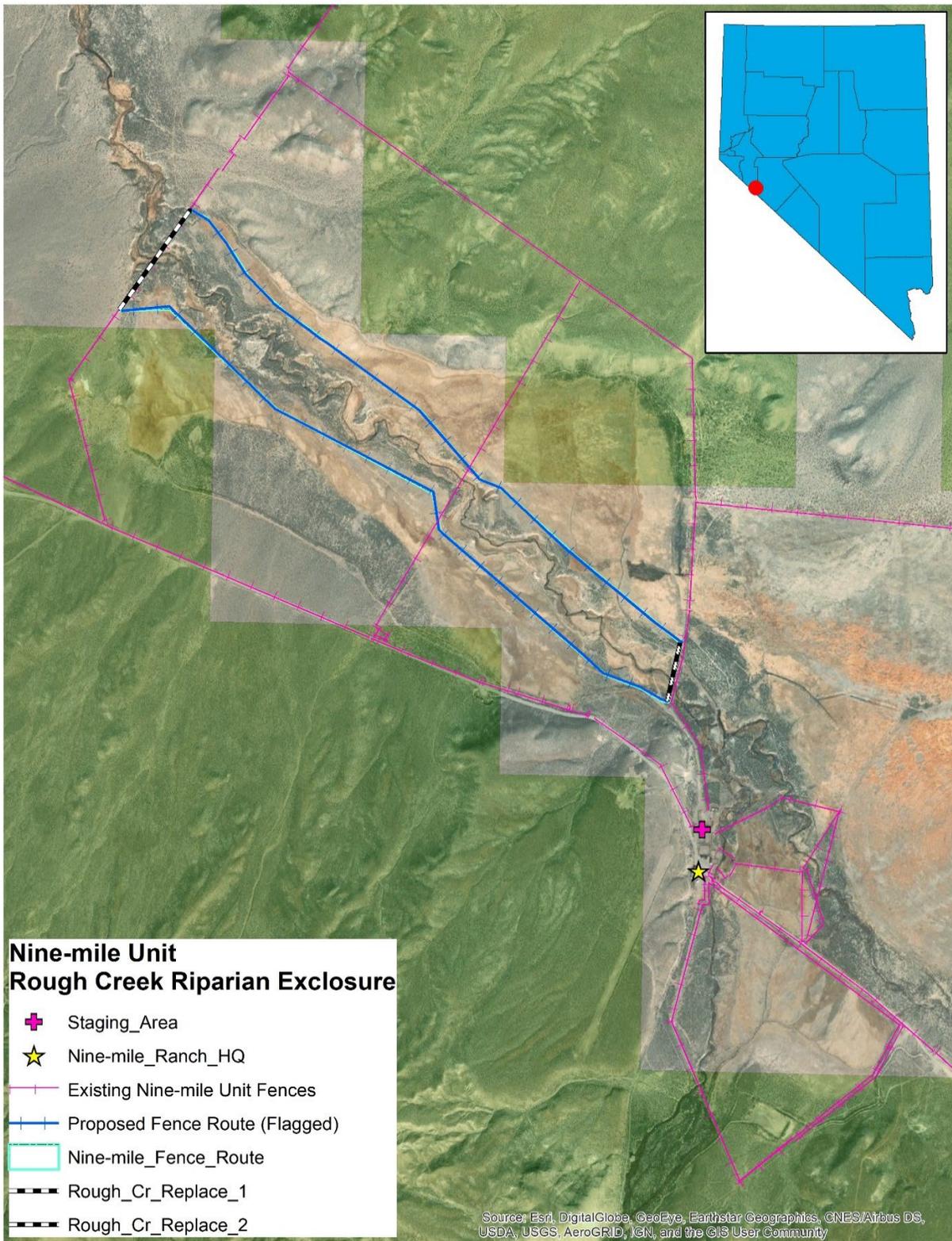


Figure 5. Approximate alignment of the Rough Creek riparian fence within the Nine-mile portion of the Walker River Recreation Area located in Mineral County, Nevada.

# Upland Game Translocation and Monitoring

## Project Accomplishment Summary

### *Rio Grande Turkey Establishment – Walker River Recreation Area*

Game Division personnel, volunteers, and Nevada State Park personnel participated in two capture efforts to collect wild Rio Grande turkeys in Paradise Valley of Humboldt County and translocate them to the Flying M portion of the Walker River Recreation Area (WRRRA) in Mineral County. The effort was also conducted to reduce the number of turkeys residing near the town of Paradise Valley (approximately 200 birds). Trapping efforts conducted on January 11 and 27, 2022 resulted in the capture of 20 and 7 birds respectively. In total, 18 females and 7 males were liberated at the release site during the course of the effort. Notably, just three of the 27 birds captured were considered juvenile, or yearling birds. Turkeys were banded with leg bands and 11 of the birds were sampled for various poultry related diseases. Testing results were negative for all diseases. Turkeys were subsequently released on January 12<sup>th</sup> and 28<sup>th</sup>. Two females perished before release during the initial effort. A future release of turkeys is intended for the WRRRA in 2023 and 2024 at various locations to help ensure sustainability of this population.

### *Mountain Quail and Hungarian Partridge Monitoring*

Game Division purchased 10 trail cameras to assist with monitoring efforts for mountain quail at previous release sites and to help assess populations of Hungarian, or gray partridge. Cameras will be placed at water sources to help assess use and recruitment during the summer months. A secondary intent of monitoring gray partridge populations is to determine if there may be enough birds to attempt capture and translocation to other suitable habitats and expand their range in Nevada.

In addition to this monitoring, Eastern Region Game Division personnel set up two videography call stations to determine mountain quail occupation within two major drainages on Mount Moriah of the northern Snake Range. Mountain quail were first released here four years ago in 2018 and determining the sustainability of the population is important for future efforts. This photo (taken 4/14/2022) is a positive sign that mountain quail continue to occupy this site, but overall densities are unknown at this time.



## **Virginia Mountains Greenstrip 2021**

NDOW contracted the pre-emergent herbicide aerial application to the approximately 2,674 acres of the Virginia Mountain Greenstrip project during October 2021. All proposed acres were treated successfully. Site inspection will occur during spring of 2022 to determine herbicide effectiveness. The site visit will determine next steps forward, which may include additional herbicide treatment recommendations or follow up seeding of native and non-native perennial bunchgrasses, forbs, and shrubs.

## **Mormon Mountains Post-Fire Restoration**

In order to suppress the Brome grass invasion within the area burned by the Duzak fire, native shrubs were grown out to one-gallon and five-gallon sizes. These plants were grown from seeds collected within the Mormon mountains outside of the burned areas. These seeds were then taken to the Native Plant Nursery in Las Vegas run by Nevada Department of Forestry to be grown. Four sites were selected within areas affected by the Duzak fire as restoration sites. The restoration sites selected are areas surround small game guzzlers, which is an artificial water source. These sites were chosen as priority sites to take advantage of water being attractants for animals who can move native seeds created by the native species to other areas. Plants were planted by volunteers on three Saturdays in October 2021 from 10/16/21 – 11/6/21. Holes for the plants were drilled using a small power auger. The root-balls of each plant were planted level to the soil surface and fully integrated into the native soil to prevent it from drying out faster than the surrounding area. Plants were caged with steel cages anchored with rebar to prevent herbivory. Plants received water following planting. Approximately eight acres of degraded habitat was planted with native plants by this effort, two acres at each restoration site. **A total of 769 native plants were planted at the four sites from 22 different species.**

Volunteers were recruited from the local populace using social outreach. Lincoln County public works paid in full for the plants that were planted on each site. The Friends of Nevada Wilderness organized volunteer efforts. In total 32 volunteers contributed 310 service hours. Their commitment to Nevada's wildlife is commendable.

Supplemental watering will be provided following monitoring efforts in June should winter rains be determined to be insufficient, <4" as monitored by the water level in each adjacent guzzler.

## **Assessing Impacts to Sage-Grouse from Anthropogenic Noise in Nevada**

This project is a multi-year effort to measure sound levels at sage-grouse leks and assess potential impacts of anthropogenic noise on sage-grouse. Project accomplishments for FY2022 include collection of sound level data at approximately 50 sage-grouse leks beginning in March 2022 and continuing through the end of May 2022. Sage-grouse leks across central and northern Nevada were identified based on previous years monitoring efforts. Collection of sound level data was accomplished using Larson Davis 831 sound level meters outfitted with a low-noise microphone and a paired audio recorder. Sound levels at each lek were continuously recorded for 10-14 days at each lek before being retrieved and moved to another lek. Planned work for FY2023 will include data processing and preliminary analysis. Additionally, monitoring of 50-75 sage-grouse leks is planned for the 2023 lekking season (March – May 2023).

## Proposed Upland Game Bird Stamp Projects for State Fiscal Year 2023

Title of Proposed Project	Project Manager	\$ Requested from UGBS Account	Other Funding Sources (only quantified in-kind contributions included)
Soil Herbicide Monitoring (774)	Brittany Trimble	\$12,180	\$12,180 (BLM)
Bi-State Sage-grouse Monitoring (737)	Shawn Espinosa	\$25,000	\$75,000 (USFWS Grant)
Effects of Mineral Development of Greater Sage-grouse (734)	Shawn Espinosa	\$47,500	\$187,868 (USFWS Grant)
Western Complex WMAs Habitat Improvements (751)	Isaac Metcalf	\$10,000	\$15,000 (NDOW DS)
Western Complex WMA Water Control Repair (764)	Isaac Metcalf	\$15,000	\$15,000 (NDOW DS)
Rangeland Restoration for Greater Sage-grouse (745)	Tori Cernoch	\$20,000	\$20,000 (NDOW HCF)
Big Lake PJ Removal-Cleanup (776)	Tori Cernoch	\$5,000	n/a
Overton WMA Food Plots (740)	Bennie Vann	\$10,000	n/a
Licking Ranch WMA Improvement Project (731)	Jeremy Lutz	\$30,000	\$12,000 (NDOW DS), \$30,000 (NDOW HCF)
Upland Game Translocation and Monitoring (748)	Shawn Espinosa	\$13,400	\$30,000 (USFWS Grant)
Greater Sage-grouse Statewide Monitoring (738)	Shawn Espinosa	\$29,370	\$170,000 (USFWS Grant)

## Proposed Upland Game Bird Stamp Projects for State Fiscal Year 2023

Title of Proposed Project	Project Manager	\$ Requested from UGBS Account	Other Funding Sources (only quantified in-kind contributions included)
Key Pittman Wildlife Food Plots (743)	Andrew Coonen	\$7,500	n/a
Corners for Quail (742)	Tori Cernoch	\$25,000	\$7,000 (in-kind Private Landowner)
Corta Fire Habitat Improvement	Matt Glenn	\$17,250	NDOW Restoration Grant (\$35,000), NDOW Heritage (\$40,000), NDOW Upland Game Bird Stamp (\$17,250)
Butler Basin Meadow and Spring Habitat Improvement (722)	Tracy Kipke	\$40,000	\$40,000 (NDOW HCF), \$150,000 (NDOW Heritage), \$100,000 (FS RAC), \$300,000 (Navy REPI), \$100,000 (NV Dream Tag), \$67,500 (USFWS Grant)
<b>Totals</b>		<b>\$307,200</b>	<b>\$1,423,798</b>

## Upland Game Bird Stamp Account Budget Status

Balance in the Account at Start of FY 2022	\$ 253,491.01
Plus Estimated Revenue Accrued During FY 2022	\$ 375,246.39
Less Estimated Total FY 2022 Expenditures	(\$ 147,893.23)
Less Estimated Administrative Costs (10% of Revenue)	(\$ 37,524.64)
Estimated Balance at End of FY 2022 / Start of FY 2023	\$ 443,319.53
Plus Estimated Revenue to be Accrued During FY 2023	\$ 375,246.39
Less Estimated Administrative Costs (10% of Revenue)	(\$ 37,524.64)
Less Proposed New Project FY 2023 Expenditures	(\$207,200.00)
<u>Estimated Balance at End of FY 2023</u>	<u>\$ 573,841.28</u>
Less Remaining Obligations on Previously Funded Projects	\$353,901.51
<u>Account Balance Less Previous Obligations</u>	<u>\$219,939.77</u>

Notes: The budget information in this table is preliminary and subject to change. The amount of Upland Game Bird Stamp revenue accrued during FY 2022 was not available when this report was prepared; therefore, the FY 2021 revenue number was used for both FY 2022 and 2023.





# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Soil Herbicide Monitoring

**Project ID:** 774

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Brittany Trimble Nevada Department of Wildlife

**Phone Number:** (775) 777-2393

**Email:** btrimble@ndow.org

## Project Partners

Name	Agency	Role
Dan Harmon	Agricultural Research Service	Agency Cooperator
Charlie Clements	Agricultural Research Service	Agency Cooperator
Caleb McAdoo	Nevada Department of Wildlife	Agency Cooperator
Katie Andrie	Nevada Department of Wildlife	Agency Cooperator
Casey Addy	Bureau of Land Management	Agency Cooperator

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** no

**Project Schedule:** Pre-treatment monitoring would occur in fall 2022 immediately before herbicide application. Post-treatment monitoring would occur 1 week after herbicide application, 3 months after application, 6 months after application, 9 months after application, and 12 months after application.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

**Location Narrative:**

Pre-emergent herbicide (imazapic) treatments in northern Nevada applied in fall 2022, TBD.

**NDOW Region:** Eastern

**NDOW Management Units:** 065 , 104 , 073 , 091 , 103 , 074 , 079 , 106 , 067 , 109 , 075 , 102 , 081 , 121 , 078 , 105 , 077 , 068 , 062 , 061 , 064 , 101 , 066 , 071 , 072 , 076

**Nevada Sage Grouse Population Management Unit:** Ruby Valley , North Fork , Snake , Gollaher , Tuscarora , Butte/Buck/White Pine , East Valley , Desert , South Fork , O'Neil Basin , Islands

**County:** Elko

## Land Status

Land Status	Acres	Percent of Project
No results		

**Bureau of Land Management Office:** Elko District - Tuscarora Field Office , Elko District - Wells Field Office

**US Forest Service Ranger District:** Humboldt-Toiyabe National Forest - Mountain City-Ruby Mountains-Jarbidge Ranger District

# Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT RESTORATION and REHABILITATION: Wildland fire rehabilitation

## Project Objectives:

- To control cheatgrass and other non-native annual grasses with herbicide application.

**NDOW Initiative Addressed:** No initiatives

**Priority Resource Impacted:** N/A

**Priority Species Impacted:** N/A

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** yes

**Project Clearance or Authorization Status:** In Progress

## Project Rationale:

The Nevada Department of Wildlife and other land management agencies often use the pre-emergent herbicide imazapic to control invasive annual grasses in priority habitat areas across the state, especially after an area has experienced wildfire. Because herbicides are primarily tested for agricultural purposes, the effects of pre-emergent herbicide on semi-arid rangeland soils is largely unknown, including effects on soil biological function (and therefore nutrient cycling) and overall persistence of the herbicide in the seed germination zone of the surface horizon. While different soil properties such as texture and soil organic matter (humus) are known to affect the residence time of particular herbicides in the soil, the climatic conditions in combination with these different soil properties specific to Nevada rangelands have not been analyzed. Management decisions are often made based on the herbicide half-life listed on the herbicide labels, which are typically based on agricultural settings and conditions and, in reality, could be vastly different in rangeland settings and be affecting follow-up rehabilitation and restoration efforts. This project will provide the funding to analyze soil samples collected from pre-emergent herbicide treatments that will be implemented in fall 2022 (locations TBD) with variable soil texture and climate conditions to test herbicide persistence and effects on soil health over a year-long period and will also allow for the purchase of weather stations to place at each sampling location to track climate data for each location. The use of different application rates of herbicide will be analyzed under the same soil conditions. Since the half-life of the pre-emergent herbicide imazapic is listed on the label as 120 days, soil testing for residue and soil health affects is not expected to last more than a year, but if herbicide is still testing as present at the 12-month testing period, additional funds will be sought for future analysis. The results from this study will be used to inform future management across the State to ensure the use of best management practices. The USDA Agricultural Research Service Reno office has recently acquired the equipment to test soil for herbicide residue and is a participating partner on the project. Cost of analysis using this equipment is unknown and cost estimates from other labs is used to estimate total cost of the project to provide a buffer in case the ARS equipment is not functional by the time of the project initiation. Samples for biological analysis will be sent to EarthFort. The Elko BLM District is also a project partner and has committed to contribute to project costs using Elko BLM-NDOW Cooperative Agreement funds.

# Project Treatments and Actions

**Treatment Name:** Fall 2022 Herbicide TBD

**Acres:** 11025538.7487117

**Action:** Herbicide application (aerial)

**Approach Narrative:** Project location will be determined by areas in need of herbicide treatment in fall 2022.

**Planned Start:** 09/2022

## Project Monitoring

### Monitoring Plan:

Pre-treatment samples will be taken for baseline analysis of herbicide residue and biological composition and activity before the application of herbicide as close as possible to the application date at each site. Samples will be taken at each site for post-treatment analysis for herbicide residue and biological composition and activity at 1 week, 3 months, 6 months, 9 months, and 12 months post-application. All samples collected will be handled and stored appropriately and mailed off for analysis as soon as possible following collection to allow for the most accurate testing possible. Sampling for this project will begin in fall 2022 and end in fall 2023. Climate conditions will be recorded at the time of sampling and weather stations will be used to track the amount of precipitation received at each site since time of herbicide application. All data and lab results will be transcribed and stored in a single database accessible to all project partners.

## Project Funding and Budget

Budget Item	Bureau of Land Management 2023	NDOW Upland Game Stamp 2023
<b>Contracts</b>		
EarthFort soil biological analysis	\$12180	\$3660
Herbicide residue analysis		\$7020
<b>Materials Purchase</b>		
Weather station		\$1500

### Budget Narrative:

Funding received by Upland Game Stamp will be used in combination with funds from the Elko District BLM-NDOW Cooperative Agreement to purchase weather stations and to analyze soil samples for herbicide residue and biological composition and activity. Soils with low, moderate, and high predicted imazapic effectiveness treated with 0, 4, 6, and 8 ounces of imazapic per acre will be sampled and analyzed at 6 time periods throughout the year (pre-treatment + 5 post-treatment measurements: 1 week, 3 months, 6 months, 9 months, 12 months). Biological Analysis (\$220/sample): 9 treated samples + 3 non-treated control samples taken near treatment area = 12 x 6 x \$220 = \$15,840.00 Herbicide Residue Analysis (est. \$130/sample\*): 9 treated samples = 9 x 6 x \$130 = \$7,020.00 \*This is an estimate of cost of residue analysis based on price quotes from various labs. Cost could differ once ARS has herbicide residue equipment is running and cost of equipment is better known.



