

**MINUTES OF THE CHURCHILL COUNTY  
ADVISORY BOARD TO MANAGE WILDLIFE**

**155 N. Taylor St., Fallon, NV 89406  
May 1, 2019**

**Call to Order:**

The regular meeting of the Advisory Board to Manage Wildlife was called to order at 7:00 PM on May 1, 2019.

PRESENT: Wildlife Board Member Peggy Hughes  
Wildlife Board Member Jason Sibley  
Wildlife Board Member Gary Cordes  
Deputy Clerk to the Board Pamela D. Moore

ABSENT: Wildlife Board Member Jim Curran  
Wildlife Board Member Timothy Gubler

**Pledge of Allegiance:**

The Pledge of Allegiance was recited by the board and public.

**Public Comment:**

Chairwoman Hughes asked if there was any public comment but there was none.

**Verification of the Posting of the Agenda:**

It was verified by Pamela D. Moore, Deputy Clerk to the Board, that the Agenda for this meeting was posted on the 24th day of April, 2019, between the hours of 1:00 and 4:00 PM at all of the locations listed on the Agenda, in accordance with NRS 241.

**Consideration and possible action re: Approval of Agenda as submitted or revised:**

**Member Gary Cordes made a motion to approve the Agenda as submitted. Member Jason Sibley seconded the motion, which carried by unanimous vote.**

**Consideration and possible action re: Approval of Minutes of the meeting held on:**

**A- March 12, 2019.**

The Minutes of the meeting held on March 12, 2019 are submitted for the board's consideration and approval.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: Accept

**Member Gary Cordes made a motion to approve the Minutes of the meeting held on March 12, 2019 as submitted. Member Jason Sibley seconded the motion, which carried by unanimous vote.**

**Consideration and possible action re: Review of Correspondence:**

There was no correspondence to review.

**Appointments:**

**A- Consideration and possible action re: Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season.**

The Commission will establish regulations for the numbers of tags to be issued for mule deer, pronghorn antelope, elk, bighorn sheep, black bear, and mountain goats for the 2019-2020 seasons.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: Accept

Chairwoman Hughes said she has to make a complete report on this item and then asked if there was any public comment but there was none.

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Black Bear Resident Quota Any Legal Weapon Hunt, Black Bear Nonresident Any Legal Weapon Hunt, and Black Bear Harvest Limit Combined Resident and Nonresident Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

Member Cordes said I have a question for Mr. Scott related to Churchill County in particular. Where do you think the population of antelope is going? Is it spreading out to new areas or is it getting more concentrated? Mr. Mike Scott said that is a better question for Jason but, according to the notes that he has provided to me, the antelope are doing well in Churchill County and I think he is looking at some modest increases in tags. Chairwoman Hughes said it is actually a

reduction for Area 181. Member Sibley said it went up ten, from 45 to 55 for their recommendation. Chairwoman Hughes said she was reading the columns backwards. It looks like a few of them have increased around the state. Member Cordes said I was walking my dog at Hidden Cave the other day and two antelope bucks were right there below Hidden Cave, which is incredible.

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Resident Antelope Horns Longer Than Ears Any Legal Weapon Hunt, Resident Antelope Horns Longer Than Ears Muzzleloader Hunt, Resident Antelope Horns Longer Than Ears Archery Hunt, and Resident Antelope Horns Shorter Than Ears Any Legal Weapon Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Antelope Nonresident Horns Longer Than Ears Any Legal Weapon Hunt and Antelope Nonresident Horns Longer Than Ears Archery Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

Member Cordes said this went from 14 to 4 in Unit 183. Member Sibley said is that the unit hit by the pneumonia? Mr. Scott said we have pneumonia that is active in that herd. We think that about 40% of that herd has been lost. The ram segment is still there and there are still plenty for harvest but we backed off of the quotas quite a bit from 14 to 4 even though there are multiple extra rams out there. We just felt, under the circumstances, it might be a good idea to back that off quite a bit. Chairwoman Hughes said there could be additional losses between now and the season. Mr. Scott said that is possible but it has quieted down. We detected that in October and November and it usually hits hard and takes those animals right away. Jason did a survey about a month ago and got pretty good results from that survey. There are still plenty of sheep there but we took a pretty good hit.

**Member Gary Cordes made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Nelson (Desert) Bighorn Sheep Resident Any Ram Any Legal Weapon Hunt and Nelson (Desert) Bighorn Sheep Nonresident Any Ram Any Legal Weapon Hunt as presented. Member Jason Sibley seconded the motion, which carried by unanimous vote.**

Chairwoman Hughes said that went up, so it must be getting fairly good success with the ewe hunt? Mr. Scott said I am not sure about the success rate but part of this is that those numbers continue to climb in those units and, at least for the Muddy Mountains, we are not looking at removing any sheep this year by trapping, or at least not yet. We may talk to Utah a little bit more about that because they are asking for sheep but we weren't going to take them out of the

Muddy Mountains, so that is why you see that increase in that quota. With regard to 213, that unit seems to have a lot more sheep on the mountains.

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Nelson (Desert) Bighorn Sheep Resident Any Ewe Any Legal Weapon Hunt and Nelson (Desert) Bighorn Sheet Nonresident Any Ewe Any Legal Weapon Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

Member Cordes said are these from California and are they more tolerant to the same infection that rams are getting here locally or is it just that it hasn't spread over there? Mr. Scott said we have the same issues with some of those herds. We actually eliminated the Montana mountain herd about 5 years ago because we got pneumonia in that herd. It is Unit 031, which is adjacent to the Double H Mountains, just north of that. Essentially, it is the same mountain range with a pass in the middle. We had a disease event in there and decided to remove the rest of them so that they didn't carry that disease into the Double H Mountains. It was a lousy decision to make but it was the right decision. So far, we haven't seen that event continue into the Double H Mountains, so we still have a healthy herd in those mountains at this point.

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for California Bighorn Sheep Resident Any Ram Any Legal Weapon Hunt, California Bighorn Sheep Nonresident Any Ram Any Legal Weapon Hunt, and California Bighorn Sheep Resident Any Ewe Any Legal Weapon Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

Chairwoman Hughes asked if 074 and 091 are new hunts. Mr. Scott the Unit 091 hunt is alternated yearly with Utah because it is right on the border at Pilot Mountain north of Wendover and this is our year to have a tag hunt in there. With regard to Unit 074, it is a small herd but there are a number of rams in there, so we decided that we would take advantage of that while they are there.

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Rocky Mountain Bighorn Sheep Resident Any Ram Any Legal Weapon Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

**Member Gary Cordes made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Mountain Goat Resident Any Goat Any Legal Weapon Hunt as presented. Member Jason Sibley seconded the motion, which carried by unanimous vote.**

Member Sibley said it looks like the quotas for Area 07 have taken a huge hit. Is that because of population, is it hunter data, or what is causing that? Mr. Scott said we are below the population objectives in that unit, which is the first time in a number of years. We are backing off on quotas for that reason but, also, we have a lot of collared Elk in that area and we realized that about 500 of those Elk are spending a significant portion of the year in Idaho and aren't necessarily available for Nevada hunters, so that is another compounded reason why we backed off on tags there. Member Sibley said that area seems to have been impacted the most by the quota changes. Mr. Scott agreed and said that we really had to prove that we could manage Elk. There was a lot of livestock interest and land managing agencies that we had to prove this to. We were above our population objectives in almost every area and we were getting a lot of pressure, so that is why we saw those big increases in tags over the last few years, which has been great and people have loved that. Now that we are below those population objectives, we are backing off and we have heard about it. A lot of people are disappointed in that, which is unfortunate. We would like to maximize the number of tags and the way we can do that is to manage those Elk right close to the population objectives. We do not want them to be over because that is not a favorable position for us but the most tags we could give out would be at the highest population objective. Member Sibley said this is an ignorant question because I do not know the answer but who sets the population objectives? Mr. Scott said those were set by the plans. Almost every unit has had an Elk planning process done on it, which included sportsmen, livestock interests, and agency personnel. We have one of those plans for almost every significant portion of the state where we manage Elk. Those plans negotiated the population objectives at those levels.