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Bi-State Sage-grouse Monitoring

**Project ID:** 737

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Shawn Espinosa Nevada Department of Wildlife

**Phone Number:** (775) 688-1523

**Email:** sespinosa@ndow.org

## Project Partners

Name	Agency	Role
Dr. Peter Coates	U.S. Geological Service	Agency Cooperator
Elizabeth Ammon	Great Basin Bird Observatory	Non-Agency Cooperator

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** yes

**Project Schedule:** State Fiscal Year 2022 initiated the second phase of planned monitoring within the Mount Grant and Desert Creek Population Management Units of the Bi-State Sage-grouse Conservation Area. Per the 2012 Bi-State Action Plan, initial capture and monitoring work took place during the fall of 2015 and concluded in 2018. This second phase of monitoring will begin during the fall of 2021 and will conclude in 2024.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

### Location Narrative:

This work will take place within the Bi-State Sage-grouse Distinct Population Segment within the Desert Creek and Mount Grant Population Management Units (PMUs). Capture sites will focus on the lower Desert Creek area and Sweetwater Flat within the Desert Creek PMU and Nine-mile Flat and Mount Grant proper within the Mount Grant PMU.

**NDOW Region:** Western

**NDOW Management Units:** 204 , 202

**Nevada Sage Grouse Population Management Unit:** Desert Creek/Fales , Bodie/Mount Grant

**County:** Lyon , Mineral

## Land Status

Land Status	Acres	Percent of Project
Department of Defense	9160.3	5.9
Forest Service	91992.7	59.7
Bureau of Land Management	44777	29

**Bureau of Land Management Office:** Carson City District - Stillwater Field Office , Carson City District - Sierra Front Field Office

**US Forest Service Ranger District:** Humboldt-Toiyabe National Forest - Bridgeport Ranger District

**Special Land Designations:** N/A

# Project Summary and Justification

**Project Activity and Sub-activity:** POPULATION MANAGEMENT, MONITORING, and RESEARCH: Terrestrial Wildlife

## Project Objectives:

- To conduct population surveys or research that informs management or monitoring needs.

## NDOW Initiative Addressed:

- Sagebrush Habitat Plan (NDOW)

**Strategic Habitats Addressed:** Aspen woodland , High-elevation sagebrush dominated shrubland , Lakes and reservoirs , Linear riparian: perennial and ephemeral rivers and streams , Low-elevation sagebrush dominated shrubland , Mixed desert scrub , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Other riparian: meadow, marsh, spring, seep, and lakeshore , Pinyon-juniper woodland (not encroachment) , Salt desert shrub , Upper montane coniferous forest and woodland

**Priority Resource Impacted:** Upland Game

**Priority Species Impacted:** Greater sage-grouse

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** yes

**Project Clearance or Authorization Status:** Not Applicable

## Project Rationale:

Since 2000, a substantial amount of information has been collected on Greater sage-grouse within the Bi-State Distinct Population Segment; however, the majority of research and intensive monitoring work has taken place within the California portion of this population. Working in conjunction with the USGS – Western Ecological Research Center and Great Basin Bird Observatory (GBBO), The Nevada Department of Wildlife is proposing to conduct radio-marking and follow-up work to more clearly understand habitat use and demographic parameters within the Desert Creek and Mount Grant Population Management Units in Nevada. In addition, vegetative measurements will also be collected at used and random sites during various life stages. This information will also help to further refine the resource selection function model for the Bi-State DPS. We propose to conduct this monitoring over a three-year period from 2021 through 2024. The information collected will also help assess the effects of various habitat improvement projects, as identified within the Bi-State Action Plan, that have taken place within this portion of the Bi-State DPS and will continue to occur. This project is intended to better understand habitat utilization, identify key habitats and determine movement patterns of sage-grouse as well as determine vital rates within the Desert Creek and Mount Grant Population Management Units. The greatest threats to these populations of sage-grouse are pinyon and juniper encroachment, suburban development, wildfire and the degradation of small meadows and spring complexes over time that serve as late-brood rearing habitat. Initial objectives include the following: 1) Capture at least 10 female sage-grouse and place GPS/Satellite transmitters to determine seasonal movement patterns and determine home

range; 2) Capture approximately 20 females sage-grouse and place VHF radio transmitters to augment the GPS/Satellite marked sample; and 3) Maintain approximately 20-30 VHF radio-marked females for two subsequent years after year 1 of the study through year 3. This work will assist with determining the following: a) adult survival rates (monthly and annual); b) identification of nest sites and nest success; c) examination of nest-site vegetative characteristics and if differences exist between successful and unsuccessful nest sites; d) determination of nest survival rates; e) brood rearing habitat selection f) vital rate associations with habitat co-variables; g) overall distribution and seasonal movement patterns

## Project Treatments and Actions

### **Treatment Name:** Mount Grant

**Action:** Monitor sage grouse leks or populations

**Approach Narrative:** See project rationale and monitoring section as well as attached.

**Planned Start:** 07/2021

**Action:** Collect, analyze, or model sage grouse population or habitat use data

**Approach Narrative:** See project rationale and monitoring section as well as attached.

**Planned Start:** 07/2021

**Action:** Deploy GPS/VHF collars on sage grouse

**Approach Narrative:** See project rationale and monitoring section as well as attached.

**Planned Start:** 07/2021

## Project Monitoring

### **Monitoring Plan:**

Sage grouse movement, survivorship, and reproduction will be monitored following release. Portable receivers (Communication Specialist Inc., Orange, CA; Advanced Telemetry Systems Inc., Isanti, MN) are used along with 3-element Yagi antennas to monitor radio-marked grouse. Relocation error is minimized by circling around each grouse 30 – 50 m. Using the approximated distance and a compass bearing, the location coordinates (Universal Transverse Mercator) are obtained using GPS. Throughout the nesting and brood-rearing period, researchers attempted to locate female grouse  $\geq 2$  times per week. Relocation coordinates are transferred into a GIS (ArcMap 9.2, ESRI Products, Redlands, CA) for space-use analysis. Kernel density (50, 90, and 95%) is calculated for all radio locations and for each grouse separately (95%). The purpose of using all locations is to estimate area used at the population level. Kernel density is also calculated for brood-rearing females. Kernel calculations are carried out in multiple steps. First, relocation points are weighted to account for biases associated with non-equivalent relocation intervals. Second, robust estimates of smoothing parameters ( $h$ ) are generated using Animal Space Use 1.3 (Home and Garton 2009). Last, those parameters are used in Hawth's Tools (ArcMap 9.2) to calculate fixed kernel densities. Kernel density maps are generated based on the estimated densities for 2009 and 2010. If a grouse is found at the same location during the nesting period, researchers visually determined if a grouse is nesting. Nests are monitored  $\geq 3$  times per week until fate is determined. Successful nests are classified as  $\geq 1$  chick hatched. Nests are also scored as depredated, partially depredated, or abandoned. Following nest fate, understory cover is recorded at the nest bowl using a coverboard (Jones 1968), Robel pole (Robel 1970), and digital photography method. Vegetation composition cover is measured at multiple subplots (20 X 50 cm) located  $\leq 25$  m of each nests using Daubenmire method (Daubenmire 1959). Canopy cover is measured along two 25-m transects, one 50-m transect, and one 100-m transect extending from the nest bowl every  $90^\circ$ . The orientation of the quadrants is randomized. Shrub species are recorded and measured. Width (cm) and heights (cm) of a random sample of individual shrubs along the line are recorded. These shrub widths are measured within 5, 10, and 25 m from the nest for all four transect lines, within 50 m for two transect lines, and 100 m for one transect line. The purpose of the different transect lengths is to identify the scale of use for shrub cover within 100 m radius of a nest site. To identify vegetation factors selected by grouse, defined as the disproportionate use to availability, measurements of vegetation characteristics are compared at nests to those at random points. Thus, the same habitat measurements are conducted at random points to represent available habitat. Evidence for multi-scale selection generating two random points for each nest is evaluated. One point is within 200 m of the nest (dependent) and the other is within the study area (independent). The preliminary results are reported as means ( $\pm$ SE) of vegetation characteristics for random points and nests. However, multiple a priori generalized mixed effects models with a binomial error distribution at multiple spatial scales will be compared for strength of evidence. Researchers will use an information-theoretic approach, including  $\Delta$ AIC, Akaike's weights, evidence ratios, likelihood-based  $R^2$ , and likelihood ratio

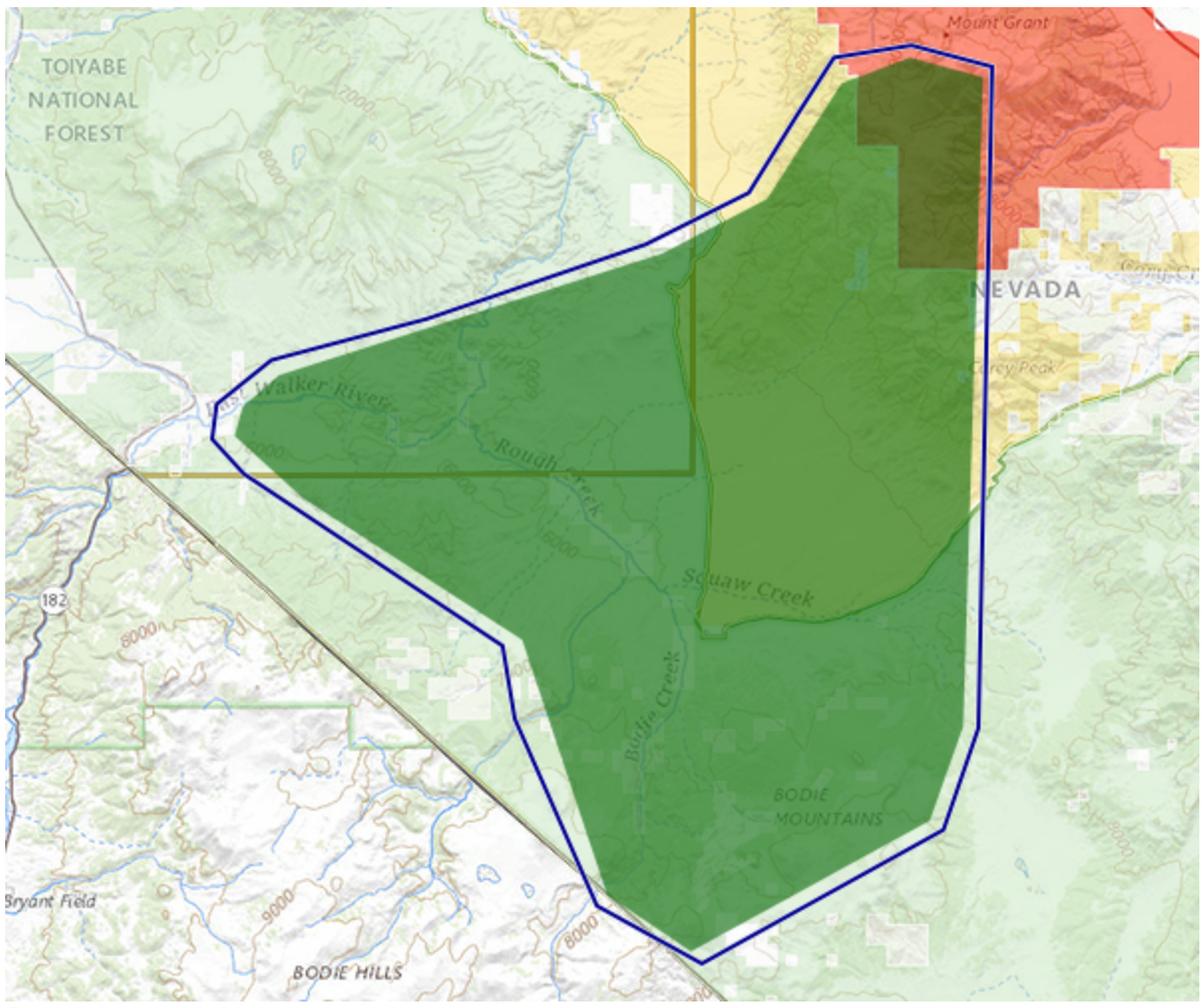
tests to evaluate models. Model averaged parameter estimates will be used to develop resource selection functions. Following the completion of a successful nest, female grouse with broods are monitored closely by obtaining >2 locations per week. Spotlights are used every 10 days following nest hatch during night hours to count the number of chicks in the brood. Broods are considered unsuccessful if no chicks are found during spotlight surveys. To confirm unsuccessful broods (prevent false negative), females are rechecked within 48 hours. A similar habitat measurement protocol is conducted at brood sites as that at nest sites. However, transects maximum extent is 25 m for broods sites. Canopy cover is measured along three 25 m transects, which extended from the brood location every 120° with random orientation. The width (cm) of each shrub species is measured along the three transect lines within 5, 10, and 25 m from the brood location. Because habitat changes through time and broods are mobile, measurements are collected at each 10-day interval. Differences in vegetation use between night (roosting) and day (foraging) hours are also investigated. These surveys included one day and one night observation of habitat used by broods (within a 24 hour period), as well as, one observation of a random location within 200 m of the brood (dependent) to estimate disproportionate use to availability.

## Project Funding and Budget

Budget Item	NDOW Upland Game Stamp 2023	USFWS Grant - Sage Grouse Conservation 2023
<b>Equipment/Vehicle Rental</b>		
VHF Transmitters	\$1688	\$5062
Vehicle Rental (2)	\$5500	\$16500
<b>Other</b>		
Field Housing	\$250	\$750
<b>Personnel</b>		
Wildlife Technicians	\$17562	\$52688

### **Budget Narrative:**

Funds from the Nevada Upland Game Bird Stamp program will be used as match for federal aid in Wildlife Restoration - Nevada Sage-grouse Conservation Program. These funds will be directed towards wildlife technicians, data analysis, VHF transmitters, vehicle rentals and field housing.



**Boundaries**

- County Boundary
- USFS Office Boundaries
- BLM Office Boundaries
- NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- Department of Energy
- Fish and Wildlife Service
- US Forest Service
- National Park Service
- Nevada State Lands
- Nevada Park Service
- Private
- Other

**Project Geometry**

- Project Boundary
- Treatment Area: Mount Grant



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Effects of Mineral Development on Greater Sage-grouse

**Project ID:** 734

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Shawn Espinosa Nevada Department of Wildlife

**Phone Number:** (775) 688-1523

**Email:** sespinosa@ndow.org

## Project Partners

Name	Agency	Role
Dr. Peter Coates	U.S. Geological Service	Agency Cooperator
Elizabeth Ammon	Great Basin Bird Observatory	Agency Cooperator

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** yes

**Project Schedule:** Year 1 period of performance is July 1, 2022 – June 30, 2023  
Fall 2022 • September – October 2022: Capture and marking of sage-grouse; • November – December 2022: Report writing and development of annual data summary. Winter 2022 • January – February 2023: Prepare for upcoming field season (hire and train technicians) Spring 2023 • Capture and mark additional sage-grouse to compensate for mortalities over-winter; • Ground monitoring of radio collared grouse and nest locations; • Habitat measurements at nests and random locations. Summer 2023 • Ground monitoring of sage-grouse broods; • Habitat measurements at brood locations and random locations. This project will be conducted over a minimum of 5 years to determine effects to sage-grouse populations and many of the demographic rates take at least this amount of time to detect changes.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

### Location Narrative:

The fieldwork will take place in two separate locations (described below) encompassing portions of Eureka County in central Nevada and Elko County in northeastern Nevada: 1) Cortez Range – located in central Nevada between the towns of Eureka

and Carlin, Nevada and likely site of proposed Goldrush Mine in Horse Canyon. 2) Pinion Range – located in western Elko County and southwest of the town of Elko and likely site of the proposed South Railroad Mine near Bunker Hill.

**NDOW Region:** Eastern

**NDOW Management Units:** 141 , 065 , 142

**Nevada Sage Grouse Population Management Unit:** South Fork , Three Bar , Cortez

**County:** Elko , Eureka

## Land Status

Land Status	Acres	Percent of Project
Bureau of Land Management	214504.6	66.7
Private	29603.3	9.2

**Bureau of Land Management Office:** Elko District - Tuscarora Field Office , Battle Mountain District - Mount Lewis Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

# Project Summary and Justification

**Project Activity and Sub-activity:** POPULATION MANAGEMENT, MONITORING, and RESEARCH: Terrestrial Wildlife

## Project Objectives:

- To conduct population surveys or research that informs management or monitoring needs.

## NDOW Initiative Addressed:

- Sagebrush Habitat Plan (NDOW)

**Strategic Habitats Addressed:** Aspen woodland , High-elevation sagebrush dominated shrubland , Lakes and reservoirs , Linear riparian: perennial and ephemeral rivers and streams , Low-elevation sagebrush dominated shrubland , Mixed desert scrub , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Other riparian: meadow, marsh, spring, seep, and lakeshore , Pinyon-juniper woodland (not encroachment) , Salt desert shrub , Upper montane coniferous forest and woodland

**Priority Resource Impacted:** Upland Game

**Priority Species Impacted:** Greater sage-grouse

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** yes

**Project Clearance or Authorization Status:** Not Applicable

## Project Rationale:

Nevada has a diverse array of natural commodities including gold, silver, copper, lithium geothermal energy, barite, gypsum and aggregate material and leads the nation in the value of non-fuel mineral that it produces (\$8.5 billion in 2017). Nevada ranks fourth in the world in terms of gold production, producing 5.6 million ounces in 2017, which was 6% of the world's production. Mineral production includes exploration, mine development and operations as well as an assortment of infrastructure associated with the mine including transmission lines, pipelines, roads and outbuildings for storage and maintenance of equipment. Although there is a general understanding and body of research indicating that these features can have negative effects on Greater Sage-grouse populations, there is a paucity of research that has specifically been conducted on the effects of mining activities on this species throughout its range. We propose to conduct a five-year (2022-2026) monitoring program at two study sites proposed for significant mineral development (gold mining) to gain a better understanding of the specific effects of mine development on various life stages of Greater Sage-grouse at various spatial scales (e.g., site scale, fine scale (seasonal habitat), and mid-scale or population level). We will measure vital rates such as nest

initiation rates, clutch size, nest survival rates, brood survival rates and adult and juvenile survival of males and females within and adjacent to mine Plan of Operations areas and areas influenced by mine development. The study sites currently include the Cortez Range located in Eureka County and the Pinion Range located in Elko County, Nevada. Field work for this project will be conducted by the Great Basin Bird Observatory working in cooperation with the USGS - Western Ecological Research Center located in Dixon, California. This project is intended to determine the ultimate effects of mineral development on Greater sage-grouse at two study areas located in central Nevada. Areas that have been selected for research and monitoring include the proposed Goldrush Mine Project in the Cortez Range in Eureka County and the South Railroad Mine Project in the Pinion Range of Elko County. Both areas have existing sage-grouse populations and proposed mine Plans of Operation areas are located within Sage-grouse Priority Habitat Management Areas. At each study site, we propose to 1. Capture approximately 20-30 female sage-grouse and place VHF radio transmitters and leg bands on the birds. At a minimum, maintain that number of radio-marked females annually through additional capture work; 2. Capture at least 5 female sage-grouse and attach GPS/Satellite transmitters to determine daily, monthly and seasonal movement patterns and determine home range. This work will assist with determining the following: a) identification of nest sites and nest initiation rates; b) determination of nest survival rates; c) examination of nest-site vegetative characteristics and if differences exist between successful and unsuccessful nest sites; d) determination of brood habitat characteristics; e) determination of brood survival rates; f) determination of survival rates of adults and juveniles (both male and female); g) determination of differences of seasonal survival rates; and h) determine movement patterns, seasonal distribution and key habitats. Radio-Telemetry. We are proposing to capture approximately 20-30 female and up to 10 male sage-grouse annually over an eight year period and maintain at least 20 live females during each reproductive season. Sage grouse movement, survivorship, and reproduction will be monitored following release. Portable receivers (Communication Specialist Inc., Orange, CA; Advanced Telemetry Systems Inc., Isanti, MN) will be used along with 3-element Yagi antennas to monitor radio-marked grouse. Relocation error is minimized by circling around each grouse 30 – 50 m. Using the approximated distance and a compass bearing, the location coordinates (Universal Transverse Mercator) are obtained using GPS. Throughout the nesting and brood-rearing period, researchers attempted to locate female grouse  $\geq 2$  times per week. Space-Use. Relocation coordinates will be transferred into a GIS (ArcMap 9.2, ESRI Products, Redlands, CA) for space-use analysis. Kernel density (50, 90, and 95%) is calculated for all radio locations and for each grouse separately (95%). The purpose of using all locations is to estimate area used at the population level. Kernel density is also calculated for brood-rearing females. Kernel calculations are carried out in multiple steps. First, relocation points are weighted to account for biases associated with non-equivalent relocation intervals. Second, robust estimates of smoothing parameters (h) are generated using Animal Space Use 1.3 (Horne and Garton 2009). Last, those parameters are used in Hawth's Tools (ArcMap 9.2) to calculate fixed kernel densities. Kernel density maps are generated based on the estimated densities for 2009 and 2010. Nests and vegetation. If a grouse is found at the same location during the nesting period, researchers visually determined if a grouse is nesting. Nests are monitored  $\geq 3$  times per week until fate is determined. Successful nests are classified as  $\geq 1$  chick hatched. Nests are also scored as depredated, partially depredated, or abandoned. Following nest fate, understory cover is recorded at the nest bowl using a coverboard (Jones 1968), Robel pole (Robel 1970), and digital photography method. Vegetation composition cover is measured at multiple subplots (20 X 50 cm) located  $\leq 25$  m of each nests using Daubenmire method (Daubenmire 1959). Canopy cover is measured along two 25-m transects, one 50-m transect, and one 100-m transect extending from the nest bowl every 90°. The orientation of the quadrants is randomized. Shrub species are recorded and measured. Width (cm) and heights (cm) of a random sample of individual shrubs along the line are recorded. These shrub widths are measured within 5, 10, and 25 m from the nest for all four transect lines, within 50 m for two transect lines, and 100 m for one transect line. The purpose of the different transect lengths is to identify the scale of use for shrub cover within 100 m radius of a nest site. To identify vegetation factors selected by grouse, defined as the disproportionate use to availability, measurements of vegetation characteristics are compared at nests to those at random points. Thus, the same habitat measurements are conducted at random points to represent available habitat. Evidence for multi-scale selection generating two random points for each nest is evaluated. One point is within 200 m of the nest (dependent) and the other is within the study area (independent). The preliminary results are reported as means ( $\pm$ SE) of vegetation characteristics for random points and nests. However, multiple a priori generalized mixed effects models with a binomial error distribution at multiple spatial scales will be compared for strength of evidence. Researchers will use an information-theoretic approach, including  $\Delta$ AIC, Akaike's weights, evidence ratios, likelihood-based  $R^2$ , and likelihood ratio tests to evaluate models. Model averaged parameter estimates will be used to develop resource selection functions. Brood-rearing and vegetation. Following the completion of a successful nest, female grouse with broods are monitored closely by obtaining  $>2$  locations per week. Spotlights are used every 10 days following nest hatch during night hours to count the number of chicks in the brood. Broods are considered unsuccessful if no chicks are found during spotlight surveys. To confirm unsuccessful broods (prevent false negative), females are rechecked within 48 hours. A similar habitat measurement protocol is conducted at brood sites as that at nest sites. However, transects maximum extent is 25 m for brood sites. Canopy cover is measured along three 25 m transects, which extended from the brood location every 120° with random orientation. The width (cm) of each shrub species is measured along the three transect lines within 5, 10, and 25 m from the brood location. Because habitat changes through time and broods are mobile, measurements are collected at each 10-day interval. Differences in vegetation use between night (roosting) and day (foraging) hours are also investigated. These surveys included one day, and one-night observation of habitat used by broods (within a 24 hour period), as well as, one observation of a random location within 200 m of the brood (dependent) to estimate disproportionate use to availability. Raven and Raptor Surveys. Surveys are conducted for Common

Ravens (*Corvus corax*; hereafter ravens) and raptors during nesting and following nest fate. Surveys are conducted using binoculars at each nest for 15 minutes searching all four quadrants around the nest equally. Time of sighting, bearing, distance (using a rangefinder) of each raptor and corvid is tallied and birds are identified to species when possible. Additional surveys are used to estimate raven and raptor densities using Program Distance (Thomas et al. 2009) across the landscape and relate it to nest survival parameters. Survey points are randomly generated within the study area. Points are generated on and off roads. No points are assigned to paved roads. Surveys are completed between mid-May and late-July. The time of survey is randomized between one half hour our before sunrise to one half hour following sunset. The same protocol for nest surveys is carried out at points. These data will provide valuable information on factors that influence raven and raptor numbers before and after energy development throughout the study area. Fall and winter location. During the fall and winter months (September – February), flights will be conducted every 3-4 weeks to determine location and survivorship. Attempts will be made to locate each individual radio-marked sage-grouse and determine its status (alive or dead). These approaches are subject to change based on improved data collection techniques and improved technologies.

## Project Treatments and Actions

### **Treatment Name:** South Railroad - Pinion Range

**Action:** Deploy GPS/VHF collars on sage grouse

**Approach Narrative:** See attached and project rationale.

**Planned Start:** 07/2022

**Action:** Collect, analyze, or model sage grouse population or habitat use data

**Approach Narrative:** See attached and project rationale.

**Planned Start:** 07/2022

**Action:** Monitor sage grouse leks or populations

**Approach Narrative:** See attached and project rationale.

**Planned Start:** 07/2022

### **Treatment Name:** Goldrush - Cortez Range

**Action:** Collect, analyze, or model sage grouse population or habitat use data

**Approach Narrative:** See attached and project rationale.

**Planned Start:** 07/2022

**Action:** Deploy GPS/VHF collars on sage grouse

**Approach Narrative:** See attached and project rationale.

**Planned Start:** 07/2022

**Action:** Monitor sage grouse leks or populations

**Approach Narrative:** See attached and project rationale.

**Planned Start:** 07/2022

## Project Monitoring

### **Monitoring Plan:**

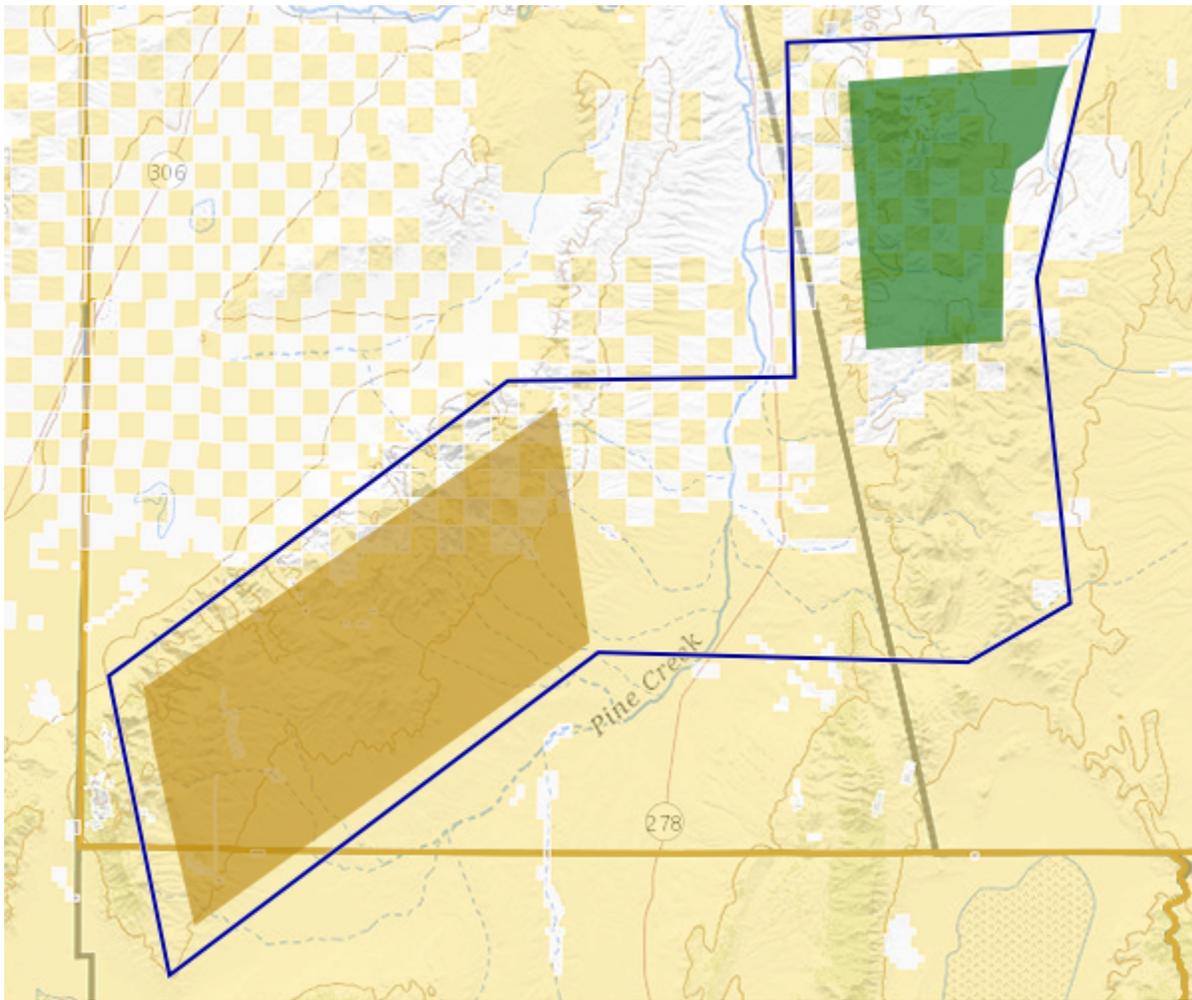
This project is a monitoring plan for sage-grouse and habitat selection.

## Project Funding and Budget

Budget Item	NDOW Upland Game Stamp 2023	USFWS Grant - Sage Grouse Conservation 2023
<b>Equipment/Vehicle Rental</b>		
Vehicle Rental	\$11000	\$33000
VHF Transmitters	\$3450	\$10350
<b>In-Kind Services</b>		
USGS Wildlife Biologist (Term, 0.2 FTE)		\$19700
USGS Research Wildlife Biologist (Permanent, 0.4 FTE)		\$25668
<b>Other</b>		
Field Housing	\$500	\$1500
Trapping Supplies	\$800	\$2400
ATV	\$1000	\$3000
ATV Fuel and Maintenance	\$500	\$1500
<b>Personnel</b>		
GBBO Technicians/USGS FTE	\$30250	\$90750

**Budget Narrative:**

The upland game bird stamp funding would provide match funding for the Nevada Sage-grouse Conservation Program Grant, which will largely fund approximately 75% of this project. The funds will be used to work cooperatively with the Great Basin Bird Observatory and the U.S. Geological Survey to conduct the monitoring and data analyses and subsequent publication material to present results and findings.



**Boundaries**

- County Boundary   ● USFS Office Boundaries   ● BLM Office Boundaries   ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs   ● Bureau of Land Management   ● Bureau of Reclamation
- Department of Defense   ● Department of Energy   ● Fish and Wildlife Service   ● US Forest Service
- National Park Service   ● Nevada State Lands   ● Nevada Park Service   ● Private   ● Other

**Project Geometry**

- Project Boundary   ● Treatment Area: South Railroad - Pinion Range
- Treatment Area: Goldrush - Cortez Range



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** Western Complex WMAs Habitat Improvements

**Project ID:** 751

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Isaac Metcalf Nevada Department of Wildlife

**Phone Number:** (775) 463-2741

**Email:** imetcalf@ndow.org

## Project Partners

Name	Agency	Role
No results		

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** yes

**Project Schedule:** Planting of wheat and peas will occur in the fall of 2022 in several food plots. Spring of 2023 planting of upland seed mix for doves, quail, and turkey in various food plots through out the Western Complex WMA'S. June of 20203 moist soil units that have been leveled or have had active emergent vegetation management will be planted with a wetland seed mix.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

**Location Narrative:**

Mason Valley Wildlife Management Area Carson Lake Wildlife Management Area Scripps Wildlife Management Area Alkali Lake Wildlife Management Area Fernley Wildlife Management Area Humboldt Wildlife Management Area

**NDOW Region:** Western

**NDOW Management Units:** 043 , 181 , 195 , 203

**Nevada Sage Grouse Population Management Unit:** Project not within a sage-grouse PMU

**County:** Churchill , Lyon , Pershing , Washoe

## Land Status

Land Status	Acres	Percent of Project
Bureau of Reclamation	39033.8	38
Nevada State	19721.1	19.2
Private	11116.1	10.8

**Bureau of Land Management Office:** Carson City District - Sierra Front Field Office , Carson City District - Stillwater Field Office , Winnemucca District - Humboldt River Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

## Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT IMPROVEMENT or MANAGEMENT: Management of Wildlife Management Areas (WMA)

### Project Objectives:

- To use food plots or plantings in managed wetland and/or moist-soil habitats to increased production of preferred waterfowl food or cover.
- To use food plots on actively managed upland habitats to increase production of preferred wildlife food or cover.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** High-elevation sagebrush dominated shrubland , Lakes and reservoirs , Linear riparian: perennial and ephemeral rivers and streams , Low-elevation sagebrush dominated shrubland , Mixed desert scrub , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Pinyon-juniper woodland (not encroachment) , Salt desert shrub , Upper montane coniferous forest and woodland

**Priority Resource Impacted:** Upland Game , Waterfowl

**Priority Species Impacted:** Dabbling duck species , Diving duck species , Geese , Valley quail

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Not Started

### Project Rationale:

Western Complex Wildlife Management Areas (WMAs) Habitat Improvements is to enhance forage and cover for waterfowl, shore birds, and upland birds on Nevada's Western Complex WMA's. Planting is part of restoration efforts by WMA staff following disturbances such as disking and prescribed burns. Annual vegetation control is identified in the Western Complex WMAs Conceptual Management Plan's. Wildlife habitats that are in good ecological condition, capable of supporting a diverse array of wildlife species. Habitat is the key to the success of all wildlife populations. Effective habitat is an integral function of the Department of Wildlife. NDOW will preserve and protect quality habitat and enhance deficient habitats. Maintain, protect and enhance wildlife habitats on WMAs by applying good science and best management practices through implementation of Comprehensive Management Plans on all WMA's that make up the Western Complex Wetlands in Nevada.

## Project Treatments and Actions

**Treatment Name:** food plot

**Acres:** 102589.069300806

**Action:** Plant upland or dry-land food plot

**Approach Narrative:** Planting of cover and forage vegetation will occur throughout the year. Water availability seed availability will drive where planting will take place and what will be planted.

**Planned Start:** 07/2023

**Action:** Plant or manage cover plots

**Approach Narrative:** Planting of cover and forage vegetation will occur throughout the year. Water availability seed availability will drive where planting will take place and what will be planted.

**Planned Start:** 07/2023

**Action:** Plant wetland or moist-soil food plot

**Approach Narrative:** Planting of cover and forage vegetation will occur throughout the year. Water availability seed availability will drive where planting will take place and what will be planted.