Member Cordes asked about Elk health in general. Mr. Scott replied that we have some issues with Elk diseases in Area 6. They are calling it Spontaneous Elk Death. It hasn't taken out high numbers of Elk but it is unusual and something is happening. We have been studying it. We have a lot of collared Elk and our veterinarian has looked at it. I am not exactly sure what the result was, whether it is a plant-based thing or a disease or what it is. I know they are studying it. I apologize for not knowing more about it but it is definitely going on in Area 6 but it is not wide-spread. To my knowledge, we do not have it in other places. With the number of Elk that we have, all kinds of things happen. There are diseases that Elk can get but we are not seeing big losses in the numbers of Elk from it. Chairwoman Hughes said are those losses in calves or the adult Elk population? Mr. Scott said it is in the adult population. Again, I am separated from it so I don't know all of the details, but, to my knowledge, it has been mostly adults. Member Sibley said I have heard of something, which I believe was in Nevada, that has passed that you cannot bring brain matter or spinal fluid into Nevada but is that for deer only or does it include Elk? Mr. Scott said it is deer and Elk both. The Chronic Wasting Disease (CWD) issue was taken before the Legislature but I don't know the results of that. Hopefully, it did pass because people can go to other states and hunt animals and then bring them back and, sometimes, they cut the antlers off and just throw the rest of the head away and that could pass diseases to

animals in Nevada and then we would be a CWD-positive state, which, we aren't, at the moment.

**Member Jason Sibley made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Elk Antlered Resident Any Legal Weapon Depredation Hunt, Elk Antlerless Resident Any Legal Weapon Depredation Hunt, Elk antlered Resident Any Legal Weapon Hunt, Elk Antlered Resident Muzzleloader Hunt, Elk Antlered Resident Archery Hunt, Elk Spike Resident Any Legal Weapon Hunt, Elk Antlerless Resident Any Legal Weapon Hunt, Elk Antlerless Resident Any Legal Weapon Hunt Wilderness Only, Resident Elk Antlerless Elk Management Any Legal Weapon Hunt Option for Mule Deer any Legal Weapon Hunt, Elk Antlerless Resident Muzzleloader Hunt, Resident Elk Antlerless Elk Management Muzzleloader Hunt Option for Mule Deer Muzzleloader Hunt, Elk Antlerless Resident Archery Hunt, Resident Elk Antlerless Elk Management Archery Option for Mule Deer Archery Hunt, Resident Junior Elk Antlerless Elk Management Hunt Option for Resident Junior Mule Deer Hunt, Elk Antlerless Nonresident Any Legal Weapon Hunt, Elk Antlered Nonresident Muzzleloader Hunt, Elk Antlered Nonresident Archery Hunt 4261, Elk Antlerless Nonresident Any Legal Weapon Hunt, Nonresident Elk Antlerless Elk Management Any Legal Weapon Hunt Option for Mule Deer Hunt, Elk Antlerless Nonresident Muzzleloader Hunt, and Elk Antlerless Nonresident Archery Hunt as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

Chairwoman Hughes said in Area 181 through 184 they have reduced the numbers, which seems strange when they are trying to promote hunting for youth in Nevada but they kept the muzzleloader the same and archery went up, so can you tell me why that has happened? Mr. Scott said some of the changes that you see are simply the demand/success formula. If we have low success one year but high demand for the tags, it will make tags go up the following year or, if you have high success and low demand, it will drop tags. The formula is far from perfect and we are discussing making some changes to that formula. With regard to some of those reductions, I believe the spring fawn ratio is probably chiefly responsible for those reductions. We had a fairly low fawn ratio this spring in that unit, so I think he is just being pretty conservative. He does still have a fairly high buck ratio but I think he is trying to increase the buck ratio. He has been managing for less than 30 and we are trying to get it up to 30, so that is probably why you are seeing some of those reductions with regard to youth and the any legal weapon hunts. You certainly can make a different recommendation and we will listen to you and discuss it. Member Sibley said Area 18 historically has not had high success for any legal weapon, has it? Mr. Scott said I am looking at the any legal weapon success for the last 3 years, which is 35%, 32%, and then, last year, 42%, so it actually had higher success last year than it has, which means that would result in lower tag numbers this year. The post-season buck ratio was 33, so he is still above his target of 30. The model number is lower but there are still plenty of bucks out there. I would certainly be willing to discuss an increase in tags if that is what you