**Planned Start:** 07/2023

## Project Monitoring

**Monitoring Plan:**

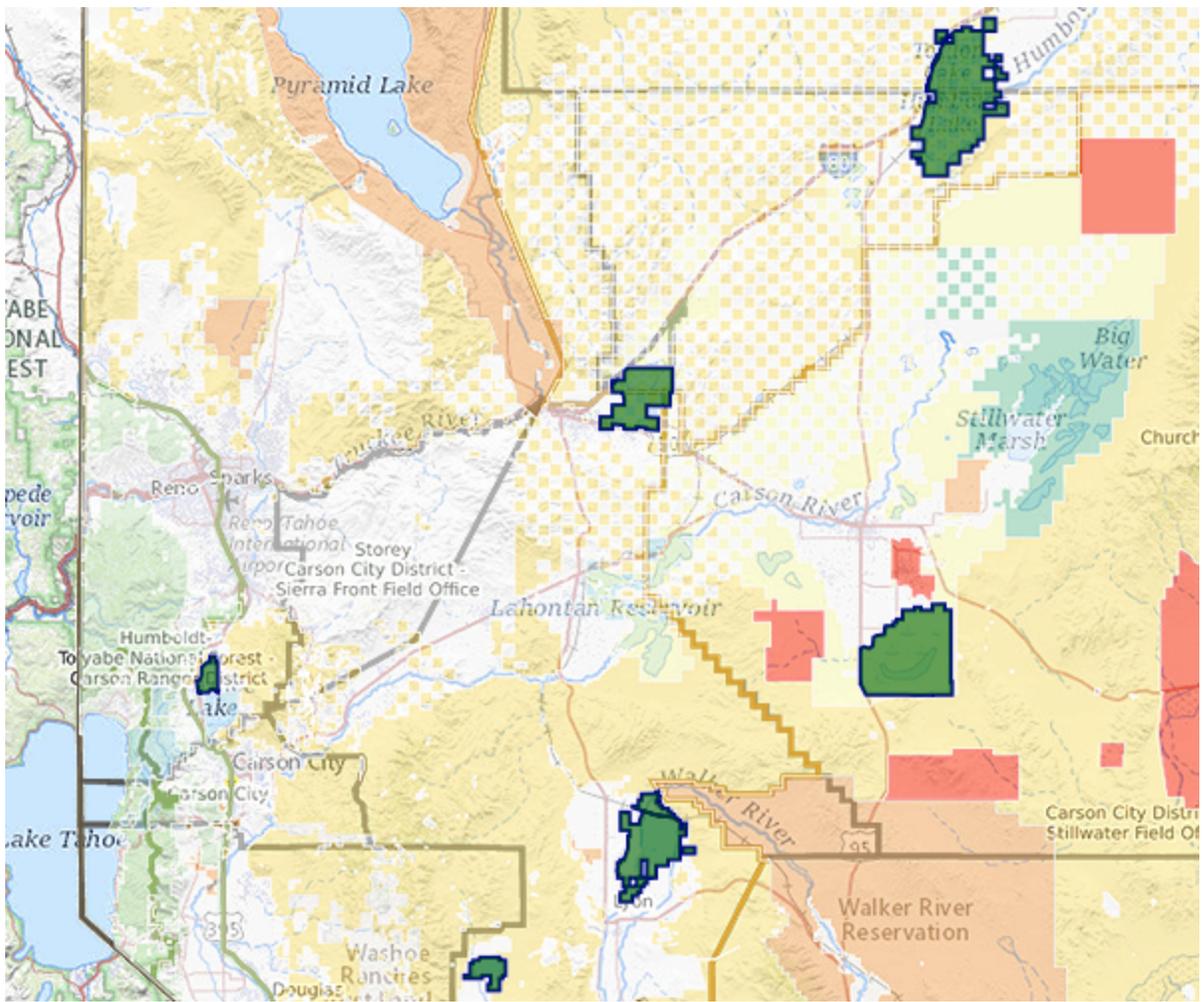
Bag check stations and survey cards will be used to collect data on hunter harvest and non-consumptive use. Surveys will be used to monitor waterfowl and shore bird use in the moist soil units.

## Project Funding and Budget

Budget Item	NDOW Duck Stamp 2023	NDOW Upland Game Stamp 2023
<b>Materials Purchase</b>		
wetland seed	\$15000	
upland seed		\$10000

**Budget Narrative:**

Wetland seed and seed mixes will be purchased along with upland seed for cover and food plots.



**Boundaries**

- County Boundary    ● USFS Office Boundaries    ● BLM Office Boundaries    ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs    ● Bureau of Land Management    ● Bureau of Reclamation
- Department of Defense    ● Department of Energy    ● Fish and Wildlife Service    ● US Forest Service
- National Park Service    ● Nevada State Lands    ● Nevada Park Service    ● Private    ● Other

**Project Geometry**

- Project Boundary    ● Treatment Area: food plot



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** Western Complex WMA Water Control Repair

**Project ID:** 764

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Isaac Metcalf Nevada Department of Wildlife

**Phone Number:** (775) 463-2741

**Email:** imetcalf@ndow.org

## Project Partners

Name	Agency	Role
No results		

## Project Schedule

**Project Start Date:** 07/01/2022

**State Fiscal Year:**  
2023

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** no

**State Fiscal Year:**  
2023

**Project Schedule:** Structures and Culverts will be installed as environmental factors that allow throughout FY23.

## Project Location and Land Status

**Location Narrative:**

Mason Valley Wildlife Management Area Carson Lake Wildlife Management Area Scripps Wildlife Management Area Alkali Lake Wildlife Management Area Fernley Wildlife Management Area Humboldt Wildlife Management Area

**NDOW Region:** Western

**NDOW Management Units:** 203 , 181 , 043 , 195

**Nevada Sage Grouse Population Management Unit:** Project not within a sage-grouse PMU

**County:** Washoe , Pershing , Churchill , Lyon

## Land Status

Land Status	Acres	Percent of Project
Bureau of Reclamation	39033.8	38
Nevada State	19721.1	19.2
Private	11116.1	10.8

**Bureau of Land Management Office:** Carson City District - Stillwater Field Office , Carson City District - Sierra Front Field Office , Winnemucca District - Humboldt River Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

## Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT IMPROVEMENT or MANAGEMENT: Install, maintain, or remove artificial habitat structures

### Project Objectives:

- To measurably increase wildlife populations, wildlife use, or habitat for the benefit of public use and hunter success.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** High-elevation sagebrush dominated shrubland , Lakes and reservoirs , Linear riparian: perennial and ephemeral rivers and streams , Low-elevation sagebrush dominated shrubland , Mixed desert scrub , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Pinyon-juniper woodland (not encroachment) , Salt desert shrub , Upper montane coniferous forest and woodland

**Priority Resource Impacted:** Upland Game , Waterfowl

**Priority Species Impacted:** Dabbling duck species , Diving duck species , Geese , Rio Grande turkey , Tundra Swan , Valley quail

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Not Started

### Project Rationale:

Culverts and water control structures that are rusted through and no longer function as intended will be replaced. Replacing the structures will reduce water losses and ditch bank erosion. Improving water deliveries will enhance wetlands and uplands for waterfowl, shorebirds, water birds, along with upland avian species such as quail, doves, and turkey's. Annual habitat maintenance and enhancement is identified in all of the current WMA Conceptual Management Plans. Wildlife habitats that are in good ecological condition, capable of supporting a diverse array of wildlife species. Goal: Habitat is the key to the success of all wildlife populations. Effective habitat is an integral function of the Department of Wildlife. NDOW will preserve and protect quality habitat and enhance deficient habitats. Maintain, protect and enhance wildlife habitats on wildlife management areas (WMA's) by applying good science and best management practices through implementation of Comprehensive Management Plans on all WMA's (Comprehensive Strategic Plan). Achieve an overall goal of no net loss of wetland area or function and the long-term goal to enhance and increase wetland quantity and quality within the WMA (Wetland Conservation Plan).

## Project Treatments and Actions

**Treatment Name:** Water Control Structure/ Culvert

**Acres:** 102589.069300806

**Action:** Other - please specify

**Approach Narrative:** As conditions allow throughout FY 23 Replacement of structures that are in disrepair will be replaced, protected with rip wrap and secured with base material.

**Planned Start:** 01/2022

## Project Monitoring

**Monitoring Plan:**

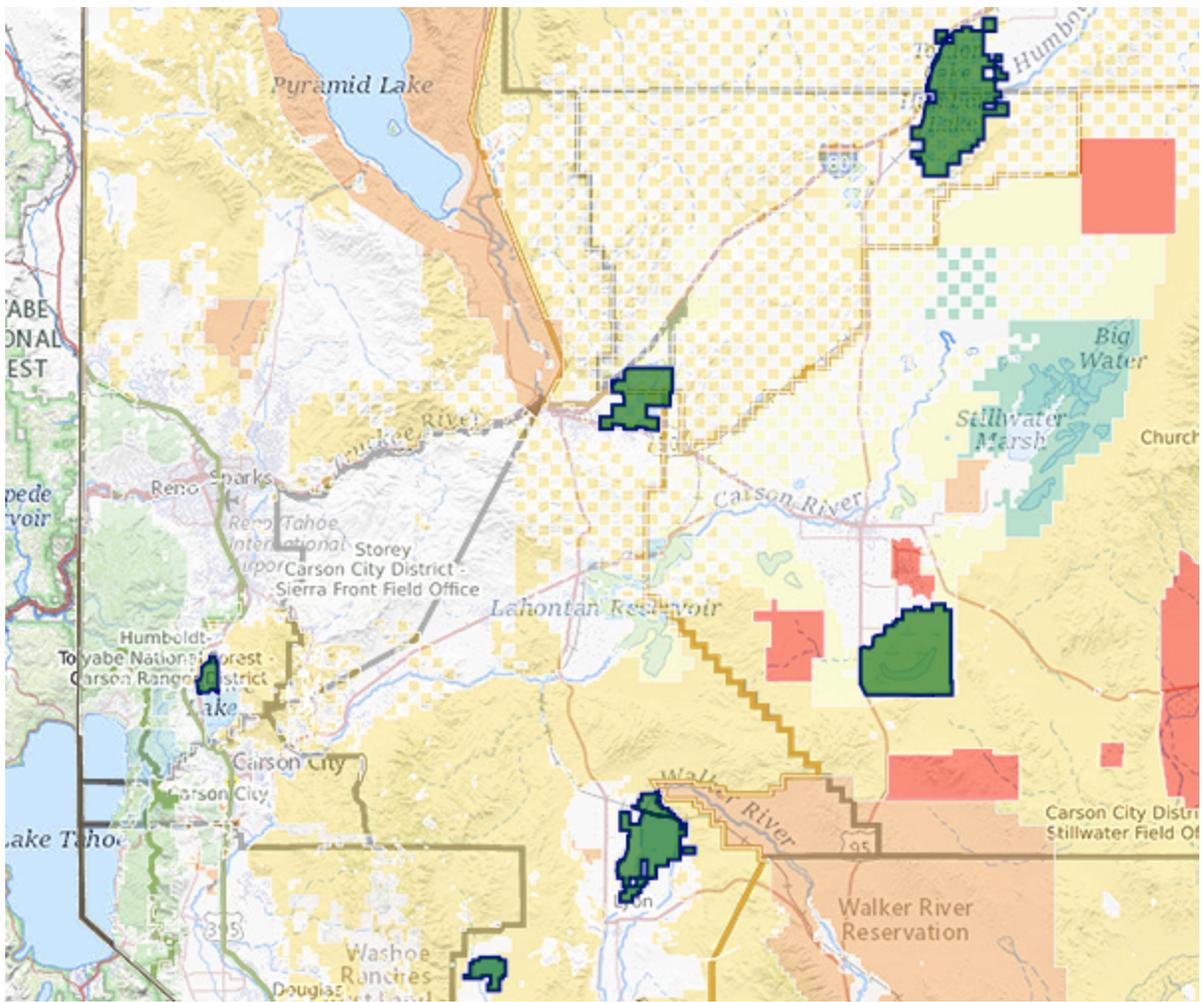
Visual inspections of structures will occur often during irrigation season. Food plots will be monitored and checked for sufficient vegetative growth and upland bird use.

## Project Funding and Budget

Budget Item	NDOW Duck Stamp 2023	NDOW Upland Game Stamp 2023
<b>Materials Purchase</b>		
double track weirs/ culvert	\$10000	\$15000
ripwrap and base material	\$5000	

**Budget Narrative:**

Work will be conducted by NDOW Wildlife Management Staff



**Boundaries**

- County Boundary    ● USFS Office Boundaries    ● BLM Office Boundaries    ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs    ● Bureau of Land Management    ● Bureau of Reclamation
- Department of Defense    ● Department of Energy    ● Fish and Wildlife Service    ● US Forest Service
- National Park Service    ● Nevada State Lands    ● Nevada Park Service    ● Private    ● Other

**Project Geometry**

- Project Boundary    ● Treatment Area: Water Control Structure/ Culvert



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY 23 Rangeland Restoration for Greater Sage-Grouse

**Project ID:** 745

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Tori Cernoch Nevada Department of Wildlife

**Phone Number:** (775) 688-1444

**Email:** victoria.cernoch@ndow.org

## Project Partners

Name	Agency	Role
Charlie Clements	Agricultural Research Service	Agency Cooperator
Katie Andrie	Nevada Department of Wildlife	Agency Cooperator

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2027

**Multi-year Project:** yes

**Project Schedule:** Spring 2022 – NDOW employees will conduct project planning and coordination with the private landowner and Agricultural Research Service (ARS). Summer 2022 – NDOW Habitat Division will work with ARS to secure equipment operator time. Fall 2022 – Contractor conducts Lawson work and broadcast seeding. NDOW employees conduct project management and inspection as necessary. Summer 2023, 2024, 2027 – ARS completes vegetation monitoring and project reporting.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2027

## Project Location and Land Status

**Location Narrative:**

Northern Washoe County. Private lands adjacent to Highway 34 at the Lost Creek Road junction and further north in Antelope Flat

**NDOW Region:** Western

**NDOW Management Units:** 012 , 013

**Nevada Sage Grouse Population Management Unit:** Massacre

**County:** Washoe

## Land Status

Land Status	Acres	Percent of Project
Bureau of Land Management	2.7	1.7
Private	156.6	98.3

**Bureau of Land Management Office:** Northern California District - Applegate Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

## Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT RESTORATION and REHABILITATION: Other habitat management (non-WMA land)

### Project Objectives:

- To remove, thin, or physically disturb dead or decadent shrubs such that increase growth is promoted.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** Low-elevation sagebrush dominated shrubland , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Salt desert shrub

**Priority Resource Impacted:** Big Game , Diversity/Non-game , Upland Game

**Priority Species Impacted:** Greater sage-grouse , Mule deer , Pygmy rabbit

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** yes

**Project Clearance or Authorization Status:** Not Applicable

### Project Rationale:

Sagebrush steppe habitat in northwestern Nevada is currently in poor condition. Perennial grass cover is low, which makes the plant community vulnerable to invasion by cheatgrass, and there is little cover by forbs. The sagebrush appears to be aging and in a decadent state; this is a concern given that this area of Nevada is such an important resource for sage-grouse. These poor range conditions could result in cheatgrass invasion in the event of a fire. Charlie Clements at the Agricultural Research Service (ARS) has been experimenting with the use of a Lawson Soil Aerator for rangeland restoration projects since 2008. These projects typically focus on treatment of decadent brush communities, with the goal of increasing cover by perennial bunchgrasses and forbs while also reinvigorating brush stands. ARS has completed a series of Lawson test plots over recent years and have generally seen increases in cover by desirable herbaceous species, increased plant diversity, and rejuvenated brush stands. Each of these aspects leads to greatly improved wildlife habitat. The purpose of this project is to complete 180 acres of Lawson restoration plots working in partnership with ARS. In addition to improving wildlife habitat, the goal is to demonstrate the efficacy of a project like this. By creating demonstration plots, NDOW and ARS may be able to improve additional acreage into the future, by partnering with the Bureau of Land Management (BLM).

## Project Treatments and Actions

**Treatment Name:** Rangeland Restoration

**Action:** Other - please specify

**Approach Narrative:** Rangeland treatment of decadent sage with Lawson aerator to improve understory

condition  
**Planned Start:** 07/2022

## Project Monitoring

### Monitoring Plan:

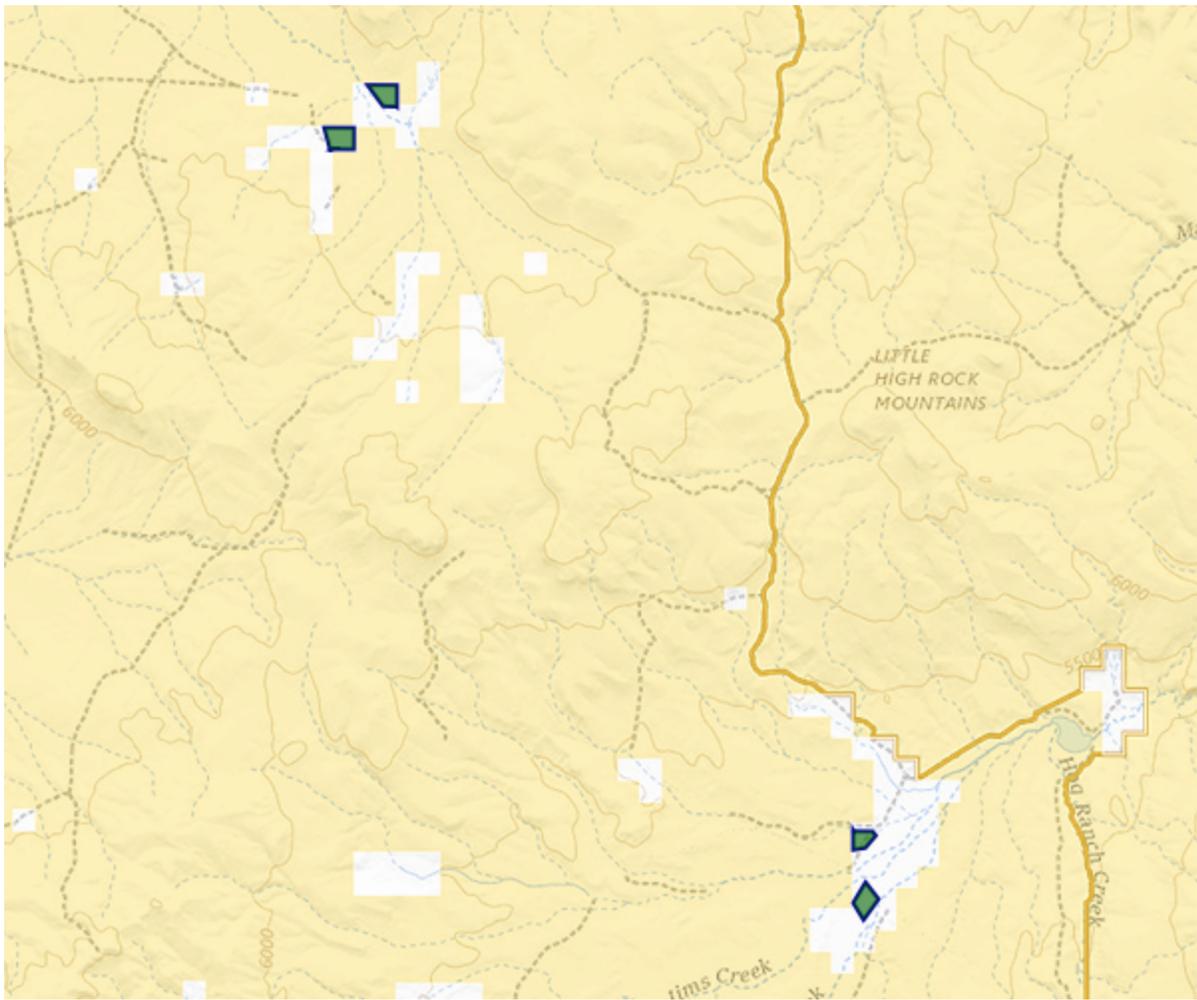
In addition to NDOW's before and after photo monitoring, as well as project inspection during treatment in 2022, the ARS will conduct vegetation monitoring in 2023, 2024, and 2027. These data will be used to quantitatively determine the outcomes of the projects and interpret treatment effectiveness.