want to see. We are very safe with any increases but I think he just wants to see it come up a little bit higher. Chairwoman Hughes said that makes sense about trying to get the ratio up. It is unfortunate that, when the more success you have, the fewer tags you have. I don't know if that is the best rationale. Mr. Scott said we have been using the demand/success formula for quite a number of years. In all of the internal meetings that we have, we realize that this is not the best solution but it is the tool that we have. There are some advantages to it but there are a lot of times when it does things that don't really make perfect sense to us. I think we are going to start working on this matter this summer to try to come up with a new formula. Although this is very preliminary, we would like to work with the counties to bring a new solution forward and see if you guys would agree with it and work with us or see if you have some better solutions and we could go from there. Hopefully, we will be reaching out to you sometime in the next year or so to try to come up with a better formula. Member Sibley said the purpose behind the increased success means a reduction of tags is because they are assuming that more animals will be taken because the success rate goes up, right? That is why they reduce the tags, so that makes more sense. It looks like Area 7 has the exact opposite effect that the Elk did where it went up almost across the board on deer. Mr. Scott said that is correct. I heard that the Biologist up there has seen buck ratios up there that no biologist has ever seen up there. They are above 30 and it has never been above 30 there. She is seeing a lot more bucks up there and that is why you are seeing those increases there because we are trying to get that down to 30. With the high number of deer up there, you are seeing those higher quotas.

Member Sibley asked if they have collared deer to see if they are going into Idaho also? I hunted the corner of the state this year and saw quite a few deer go through there but it didn't seem like they were resident deer but were moving through the area. Mr. Scott said we have a lot of deer collared but I am not sure if that area has collared deer. I think they do but one thing they have done there is to create some of those highway overpasses to reduce some of the deer from being hit and they have a lot of video of the high numbers of deer that are using those overpasses now. With regard to collars, I think there are some but I am not sure. Member Sibley asked if Utah is a CWD state. Mr. Scott said they are. Member Sibley asked if Idaho is because I wonder if there is concern with the deer migrating back and forth that they would bring in disease. Mr. Scott said I don't think Idaho is and Utah is in the very far southeastern portion of the state. Without having the information in front of me to be able to look, I am not certain. I know they have documented it in the southeastern portion of Utah. We are concerned that we will end up with disease by it spreading and eventually get here. With regard to the north/south migrations that you see, it certainly could happen if Idaho does have it but I am not aware that Idaho does.

**Member Gary Cordes made a motion to approve Commission General Regulation 19-14, Big Game Quotas for the 2019-2020 Season for Resident Junior Mule Deer Antlered or Antlerless Archery, Muzzleloader, or Any Legal Weapon Hunt, Resident Mule Deer Antlerless Any Legal Weapon Hunt, Resident Mule Deer Antlered Any Legal Weapon**

**Hunt, Resident Mule Deer Antlered Muzzleloader Hunt, Resident Mule Deer Antlered Archery Hunt, Nonresident Mule Deer Antlered Any Legal Weapon Hunt, Nonresident Mule Deer Antlered Muzzleloader Hunt, Nonresident Mule Deer Antlered Archery Hunt, and Resident and Nonresident Mule Deer and Antelope Landowner Compensation Tags as presented. Member Jason Sibley seconded the motion, which carried by unanimous vote.**

Member Cordes said, with regard to the fire last 4th of July, how do you manage that when it comes to tags? Mr. Scott said there are two ways to look at it. One is that a lot of winter range burned and so we may see some emergency mule deer hunts, especially antlerless hunts to try to reduce those numbers in order to allow some of those animals to survive. I don't think that they did a lot of increased tags in those units this year for that reason, at least not yet. I know we are doing a lot of reseeding and that kind of work up there. I don't think that we increased tags as a result of that fire.

**B- Consideration and possible action re: 2020 Churchill County Advisory Board Budget.**

The 2020 County Advisory Board Budget will be revised and must be approved.

FISCAL IMPACT: \$4,193.40.

EXPLANATION OF IMPACT: A total of \$872 for meals; \$912 for lodging; \$800 for airfare; \$416.44 for mileage; \$96 for parking; \$300 for rental car; and \$700 for a secretary.