## Project Funding and Budget

Budget Item	NDOW Habitat Conservation Fee 2023	NDOW Upland Game Stamp 2023
<b>Contracts</b>		
On-site tractor work	\$6000	\$6000
ARS Travel	\$4000	\$4000
<b>Materials Purchase</b>		
Seed	\$10000	\$10000

### Budget Narrative:

A total of \$40,000 is requested for this project, split equally between Habitat Conservation Fee and Upland Game Stamp (\$20,000 each). Requested funding constitutes contractual costs for equipment hauling and operation, as well as travel for on-site monitoring by ARS. Materials funds requested would go toward seed. All funds requested represent on-the-ground work directly related to habitat restoration and monitoring. Project costs were estimated based upon previous ARS Lawson projects across the state of Nevada. ARS is able to provide \$6,000 of match for this project. This match will take the form of donated equipment time for the ARS-owned Lawson Soil Aerator.



**Boundaries**

- County Boundary    ● USFS Office Boundaries    ● BLM Office Boundaries    ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs    ○ Bureau of Land Management    ○ Bureau of Reclamation
- Department of Defense    ● Department of Energy    ● Fish and Wildlife Service    ● US Forest Service
- National Park Service    ○ Nevada State Lands    ○ Nevada Park Service    ○ Private    ○ Other

**Project Geometry**

- Project Boundary    ● Treatment Area: Rangeland Restoration



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Big Lake PJ Removal-Cleanup

**Project ID:** 776

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Tori Cernoch Nevada Department of Wildlife

**Phone Number:** (775) 688-1444

**Email:** victoria.cernoch@ndow.org

## Project Partners

Name	Agency	Role
Jasmine Kleiber	Nevada Department of Wildlife	Agency Cooperator
Ed Ryan	Smith Valley Conservation District	Agency Cooperator

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** no

**Project Schedule:** Treatment areas are already delineated; areas were missed during previous PJ removal work. This project is a clean-up effort. NDOW employees will coordinate with the BLM as needed regarding any additional NEPA clearance. Upon funding, NDOW employees will coordinate with the Smith Valley Conservation District (SVCD) as necessary to organize work. PJ removal work will be conducted by SVCD during 2022/2023, as weather allows. During and after project work, NDOW employees will conduct project inspection.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

**Location Narrative:**

Pine Nut Mountains in western Nevada.

**NDOW Region:** Western

**NDOW Management Units:** 291

**Nevada Sage Grouse Population Management Unit:** Pine Nut

County: Lyon

## Land Status

Land Status	Acres	Percent of Project
Bureau of Land Management	8	100

**Bureau of Land Management Office:** Carson City District - Sierra Front Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

## Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT RESTORATION and REHABILITATION: Conifer removal

### Project Objectives:

- To remove pinyon and juniper trees as a restorative measure to reduce expansion, restore degraded sagebrush habitat, increase hydrologic function, improve forage and cover for wildlife, and/or increase connectivity of sagebrush habitat.
- To remove pinyon and juniper trees as a preventative measure against uncharacteristic wildfire and prevent loss of positive ecological conditions.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** Pinyon-juniper woodland (not encroachment) , High-elevation sagebrush dominated shrubland , Low-elevation sagebrush dominated shrubland , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Upper montane coniferous forest and woodland

**Priority Resource Impacted:** Big Game , Upland Game

**Priority Species Impacted:** Greater sage-grouse , Mule deer

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** yes

**Project Clearance or Authorization Status:** In Progress

### Project Rationale:

This project will remove Phase I and Phase II pinyon and juniper stands within the Pine Nut mountains in the Bi-State area. This area is identified as core habitat for Bi-State sage-grouse and has had numerous vegetation treatments completed previously by NRCS, NDOW, BLM, and USFS to improve habitat conditions and movement for sage-grouse in the area. Restoring habitat for sage grouse also helps many other sagebrush-dependent species. More than 350 species depend on sagebrush habitat and many species have suffered population declines due to environmental factors including conifer encroachment. The project reflects ongoing cooperative efforts with state and federal agencies to develop and implement landscape-level conservation for the Bi-State sage-grouse. The purpose of this project is to restore and maintain sagebrush habitats by improving habitat for bi-state sage-grouse. The focus of this project is the complete removal of pinyon-juniper trees in sagebrush areas in order to create additional sage-grouse habitat and movement corridors. This project area was previously treated at the scale of 1,750 acres in areas where sage-grouse have been identified as present by telemetry studies. This project is an effort to clean-up a small portion (9 acres) that was not completed during the previous treatment. This project has been coordinated with BLM and NRCS, and will be completed in close collaboration with both agencies. NRCS has invested over \$870,000 to-date on Bi-State sage-grouse projects in the Pine Nut mountain range, and completed the tree density surveys in 2017 for this project.

## Project Treatments and Actions

**Treatment Name:** Big Lake PJ Cleanup

**Acres:** 8.02110436405519

**Action:** Phase 1-2 Hand Thinning or Lop-Scatter

**Approach Narrative:** SVCD will complete PJ removal of Phase I/Phase II patches adjacent to the original treatment area. Work will begin upon project funding and be completed by June 30, 2023.

**Planned Start:** 07/2022

## Project Monitoring

**Monitoring Plan:**

Post-treatment tree/conifer monitoring will occur through photo documentation, understory plant inventories and pre- and post-treatment mapping.

## Project Funding and Budget

Budget Item	NDOW Upland Game Stamp 2023
<b>Contracts</b>	
SVCD project implementation	\$5000

**Budget Narrative:**

Project work will be completed by Smith Valley Conservation District via an existing Interlocal Agreement with the Nevada Department of Wildlife. Funds requested will compose SVCD employee time managing and working on the project, operating necessities such as chainsaws, and travel necessary to reach the site. Smith Valley Conservation District already has a strong familiarity with the project site and have effectively completed projects for NDOW in the past via task orders under Interlocal Agreements.



**Boundaries**

- County Boundary   ● USFS Office Boundaries   ● BLM Office Boundaries   ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs   ○ Bureau of Land Management   ○ Bureau of Reclamation
- Department of Defense   ● Department of Energy   ● Fish and Wildlife Service   ● US Forest Service
- National Park Service   ○ Nevada State Lands   ○ Nevada Park Service   ○ Private   ○ Other

**Project Geometry**

- Project Boundary   ● Treatment Area: Big Lake PJ Cleanup



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Overton WMA Food Plots

**Project ID:** 740

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Bennie Vann Nevada Department of Wildlife

**Phone Number:** (702) 397-2142

**Email:** bvann@ndow.org

### Project Partners

Name	Agency	Role
No results		

### Project Schedule

**Project Start Date:** 07/11/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** yes

**Project Schedule:** The food plot cycle begins in early August with disking, leveling, seed drilled, fertilizer applied and irrigated in ponds and moist soil unites with Japanese Millet and Sorghum. These food plots will then be flooded in late September/ early October as the waterfowl begin arriving for the fall and winter. In March/April wild sunflowers and alkali bulrush will be planted in selected areas. These areas will be irrigated as needed to produce food for late summer. Again in June selected areas will be disking, leveled, fertilized, planted with corn and irrigated. These areas will be flooded in the fall for wintering migratory birds. Noxious/evasive weeds and undesired vegetation will be sprayed throughout the growing season where food plots are planted as needed.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

### Project Location and Land Status

**Location Narrative:**

Overton Wildlife Management Area

**NDOW Region:** Southern

**NDOW Management Units:** 267

**Nevada Sage Grouse Population Management Unit:** Project not within a sage-grouse PMU

**County:** Clark

## Land Status

Land Status	Acres	Percent of Project
National Park Service	1631.2	99.7

**Bureau of Land Management Office:** Southern Nevada District - Las Vegas Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

# Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT IMPROVEMENT or MANAGEMENT: Management of Wildlife Management Areas (WMA)

## Project Objectives:

- To measurably increase wildlife populations, wildlife use, or habitat for the benefit of public use and hunter success.
- To use water management or physical alterations in managed wetland and/or moist-soil habitats to increase production of preferred waterfowl food or cover.
- To use food plots or plantings in managed wetland and/or moist-soil habitats to increased production of preferred waterfowl food or cover.
- To use food plots on actively managed upland habitats to increase production of preferred wildlife food or cover.

## NDOW Initiative Addressed:

- Wildlife Connectivity Plan (NDOW)

**Strategic Habitats Addressed:** Mojave warm desert , Mixed desert scrub , Linear riparian: perennial and ephemeral rivers and streams , Lakes and reservoirs , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra)

**Priority Resource Impacted:** Upland Game , Waterfowl

**Priority Species Impacted:** Dabbling duck species , Diving duck species , Gambel's quail , Geese , Rio Grande turkey

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Not Applicable

## Project Rationale:

This project consist of purchasing seed, fertilizer and herbicides to be used in planting approximately 100 acres of wildlife food plots on the Overton WMA. The purpose of this project is to enhance habitat for upland game birds, mourning dove, wild turkeys and waterfowl. Approximately 30 acres of moist soil unites, 57 acres of ponds and 23 acres of field food plots will be planted throughout the year with Japanese Millet, Sorghum, corn, wild sunflower and Alkali Bulrush at the appropriate times. These areas are intended to enhance feeding areas and nesting cover for waterfowl and upland game birds on the WMA and will also benefit non game species of wildlife. Noxious/invasive weeds and undesirable vegetation will be sprayed as needed to provide the best possible habitat for wildlife throughout the year in these areas using the purchased herbicides. This project is consistent with the goals and related strategy stated in the Overton WMA's Conceptual Management Plan. Desired Outcome: Wildlife habitats that are in good ecological condition, capable of supporting a diverse array of wildlife species. Goal: Habitat is the key to the success of all wildlife populations. Effective habitat is an integral function of the Department of Wildlife. NDOW will preserve and protect quality habitat and enhance deficient habitats. Objective: Maintain, protect and enhance wildlife habitats on wildlife management areas (WMA's) by applying good science and best management practices through implementation of Comprehensive Management Plans on all WMA's (Comprehensive Strategic Plan). Achieve an overall goal of no net loss of wetland area or function and the long-term goal to enhance and increase wetland quantity and quality within the WMA (Wetland Conservation Plan).

# Project Treatments and Actions

**Treatment Name:** A-Series Food Plot

**Acres:** 23.911097151046

**Action:** Herbicide application (truck or atv)

**Planned Start:** 08/2022

**Action:** Plant upland or dry-land food plot

**Planned Start:** 08/2022

**Action:** Plant wetland or moist-soil food plot

**Planned Start:** 08/2022

**Treatment Name:** B-Series Food Plot

**Acres:** 59.3425207011938

**Action:** Plant wetland or moist-soil food plot

**Planned Start:** 08/2022

**Action:** Herbicide application (truck or atv)

**Planned Start:** 08/2022

**Action:** Plant upland or dry-land food plot

**Planned Start:** 08/2022

**Treatment Name:** Dove Food Plot

**Acres:** 4.40895673162386

**Action:** Plant upland or dry-land food plot

**Planned Start:** 04/2023

**Action:** Herbicide application (truck or atv)

**Planned Start:** 04/2023

**Treatment Name:** Wilson/Pintail Food Plot

**Acres:** 130.89253069495

**Action:** Plant wetland or moist-soil food plot

**Planned Start:** 08/2022

**Action:** Herbicide application (truck or atv)

**Planned Start:** 08/2022

## Project Monitoring

**Monitoring Plan:**

The Overton WMA food plot program is an ongoing, yearly habitat management activity. The results of food plots planted in

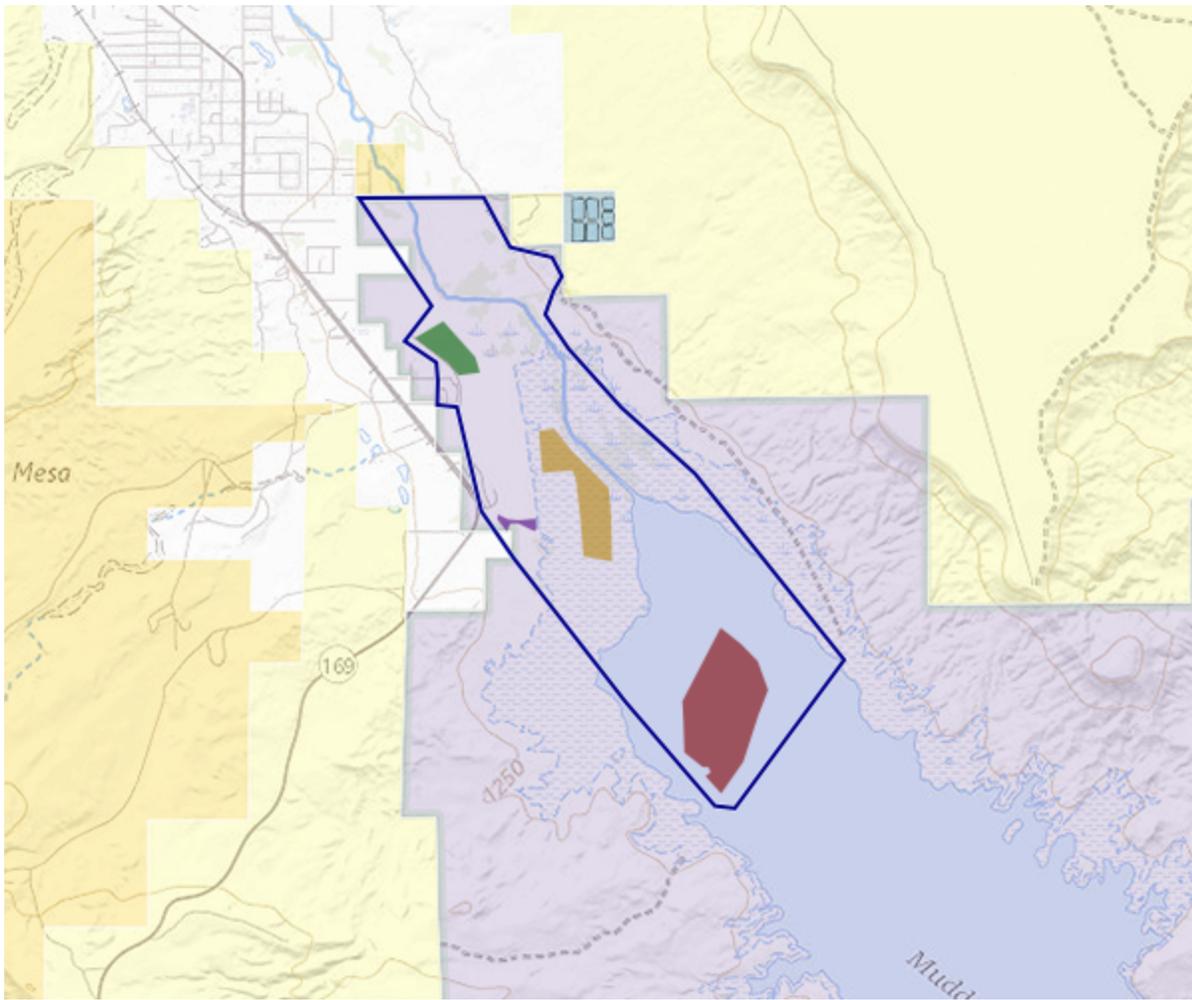
FY23 will be evaluated by WMA staff for their effectiveness and benefit to wildlife and sportsman. The results of this evaluation will determine what species will be planted in subsequent years.

## Project Funding and Budget

Budget Item	NDOW Upland Game Stamp 2023	
<b>Materials Purchase</b>		
Seed		\$3000
Fertilizer		\$4000
Herbicide		\$3000

**Budget Narrative:**

The funding would be used to purchase approximately 5 tons of nitrogen based fertilizer, 300 pounds of Japanese Millet seed, 300 pounds of dwarf corn seed, 400 pounds of sorghum, 100 pounds of wild sunflowers, and various herbicides. The funding would be split 60% NDOW Duck Stamp funding and 40% Upland Game Bird Stamp funding. The disking, leveling, planting and irrigation labor will be done using WMA staff.



**Boundaries**

- County Boundary   ● USFS Office Boundaries   ● BLM Office Boundaries   ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs   ● Bureau of Land Management   ● Bureau of Reclamation
- Department of Defense   ● Department of Energy   ● Fish and Wildlife Service   ● US Forest Service
- National Park Service   ● Nevada State Lands   ● Nevada Park Service   ● Private   ● Other

**Project Geometry**

- Project Boundary   ● Treatment Area: A-Series Food Plot   ● Treatment Area: B-Series Food Plot
- Treatment Area: Dove Food Plot   ● Treatment Area: Wilson/Pintail Food Plot



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Licking Ranch WMA Improvement Project

**Project ID:** 731

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Jeremy Lutz Nevada Department of Wildlife

**Phone Number:** (775) 635-5070

**Email:** jlutz@ndow.org

## Project Partners

Name	Agency	Role
No results		

## Project Schedule

**Project Start Date:** 07/01/2022

**State Fiscal Year:** 2023

**Projected Completion Date:** 06/30/2024

**State Fiscal Year:** 2024

**Multi-year Project:** yes

**Project Schedule:** Project work will start immediately following funding approval.

## Project Location and Land Status

**Location Narrative:**

Restoration and enhancement work will occur entirely on the Licking Ranch WMA.

**NDOW Region:** Eastern

**NDOW Management Units:** 152

**Nevada Sage Grouse Population Management Unit:** Project not within a sage-grouse PMU

**County:** Lander

**Land Status**

Land Status	Acres	Percent of Project
Private	1584.9	99.4

**Bureau of Land Management Office:** Elko District - Tuscarora Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

## Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT IMPROVEMENT or MANAGEMENT: Management of Wildlife Management Areas (WMA)

### Project Objectives:

- To measurably increase wildlife populations, wildlife use, or habitat for the benefit of public use and hunter success.
- To use water management or physical alterations in managed wetland and/or moist-soil habitats to increase production of preferred waterfowl food or cover.
- To use water management or physical alterations in managed wetland and/or moist-soil habitats to improve water management.
- To use food plots or plantings in managed wetland and/or moist-soil habitats to increased production of preferred waterfowl food or cover.
- To use food plots on actively managed agricultural habitats to increase production of preferred wildlife food or cover.
- To control noxious weeds with herbicide application.

### NDOW Initiative Addressed:

- Nevada Biodiversity Initiative (USFWS)
- Wildlife Connectivity Plan (NDOW)

**Strategic Habitats Addressed:** Salt desert shrub , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Low-elevation sagebrush dominated shrubland , Lakes and reservoirs

**Priority Resource Impacted:** Big Game , Diversity/Non-game , Upland Game , Waterfowl

**Priority Species Impacted:** Dabbling duck species , Diving duck species , Elk , Geese , Migratory songbirds (multiple species) , Mule deer , Pronghorn antelope , Raptor species , Rio Grande turkey , Shorebirds , Tundra Swan , Valley quail

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Not Applicable

### Project Rationale:

In order to address and manage yearly maintenance with noxious weeds, maintenance of existing infrastructure (fences, buildings, bridges, etc.), and maintaining and enhancing crucial riparian and meadow habitats and corridors, we are requesting funding to perform a variety of habitat and maintenance restoration efforts on the newly acquired Licking Ranch WMA. The primary purpose for the funding would be to restore and improve existing wildlife habitat and perform infrastructure maintenance and replacement on the Licking Ranch WMA. These projects include ground based or aerial application of herbicide, drill or aerial seeding, tree and shrub plantings, and riparian and meadow habitat restoration and enhancement practices including meadow dragging, cutting and haying. In some instances, specialized equipment will be necessary to rent or purchase in order to perform work with skid steers and associated attachments, tractors, etc. Infrastructure such as fences, gates, cattle guards, culverts and existing building upgrades to 3 pump houses, one solar well upgrade, the ranch shop, water delivery irrigation devices, and the 3 bridges are in need of repair or maintenance on the Licking Ranch WMA. These projects would help improve and maintain the intrinsic values of this property for wildlife, its associated habitat and to help promote, encourage and engage the involvement of our constituents to Nevada's wildlife on the Licking Ranch WMA. Awarded funds would be used to purchase herbicide, equipment, tools, seed, trees, shrubs, building materials, and/or contract labor to maintain and enhance the Licking Ranch WMA. Additional monies would be used to significantly bolster current capital improvement efforts including replacing and repairing large water diversion structures, fence and gate modification and replacement, infrastructure maintenance on shop, equipment facilities and 3 pump houses, maintenance and replacement of

electrical wiring systems on all breaker boxes associated with the ranch shop, 3 pump well houses, picnic area, and annual road maintenance and repairs as and where needed. These projects would help maintain and enhance habitat for all wildlife associated with the Humboldt River Floodplain including the 92 birds species that have been documented on the Licking Ranch WMA. Maintaining and enhancing the large, irrigated meadows and its associated willow lined river corridors creates a unique wetland type habitat for tens of thousands of migratory bird species as they migrate along the Pacific Flyway. These meadows, slews, canals and river corridors are all extremely important habitat for mule deer, elk and a variety of upland game birds including Rio Grande turkeys, California quail and pheasants.

## Project Treatments and Actions

### **Treatment Name:** Noxious Weed Treatment

**Action:** Create, modify, or maintain diversion canals, headgates, or water pipelines

**Approach Narrative:** Clean, repair and replace water diversion and water delivery structures annually to facilitate proper irrigation practices on ranch.

**Planned Start:** 07/2023

**Action:** Herbicide application (aerial)

**Approach Narrative:** Contract aerial and ground spray projects and administer project to enhance meadow and river bottom habitat for wildlife by reducing completion with noxious weeds.

**Planned Start:** 07/2023

**Action:** Plant or manage cover plots

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

**Action:** Complete or support WMA crop farming practices

**Approach Narrative:** Protect, manage and enhance meadow and riparian habitat on Licking Ranch WMA by irrigating, dragging, cutting and haying meadows.

**Planned Start:** 07/2023

**Action:** Plant upland or dry-land food plot

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

**Action:** Plant wetland or moist-soil food plot

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

### **Treatment Name:** Seeding area

**Action:** Plant upland or dry-land food plot

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

**Action:** Plant or manage cover plots

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

**Action:** Plant wetland or moist-soil food plot

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

**Action:** Complete or support WMA crop farming practices

**Approach Narrative:** Utilize appropriate seeding methodology, rates and timing to complete seeding.

**Planned Start:** 07/2023

# Project Monitoring

**Monitoring Plan:**

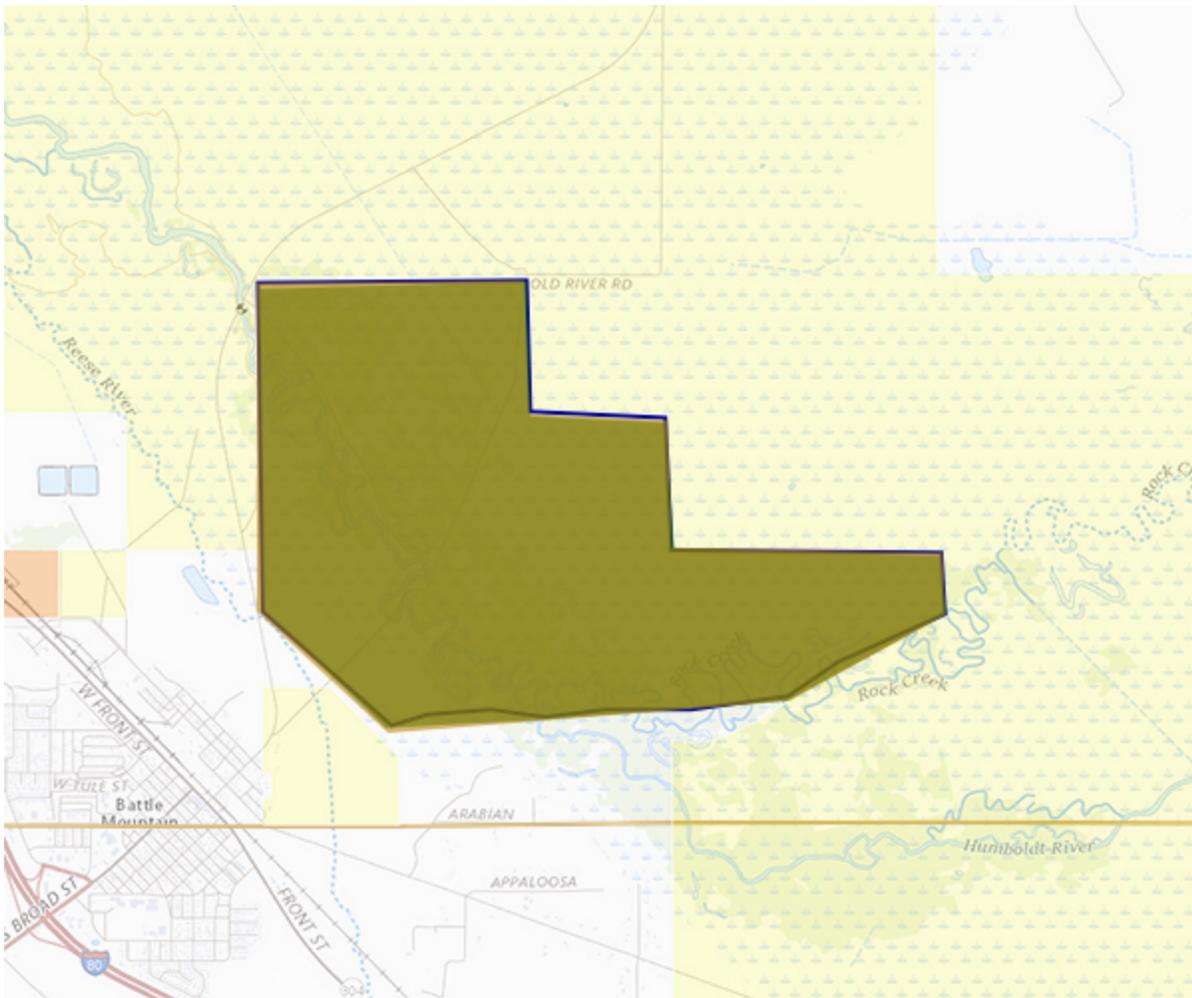
Monitoring plan consists of annual inspections on the Licking WMA that include initiating projects based on seasonal timelines that include infrastructure maintenance and repair needs, weed inventories and treatment, seasonal irrigation deliveries and meadow enhancement practices including dragging, cutting, and haying.

## Project Funding and Budget

Budget Item	NDOW Duck Stamp 2023	NDOW Habitat Conservation Fee 2023	NDOW Upland Game Stamp 2023
<b>Contracts</b>			
Contract labor for weed application, meadow enhancement and electrician		\$14500	\$10000
<b>Equipment/Vehicle Rental</b>			
Rental cost for tractors, skid steer attachments.		\$3500	\$2000
<b>Materials Purchase</b>			
Herbicide Cost			\$8000
Water Diversion Structure Replacement	\$12000		
Infrastructure Maintenance and Repair		\$22000	

**Budget Narrative:**

Awarded funds would be used to purchase herbicide, equipment, tools, seed, trees, shrubs, building materials, and/or contract labor to maintain and enhance the Licking Ranch WMA. Additional monies would be used to significantly bolster current capital improvement efforts including replacing and repairing one large water diversion structure, fence and gate modification and replacement, infrastructure maintenance on shop, equipment facilities and 3 pump houses, maintenance and replacement of electrical wiring systems on all breaker boxes associated with the ranch shop, 3 pump well houses, one solar well upgrade, picnic area, and annual road maintenance and repairs as and where needed. All contracts would be administered and inspected by project manager.



**Boundaries**

- County Boundary   ● USFS Office Boundaries   ● BLM Office Boundaries   ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs   ○ Bureau of Land Management   ○ Bureau of Reclamation
- Department of Defense   ● Department of Energy   ● Fish and Wildlife Service   ● US Forest Service
- National Park Service   ○ Nevada State Lands   ○ Nevada Park Service   ○ Private   ○ Other

**Project Geometry**

- Project Boundary   ● Treatment Area: Noxious Weed Treatment   ● Treatment Area: Seeding area



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Upland Game Translocation and Monitoring

**Project ID:** 748

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Shawn Espinosa Nevada Department of Wildlife

**Phone Number:** (775) 688-1523

**Email:** sespinosa@ndow.org

## Project Partners

Name	Agency	Role
No results		

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2023

**Multi-year Project:** yes

**Project Schedule:** Ruffed grouse capture efforts would commence in late summer or early fall of 2021 (August/September) if habitat conditions and bird numbers are deemed appropriate. This type of effort normally takes approximately 10-14 days to complete. However, this is highly dependent on habitat conditions and productivity of ruffed grouse populations from potential source stock areas. Merriam's turkey capture efforts normally begin in December or January of each year. Capture work would likely begin in December of 2021 or January of 2022 and releases would take place immediately after that. As in years past, two or three capture efforts and bird translocations are necessary to achieve the release complement objective of between 50 and 100 birds. Like Merriam's turkey, efforts to capture Rio Grande turkey would take place in December of 2021 or January of 2022, with subsequent translocations occurring after disease testing requirement have been met.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

**Location Narrative:**

Ruffed Grouse The Pine Forest Range, located in northwestern Humboldt County, is a priority for augmentation following the initial release conducted in 2014. Subsequent monitoring continues to document the presence of birds in low numbers;

however, an augmentation is recommended for this population to help achieve sustainability and expanded distribution. We hope to capture approximately 20 ruffed grouse from the Santa Rosa mountains and translocate them to this location; however, this depends on ruffed grouse population numbers in the Santa Rosa mountains. Merriam's Turkey The northern portion of the Snake Range located in Hunt Unit 114 in White Pine County is considered a priority release site for release of Merriam's turkeys for FY2021 and FY2022. Two release sites are being considered within this mountain range including Hendry's Creek on the eastern side of the range and Negro Creek on the western side. These are both extensive drainage systems with perennial water sources, associated springs and diverse habitats. Given the success of Merriam's turkeys in neighboring Hunt Unit 115 and similarity of habitat, Merriam's turkeys will likely do well in the northern Snake Range. Rio Grande Turkey With the recent acquisition of private parcels along the Walker River by the Walker Basin Conservancy and subsequent transfer to Nevada State Parks, some significant opportunities have arisen for the expansion of the Rio Grande turkey population along the Walker River system. Working in conjunction with Nevada State Parks, our objective is to release approximately 50-100 turkeys spread between two units of the Walker River Recreation Area including the Pitchfork and Rafter 7 Ranch Units. It is anticipated that this translocation will take place in January or February of 2022. Chukar and Gray Partridge Monitoring The majority of this work will be conducted by surveying established routes by vehicle or on foot and will also employ the use of trail cameras to help estimate brood sizes during the mid to late summer months. The majority of this work will occur in Churchill, Elko, Humboldt, Pershing and Washoe County. Trail camera work in Elko County will place particular emphasis on gray partridge populations to determine opportunities for a source stock to be able to augment or establish population in other areas of northern Nevada.

**NDOW Region:** Eastern , Western

**NDOW Management Units:** 155 , 114 , 184 , 202 , 032

**Nevada Sage Grouse Population Management Unit:** Desatoya , Spring/Snake Valley , Pine Forest , Bodie/Mount Grant , Three Bar

**County:** White Pine , Churchill , Lyon , Humboldt , Eureka

## Land Status

Land Status	Acres	Percent of Project
Forest Service	10591.6	23.7
Bureau of Land Management	31215.7	70
Private	2234.5	5

**Bureau of Land Management Office:** Ely District - Bristlecone Field Office , Carson City District - Stillwater Field Office , Carson City District - Sierra Front Field Office , Battle Mountain District - Mount Lewis Field Office , Winnemucca District - Humboldt River Field Office

**US Forest Service Ranger District:** Humboldt-Toiyabe National Forest - Ely Ranger District

**Special Land Designations:** DOI - BLM|Pine Forest Range|Designated Wilderness , USDA Forest Service|Mt. Moriah Wilderness|Designated Wilderness , DOI - BLM|Desatoya Mountains|Wilderness Study Area

# Project Summary and Justification

**Project Activity and Sub-activity:** POPULATION MANAGEMENT, MONITORING, and RESEARCH: Terrestrial Wildlife

## Project Objectives:

- To measurably increase wildlife populations, wildlife use, or habitat for the benefit of public use and hunter success.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** Aspen woodland , High-elevation sagebrush dominated shrubland , Lakes and reservoirs , Linear riparian: perennial and ephemeral rivers and streams , Low-elevation sagebrush dominated shrubland , Mixed desert scrub , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Other riparian: meadow, marsh, spring, seep, and lakeshore , Pinyon-juniper woodland (not encroachment) , Salt desert shrub , Upper montane coniferous forest and woodland

**Priority Resource Impacted:** Upland Game

**Priority Species Impacted:** Merriam's turkey , Rio Grande turkey , Ruffed grouse , Valley quail

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Complete

**Project Rationale:**

The overall goal of this project is to increase population redundancy and resiliency of certain upland game species, particularly ruffed grouse, wild turkey and potentially gray (Hungarian) partridge within suitable and appropriate habitats across Nevada's landscape. In addition, this project is proposed to assist with monitoring of existing upland gamebird populations to help determine the efficacy of previous translocations (particularly mountain quail restoration efforts), availability of source stock (gray partridge) and to help develop forecasts for the upcoming season. Intensive monitoring would likely be focused on chukar and gray partridge with the use of trail cameras placed at various spring sources during the mid-summer months. Since 2008, the Nevada Department of Wildlife has released approximately 1,200 mountain quail (Churchill, Humboldt, Lander, Washoe and White Pine Counties), 203 ruffed grouse (Elko, Humboldt, Lander and Nye Counties), 251 Rio Grande turkeys (Douglas, Lander and Lincoln Counties) and 246 Merriam's turkeys (Lander and Elko Counties). These translocations, and subsequent augmentations, are conducted to fulfill the objective of expanding certain upland game species distribution and abundance within Nevada as stated in the Nevada Upland Game Species Management Plan developed in 2008. These efforts have also led to increased sportsmen opportunity and have contributed to non-consumptive uses as well (e.g., wildlife watching and photography). The capture and translocation of either species is highly dependent on habitat conditions, both at the capture site and the proposed release site. If adequate habitat conditions are not experienced, it is likely that these efforts will be re-scheduled. Ruffed Grouse We propose to capture 20-30 ruffed grouse, likely from the Santa Rosa Range to augment a prior release in the Pine Forest Range of Humboldt County. If the existing population in the Santa Rosa Range is not capable of providing a reliable source stock, alternative sites could be selected such as the Merritt Mountain area of northern Elko County. A subset of captured and translocated birds (up to 10) may be radio-marked with VHF telemetry units to help determine habitat usage and survival rates. Fixed wing telemetry surveys will be conducted intermittently for the life of the individual or the units to monitor for survival and dispersal from the release site. Drumming counts will take place at specific locations during May and early June to document presence and density of birds. Merriam's Turkey Source stock of Merriam's turkeys was most recently obtained (January 2020) via the Idaho Department of Fish and Game working in conjunction with private landowners in southeastern Idaho. Additionally, Merriam's turkeys have also been made available to Nevada through the Colville Confederated Tribe located in eastern Washington. In this instance, capture work was conducted by the Colville Confederated Tribal personnel with partial transportation of birds to a "halfway point" in eastern Oregon. We hope to continue this relationship in 2021 and 2022. Monitoring activities will include aerial telemetry surveys of radio-marked birds within the northern Snake Range. In addition, intermittent ground follow-up monitoring will take place following flights, especially during the nesting season to determine nest location and habitat selection. Rio Grande Turkey We will coordinate with the Utah Division of Wildlife Resources to determine source stock availability for this species from portions of central and southern Utah. In the past, we have obtained several hundred birds from Utah for release into Lincoln County, which has been considered a success. We intend to release approximately 100 of these birds within the Walker River Recreation Area in January of 2022. There may also be an opportunity to capture birds from Paradise Valley in 2021 as the turkey population here has expanded recently and there are congregations of over 200 birds that have been reported in the community of Paradise Valley. Trap and translocation of up to 50 individuals may be necessary in 2021. Chukar and Gray Partridge Surveys We will deploy 20 camera stations at various springs and water sources where congregations of chukar and gray partridge are expected. This will be conducted to serve two purposes: 1) evaluate brood sizes for these species during the summer months to help develop forecasts and 2) evaluate population of gray partridge to determine whether they are of suitable size to serve as a source stock for translocations.

## Project Treatments and Actions

**Treatment Name:** Snake Range Turkey

**Action:** Trap and transplant small game species

**Approach Narrative:** See project details

**Planned Start:** 07/2022

**Action:** Deploy GPS/VHF collars on small game species

**Approach Narrative:** See project details

**Planned Start:** 07/2022

**Treatment Name:** Simpson Park Gray Partridge

**Action:** Trap and transplant small game species

**Approach Narrative:** See project details

**Planned Start:** 07/2022

**Treatment Name:** Pine Forest Ruffed Grouse

**Action:** Trap and transplant small game species

**Approach Narrative:** See project details

**Planned Start:** 07/2022

**Treatment Name:** Walker River Wild Turkey

**Acres:** 1259.71451873163

**Action:** Trap and transplant small game species

**Planned Start:** 07/2022

**Treatment Name:** Desatoya Gray Partridge

**Acres:** 11755.3044699127

**Action:** Trap and transplant small game species

**Planned Start:** 07/2022

## Project Monitoring

### Monitoring Plan:

Expanding the distribution of ruffed grouse populations addresses concerns of population decline and loss of redundancy (numbers of populations) across the range of the species. This provides assurances that populations will persist over the long-term and enable resiliency in case of stochastic events. Ultimately, if successful, the establishment of these populations also increases recreational opportunities for sportsmen and wildlife watchers. Likewise, expanding wild turkey populations in Nevada meets sportsman demand for this species. Only 166 turkey tags were issued for the spring 2020 hunt and the number of applicants far exceeds availability of tags. Providing sportsmen with alternative hunt areas to choose from and expanded opportunity would help alleviate the demand deficit. Turkey translocation monitoring will be conducted with the use of VHF transmitters placed on released hens to help determine monthly and annual survival and seasonal use areas. Flights will be conducted to locate birds throughout the life of the radio-marked bird or the transmitter.

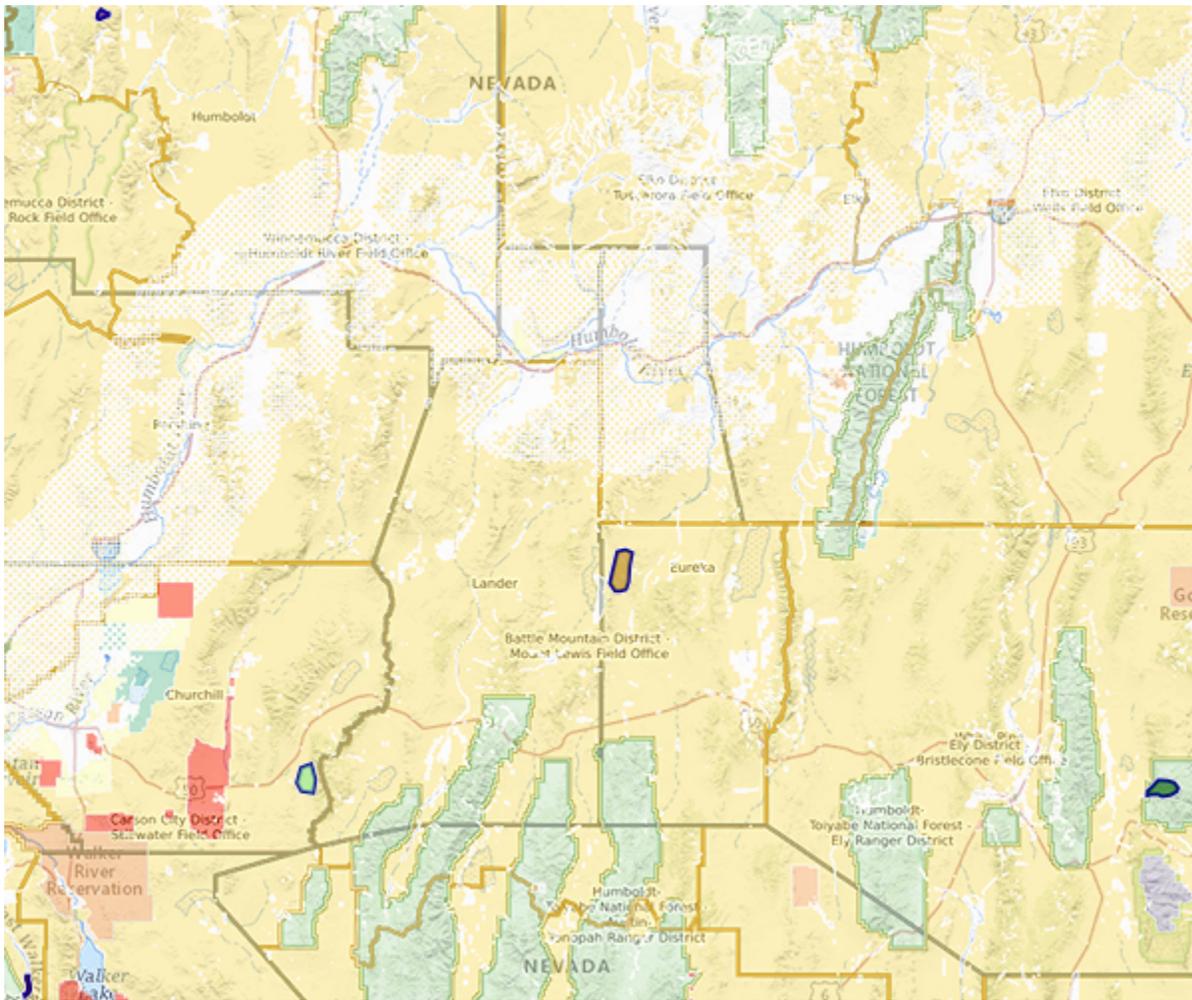
## Project Funding and Budget

Budget Item	NDOW Upland Game Stamp 2023	USFWS Grant - Statewide Game Management 2023
<b>Equipment Purchase</b>		
VHF Radio Transmitters (20 @ \$230/ea.)	\$4600	

Budget Item	NDOW Upland Game Stamp 2023	USFWS Grant - Statewide Game Management 2023
<b>Materials Purchase</b>		
Capture Materials	\$1000	\$1000
<b>Other</b>		
Telemetry Flights (20 hrs. @ \$350/hr.)	\$7000	
Disease Testing Kits and Lab Costs (for approx. 30 samples)	\$800	
<b>Personnel</b>		
NDOW Personnel Time		\$25416
<b>Travel</b>		
Per Diem		\$3584

**Budget Narrative:**

Budget will support materials and staff time for capture and monitoring.



**Boundaries**

- County Boundary
- USFS Office Boundaries
- BLM Office Boundaries
- NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- Department of Energy
- Fish and Wildlife Service
- US Forest Service
- National Park Service
- Nevada State Lands
- Nevada Park Service
- Private
- Other

**Project Geometry**

- Project Boundary
- Treatment Area: Snake Range Turkey
- Treatment Area: Simpson Park Gray Partridge
- Treatment Area: Pine Forest Ruffed Grouse
- Treatment Area: Walker River Wild Turkey
- Treatment Area: Desatoya Gray Partridge



## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Greater Sage-grouse Monitoring  
 Project Manager: Shawn Espinosa Phone: 775-688-1523 Email sespinosa@ndow.org  
 Project Monitor: Shawn Espinosa Start Date: 7/1/2022  
 Implementation Lead: Nevada Department of Wildlife End Date: 6/30/2023  
 Partners: Nevada Department of Wildlife, US Forest Service, Bureau of Land Management  
 Project Category: Wildlife Population Protection or Enhancement  
 Project Category: Wildlife Monitoring and Research  
 Project Actions: Aerial surveys, Ground surveys, Small game collaring  
 Priority Resource: Small game  
 Priority Species: Sage grouse  
 County Location: Statewide  
 General Location: Range of Greater sage-grouse in Nevada

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
NDOW Upland Game Stamp	\$29,370		
USFWS State Wildlife Grant	\$170,000		
<b>Project Totals:</b>	<b>\$179,370</b>		

### *Project Proposal*

#### *1. Brief Purpose and Goal of the Project*

This project supports various NDOW specific monitoring efforts throughout the range of Greater Sage-grouse in Nevada. Monitoring activities include ground surveys to conduct lek related work (e.g. counts, routes and searches) using seasonal technicians, fixed-wing aircraft outfitted with infrared telephoto capabilities, and fixed-wing telemetry (VHF) follow-up surveys. As of 2020, there were 1,991 known lek locations identified in the Nevada Statewide Sage-grouse Database (Nevada portion only), of which 633 were considered active (defined as 2 or more males observed during 2 years in a 5 year period), 273 were considered "pending active", meaning that an additional year of observing 2 or more males is necessary to be considered an active lek, 354 were considered "inactive" status, and 586 were considered "unknown" status leks. This volume of lek locations requires that some part-time seasonal, volunteer and

aerial resources are dedicated to support on the ground efforts.

## *2. Project Approach and Tasks*

### Lek Count Technicians

Assistance with lek counts, in the form of part-time technicians, allows us to achieve our objectives of surveying at least 40% of known lek locations throughout Nevada (n=796). This is a somewhat lofty objective considering the number of field biologists in each region and the availability of volunteers and federal agency personnel available to conduct lek survey work. The use of part time technicians dedicated solely to lek surveys alleviates some of the workload on agency field biologists at a time of the year when surveys for other species (e.g. big game animals) are taking place and big game quota recommendations are being made. We anticipate hiring 2 seasonal part time technicians to work approximately 6 weeks to assist with lek counts.

### Fixed Wing Infrared Surveys

This modern survey technique has proven to be effective over the last five years given advancements in the system and the use of sage-grouse lek habitat modeling using maximum entropy (MaxEnt) methods. These surveys contributed a great deal of data during 2020, as the pandemic severely limited monitoring efforts. The technique allows for documenting presence or absence of birds at known leks, numbers of males and females, and has been effective at detecting undiscovered lek locations without disturbing birds as the elevation of the aircraft is generally about 1,000 above ground level. This technology may also be utilized to survey areas for wintering sage-grouse. Very little comprehensive work has been conducted to document winter use areas and delineate this important seasonal habitat. We estimate approximately 35 hours of aerial fixed wing survey to be conducted during 2022.

### Aerial Telemetry Surveys

In addition to the lek survey work described above, this project will also cover fixed wing aerial telemetry surveys to follow-up on radio-marked grouse in several project areas. These flights will largely occur once each month from October through February in various study areas and roughly involve approximately 32 hours of work. These surveys not only provide locations of birds, but are also able to document mortality which is important for estimating monthly, seasonal and annual survival rates. Additionally, telemetry information obtained from sage-grouse throughout Nevada has been utilized to inform a statewide resource selection function model (RSF) and mapping product for the species.

## *3. Anticipated Beneficial Effects of the Project*

### Lek Count Technicians:

Assistance with lek counts, in the form of part-time technicians, allows us to achieve our objectives of surveying 40% of known lek locations throughout Nevada (n=796). This is a somewhat lofty objective considering the number of field biologists in each region, volunteers and federal agency personnel available to conduct lek survey work. Additionally, this alleviates some of the workload on agency field biologists at a time of the year when surveys for other species (e.g. big game animals) are taking place.

### Fixed Wing Infrared Lek Detection and Wintering Ground Survey:

Cooled infrared camera technology with a telephoto lens mounted on a fixed wing aircraft platform has the ability to detect the presence/absence of sage-grouse at leks without invoking disturbance. The technique allows observers to obtain counts of individuals at leks and potentially detect new lek locations. Accurate counts of numbers of birds at a lek can also be determined. This tool allows for efficient survey of multiple leks or suspected wintering grounds each morning.

### Fixed Wing Telemetry Surveys:

These surveys greatly increase the strength of our telemetry location dataset and can assist with the development of a resource selection function model being developed by the USGS. Additionally, beyond locating radio-marked sage-grouse, these surveys allow us to determine monthly survival and periods of elevated mortality which could help influence management decisions.

#### *4. Project Schedule*

Lek count work conducted via ground/vehicle surveys would take place during the spring breeding season which is typically defined as March 1 – May 15 of each year.

Fixed wing infrared work would be conducted during the winter or spring breeding season depending on the purpose of the survey.

Fixed wing telemetry surveys would be conducted throughout the fiscal year, with emphasis on locating radio-marked birds during late fall and winter periods on a monthly basis when research crews are out of service.

#### *5. Required Clearance Activities and Schedule (NEPA, other permits, authorizations)*

No NEPA compliance is necessary for this particular project.

#### *6. Monitoring Plan*

This is a monitoring project.

#### *7. Relationship to NDOW Plans, Policies, and Programs*

This project fits within the 1st Edition of the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (2004). The project also assists with objectives outlined in the Bi-State Action Plan (2012).



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** Key Pittman Wildlife Food Plots

**Project ID:** 743

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Andrew Coonen Nevada Department of Wildlife

**Phone Number:** (775) 725-3521

**Email:** acoonen@ndow.org

## Project Partners

Name	Agency	Role
No results		

## Project Schedule

**Project Start Date:** 08/01/2022

**Projected Completion Date:** 05/15/2023

**Multi-year Project:** no

**Project Schedule:** On October first the food plot fields are mowed, disked, seed drilled (fall/winter cereal grains and legumes) and irrigated. At the same time the NW corner of the Frenchy Unit is mowed. In December and January grass seed is broadcast or drilled in deficient habitats mostly created by noxious weed treatments or other mechanical disturbances such as fuel/fire breaks. In February or March the food plots are drilled again with additional cereal grains, forbs, legumes and sunflower. At this time the northern impoundments are drained. In June millet, sorghum, and sunflower is broadcast or drilled along portions of the pond edges. In mid-August the desirable native vegetation (goose foot and alkali bulrush) has matured and the northern impoundments are mowed and filled with water. During the last week of August the food plots are strip mowed for the dove season. At the end of September the dove season ends and the cycle starts again. Due to the dove season conflicting with the waterfowl season opener, the food plots have to be mowed, disked, seeded and irrigated prior to the waterfowl opener starting around October 1st.

**State  
Fiscal  
Year:**  
2023

**State  
Fiscal  
Year:**  
2023

## Project Location and Land Status

**Location Narrative:**

Key Pittman Wildlife Management Area

**NDOW Region:** Southern

**NDOW Management Units:** 223 , 133

**Nevada Sage Grouse Population Management Unit:** Project not within a sage-grouse PMU

**County:** Lincoln

## Land Status

Land Status	Acres	Percent of Project
Private	1298.2	99.9
Bureau of Land Management	0.8	0.1

**Bureau of Land Management Office:** Ely District - Caliente Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

# Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT IMPROVEMENT or MANAGEMENT: Management of Wildlife Management Areas (WMA)

## Project Objectives:

- To measurably increase wildlife populations, wildlife use, or habitat for the benefit of public use and hunter success.
- To use food plots or plantings in managed wetland and/or moist-soil habitats to increased production of preferred waterfowl food or cover.
- To use food plots on actively managed agricultural habitats to increase production of preferred wildlife food or cover.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** Salt desert shrub , Lakes and reservoirs , Mixed desert scrub , Mojave warm desert , Linear riparian: perennial and ephemeral rivers and streams , Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra) , Pinyon-juniper woodland (not encroachment)

**Priority Resource Impacted:** Upland Game , Waterfowl

**Priority Species Impacted:** Dabbling duck species , Gambel's quail , Geese

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Not Started

## Project Rationale:

**Purpose and Goals:** The goal of this project is a measurable increase of wildlife use with increased hunter and public use and hunter success. This will be achieved by completing annual plantings and vegetation manipulation, in order to enhance existing habitat on the management area for the benefit of wildlife. **Approach and Tasks:** On October first the food plot fields are mowed, disked, seed drilled (fall/winter cereal grains and legumes) and irrigated. The cereal grains provide a source of food for the waterfowl during hunting season, which attracts more wildlife to the WMA, and helps to spread the hunters out as well as create an additional unique waterfowl hunting opportunity. This creates the opportunity for hunters to hunt shallow water ponds, deep lakes, or flooded fields, increasing the hunter capacity for the WMA. In addition crops planted in the fall have roots established already in the spring and continue to provide wildlife for migrating birds through the spring, and for fawning deer. In December and January grass seed is broadcast or drilled in deficient habitats mostly created by noxious weed treatments or other mechanical disturbances such as fuel/fire breaks. In February or March the food plots are drilled again with additional cereal grains, forbs, legumes and sunflower. Having two separate planting dates helps to provide resources for wildlife at different times of year and life stages. The crops planted in the spring will mature during the summer to provide food for locally nesting waterfowl, and will be an attractant for dove and quail. In June millet, sorghum, and sunflower is

broadcast or drilled along portions of the pond edges. This will mature around the same time that the waterfowl season opens, and will provide forage, cover for birds, and cover for hunters. Approximately 60 acres of fields will be mowed, disked, drilled, and irrigated. Approximately 5 acres of wetland edge habitat will be planted.

## Project Treatments and Actions

**Treatment Name:** Food plots

**Action:** Complete or support WMA crop farming practices

**Planned Start:** 08/2022

## Project Monitoring

**Monitoring Plan:**

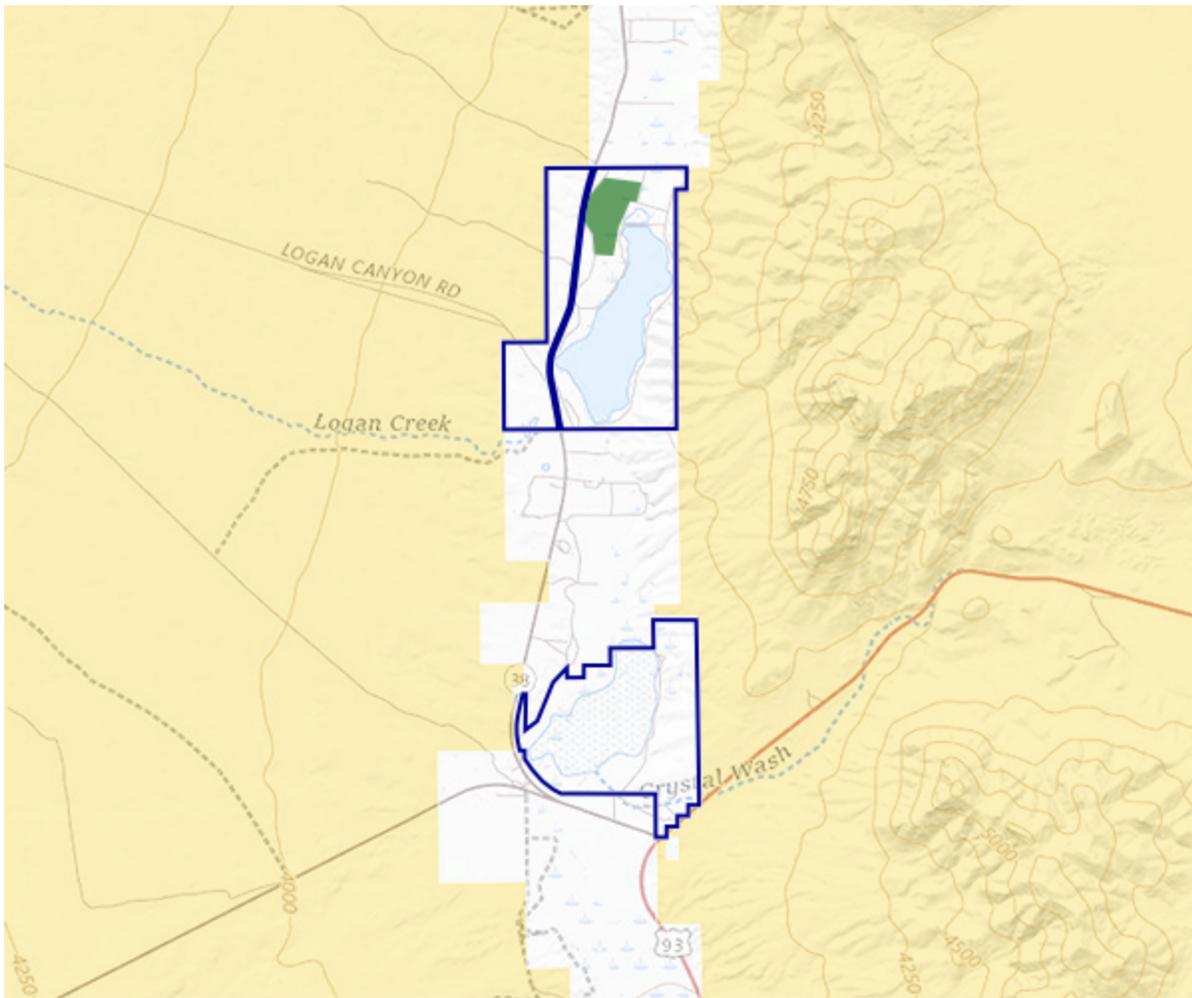
Visually observe the food plots to ensure that the crops planted grow well and that the waterfowl, dove, and quail utilize the resource.

## Project Funding and Budget

Budget Item	NDOW Duck Stamp 2023	NDOW Upland Game Stamp 2023
<b>Materials Purchase</b>		
Seed	\$2600	\$3900

**Budget Narrative:**

All of the labor and equipment will be covered by the WMA staff



**Boundaries**

- County Boundary
- USFS Office Boundaries
- BLM Office Boundaries
- NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- Department of Energy
- Fish and Wildlife Service
- US Forest Service
- National Park Service
- Nevada State Lands
- Nevada Park Service
- Private
- Other

**Project Geometry**

- Project Boundary
- Treatment Area: Food plots



# NEVADA DEPARTMENT OF WILDLIFE

## Project Proposal Report

**Project Name:** FY23 Corners for Quail

**Project ID:** 742

**Lead Agency:** Nevada Department of Wildlife

**Project Manager:** Tori Cernoch Nevada Department of Wildlife

**Phone Number:** (775) 688-1444

**Email:** victoria.cernoch@ndow.org

## Project Partners

Name	Agency	Role
Katie Andrie	Nevada Department of Wildlife	Agency Cooperator
Shawn Espinosa	Nevada Department of Wildlife	Agency Cooperator

## Project Schedule

**Project Start Date:** 07/01/2022

**Projected Completion Date:** 06/30/2024

**Multi-year Project:** yes

**Project Schedule:** This project will consist of plantings and seedings on pivot corners in northern Nevada, taking place in the fall of 2022 and 2023. Planning and coordination for these projects will take place throughout the year.

**State  
Fiscal  
Year:** 2023

**State  
Fiscal  
Year:** 2024

## Project Location and Land Status

### Location Narrative:

Corners for Quail projects are completed in partnership with private landowners who are engaged in agricultural production using pivots. These habitat restoration projects seek to grow favorable vegetation for quail and pheasant on their pivot corners, which is otherwise barren and unused land. This vegetation creates forage and cover for these game bird species. Project implementation is currently ongoing in the Quinn River Valley; project development and coordination is currently taking place in Paradise Valley, NV and areas north of Winnemucca, NV. The goal of this funding proposal is to make work possible in 2022, allowing timely implementation of these habitat projects.

**NDOW Region:** Western

**NDOW Management Units:** 031 , 051

**Nevada Sage Grouse Population Management Unit:** Project not within a sage-grouse PMU

**County:** Humboldt

## Land Status

Land Status	Acres	Percent of Project
Private	149.3	98.4

**Bureau of Land Management Office:** Winnemucca District - Humboldt River Field Office

**US Forest Service Ranger District:** N/A

**Special Land Designations:** N/A

# Project Summary and Justification

**Project Activity and Sub-activity:** HABITAT RESTORATION and REHABILITATION: Other habitat management (non-WMA land)

### Project Objectives:

- To measurably increase wildlife populations, wildlife use, or habitat for the benefit of public use and hunter success.
- To apply seed in conjunction with other habitat management actions to improve ecological conditions, prevent expansion of invasive annual grasses, and rehabilitate wildlife habitat.

**NDOW Initiative Addressed:** No initiatives

**Strategic Habitats Addressed:** Other habitats (grassland and meadows, playa, sand dunes and badlands, alpine and tundra)

**Priority Resource Impacted:** Upland Game

**Priority Species Impacted:** Valley quail

**Does this project benefit Greater Sage-grouse or Greater Sage-grouse habitat:** no

**Project Clearance or Authorization Status:** Not Applicable

### Project Rationale:

As part of NDOW's Corners for Quail program, the goal of this project is to create cover and nesting habitat for upland game bird species on private land. Quail and pheasant populations have been on the decline for a number of years in the project area and that decline has been attributed to a lack of resources. Most notably, there is currently a lack of cover due to conversion of flood-irrigated fields to pivot-irrigated fields. Pivot-irrigated fields reduce any vegetation along field borders with the creation of pivot corners, which are acres of barren land adjacent to the pivots. In an effort to revive populations in the area, this project will create more nesting and foraging habitat by seeding and planting pivot corners with seed mixes tailored to the project areas. This project will convert barren cropland into perennial cover for upland game bird species by working in cooperation with willing landowners on private land.

# Project Treatments and Actions

**Treatment Name:** Paradise Valley Plots

**Acres:** 47.7956864778819

**Action:** Seeding (drill)

**Approach Narrative:** Drill seeding will be applied to these pivot corners. The plant mix will be composed

of perennial bunchgrasses, forbs, and some shrubs.

**Planned Start:** 10/2022

**Action:** Seeding (broadcast)

**Approach Narrative:** Broadcast seeding will be applied to these pivot corners. The plant mix will be composed of perennial bunchgrasses, forbs, and some shrubs.

**Planned Start:** 10/2022

**Treatment Name:** VanDerHoek Plots

**Acres:** 35.1339274557834

**Action:** Planting (container stock)

**Approach Narrative:** Buffalobery container stock will be planted along Willow Creek, utilizing wetter areas to create cover for upland birds.

**Planned Start:** 10/2022

**Treatment Name:** VanDerHoek Plots 2

**Acres:** 19.7447837428338

**Action:** Seeding (broadcast)

**Approach Narrative:** Broadcast seeding will be applied to these pivot corners, dependent on success of previous seeding. The plant mix will be composed of perennial bunchgrasses, forbs, and some shrubs.

**Planned Start:** 10/2022

## Project Monitoring

### Monitoring Plan:

Monitoring will be completed through photo monitoring, where NDOW employees collect before-and-after photos at specified locations and then track treatment progress over successive years. This method allows NDOW to rapidly complete qualitative monitoring of habitat restoration projects.

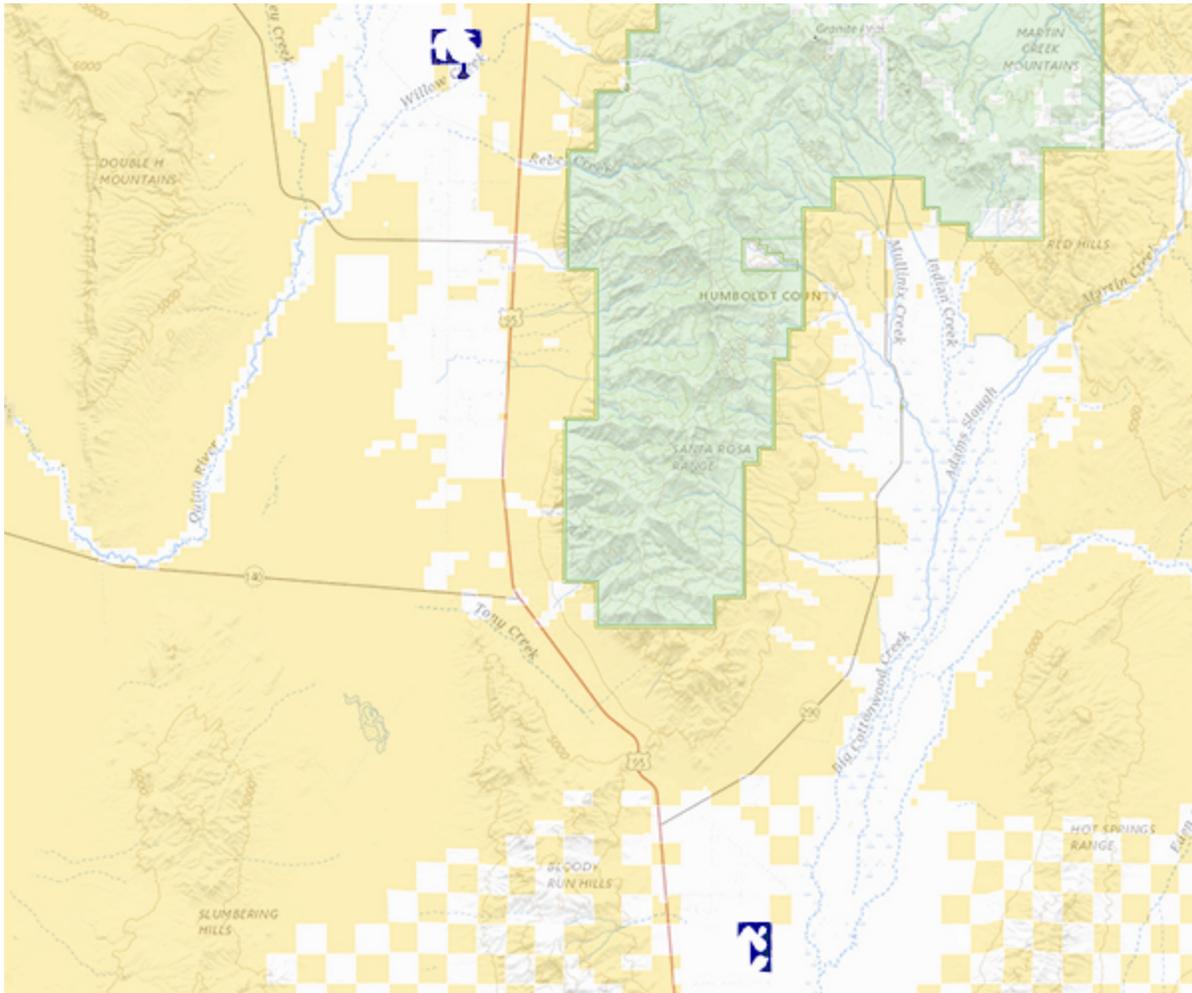
## Project Funding and Budget

Budget Item	In-Kind Contributions (Private Landowner) 2023	NDOW Upland Game Stamp 2023
<b>Equipment/Vehicle Rental</b>		
Watering equipment for seedlings		\$3000
Private landowner equipment use	\$6000	
<b>Materials Purchase</b>		
Seed		\$20000
Seedlings		\$2000
<b>Personnel</b>		
Private-landowner time	\$1000	

### Budget Narrative:

Funding requested from the Upland Game Stamp Special Reserve Account will be applied directly toward equipment and materials necessary for on-the-ground work. Materials composed of seeds and seedlings will be utilized where appropriate (i.e.

some projects require some seedling materials where others are solely seeding operations). Equipment funds requested will be applied where applicable as part of seedling plantings; due to the variance between site characteristics and contributions by private landowners. Private landowners will contribute to these projects through their time and equipment-use dedicated toward pivot corner preparation and weed clearing, watering where possible, and general assistance.



**Boundaries**

- County Boundary   ● USFS Office Boundaries   ● BLM Office Boundaries   ● NDOW Region Boundary

**Land Status**

- Bureau of Indian Affairs   ● Bureau of Land Management   ● Bureau of Reclamation
- Department of Defense   ● Department of Energy   ● Fish and Wildlife Service   ● US Forest Service
- National Park Service   ● Nevada State Lands   ● Nevada Park Service   ● Private   ● Other

**Project Geometry**

- Project Boundary   ● Treatment Area: Paradise Valley Plots   ● Treatment Area: VanDerHoek Plots
- Treatment Area: VanDerHoek Plots 2



## 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) Special Reserve Account Funds are Needed:** FY23

**Project Location:** Harrison Pass, Ruby Mountains Elko County Nevada

**Amount of Funds Requested from Upland Game Account:** \$17,250.00

**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.

Table with 2 columns: Site, Township and Range. Row 1: 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: \_\_\_\_\_



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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		<b>\$ 40,000.00</b>
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)		<b>\$ 69,500.00</b>
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)		<b>\$ -</b>
4. Total Project Funding	<b>\$</b>	<b>109,500.00</b>



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



## BOARD OF WILDLIFE COMMISSIONERS

**Budget Narrative:**

Budget Items	Costs
Seedlings (including seed)	\$37,500.00
Contract labor	\$72,000.00
<b>TOTAL:</b>	<b>\$109,500.00</b>

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.):**

N/A

**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 Middle Rock Creek Restoration Project in any publications, signage, media releases, presentations, or the like.

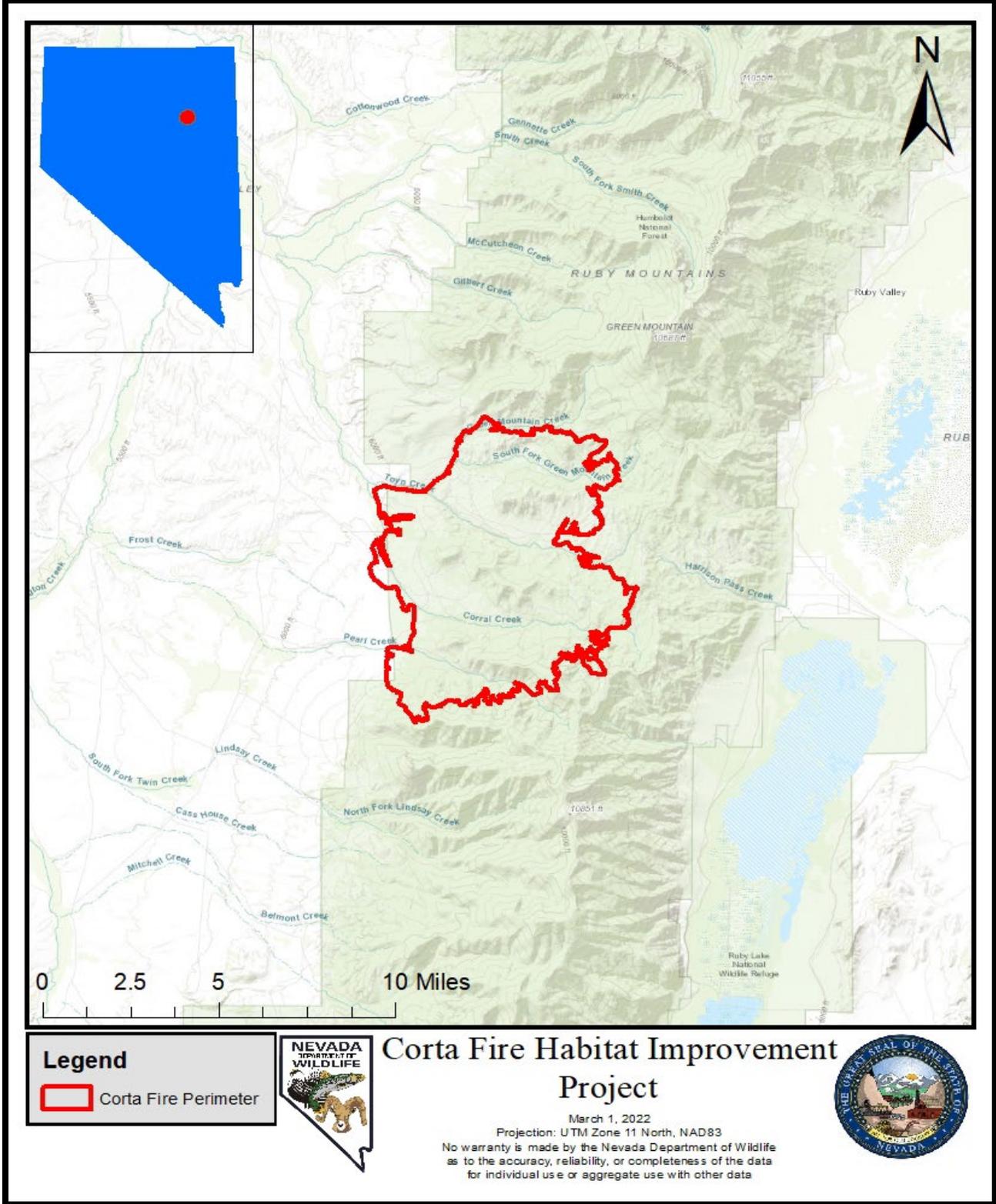
Authorizing Signature: 

Review Date 3/15/2022



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Maps:



**Legend**  
 Corta Fire Perimeter



## Corta Fire Habitat Improvement Project

March 1, 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:** 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) Special Reserve 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 Upland Game 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):**

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			<b>\$ 40,000.00</b>
2. Other Cash Funding Sources for this Project			
a. Forest Service RAC			\$ 100,000.00
1. Amount of Upland game Account Funds Being Requested			<b>\$ 150,000.00</b>
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)			<b>\$ 743,000.00</b>
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)			



## 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.

	<b>Heritage Costs</b>	<b>All Other Costs</b>
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
<b>7. Total Heritage Costs Only</b> (add lines 1, 2, 3c, 4d, 5e, 6e)	<b><u>\$ 150,000.00</u></b>	
<b>8. Total All Other Costs</b> (add lines 1, 2, 3c, 4e, 5e, 6e)		<b><u>\$ 590,000.00</u></b>
<b>9. Total Project Costs</b> (add lines 7 & 8)	<b><u>\$ 740,000.00</u></b>	
(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