FUNDING SOURCE: Nevada Department of Wildlife.

ACTION REQUESTED: Accept

Chairwoman Hughes said she had to submit this budget today and I made several changes after the state office made some adjustments to the form. I picked out a couple more things that didn't need to be in there. She asked if there was any public or board comment but there was none. There is about \$4,800 on the books with the Comptroller, so we have plenty of money should we need to travel for meetings.

**Member Jason Sibley made a motion to approve the 2020 County Advisory Board Budget as presented. Member Gary Cordes seconded the motion, which carried by unanimous vote.**

**Informational Items:**

**A- Consideration and possible action re: Presentation of Fiscal Year 2020 Draft Predation Management Plan (Final Draft).**

The State Commission will be reviewing the final draft of the Fiscal Year 2020 Draft Predation Management Plan and may take action to modify or endorse the plan.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: None; Informational Only

Member Sibley asked Mr. Scott if he knew how much of the budget goes towards coyote control. I know they have a coyote control in Area 141 and one other area. Mr. Scott said I do not know what percentage or amount. Is it Project 38 that is the coyote control project? Member Sibley said there are two: 38 is one and then 40. It looks like \$100,000 for 40 and \$75,000 for 38.

Member Cordes asked if crow falls under this plan as a predator. Mr. Scott said we have some raven control projects but a crow is actually a migratory game bird. We have a season for crow. Chairwoman Hughes said there is raven removal associated with the sage grouse? Mr. Scott said absolutely. All around the state, we have multiple places where we are removing ravens and there is also a pretty big project on studying ravens to learn about their migration and things like that. They have some satellite tracking backpacks on them, I believe.

Chairwoman Hughes asked if there was any public comment but there was none. This item was presented for informational purposes only and no action was taken.

**B- Consideration and possible action re: Legislative Committee Report.**

A report will be presented to the State Commission on the committee's recent meetings. The Commission may take official positions on those bills and may choose to develop platforms on bills by supporting or opposing general concepts contained within bills or discuss specific language, as well as anything else regarding the current Legislative Session.

Support material is as of the Legislative Committee meeting held on March 16, 2019. Bill and BDR language may be viewed online at:

<https://www.leg.state.nv.us/App/NELIS/REL/80th2019/Bills/List>.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: None; Informational Only

Chairwoman Hughes said it looks like the committee has taken some actions on a number of items. I see that the Commission opposed AB 473 making revisions to trapping and they opposed the competitions for coyote bill. Member Sibley said I think that bill died or was withdrawn. Mr. Scott said that is correct. Member Sibley asked if he knew anything about AB 473, which is why I was asking about the coyote control. Mr. Scott said I think that might have

died too. Member Sibley said it was included with this item but there was nothing on AB 473 with this packet, so that is why I was asking. Chairwoman Hughes said it was included with the stuff that Deputy Clerk Moore sent out but I think it was withdrawn or died, as well, because it hasn't been on the trapper's website or any of those things. Both of these died, so we didn't have to go spend a lot of time in Carson City arguing about that.

Chairwoman Hughes asked if there was any public comment but there was none. This item was presented for informational purposes only and no action was taken.

**C- Consideration and possible action re: Litigation Report.**

A litigation report will be provided, which is provided for informational purposes.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: None; Informational Only

Chairwoman Hughes said they are slowly proceeding and have some dates scheduled. She asked if there was any public comment but there was none. This item was presented for informational purposes only and no action was taken.

**D- Consideration and possible action re: Landowner Compensation Tag Committee Report.**

A report will be provided to the State Commission at the meeting on May 4, 2019 on the Committee's recent meeting to be held on May 3, 2019 at 6:30 PM.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: None; Informational Only

Member Cordes asked if this seems to work for the landowners? Mr. Scott said I believe it does. I am staffed to that committee and one of the themes from the meeting is why change something that has been working for 26 years. Having said that, there are some changes that people would like to see but they are pretty small changes. In general, it seems to be working pretty well. Chairwoman Hughes said, last year, didn't they make a change to the formula because they got up against the cap and had to do something with that? Mr. Scott said that was with the Legislature where it went from 1.5% of the statewide total of deer and antelope to 2.5%. Member Sibley said, when you have an area like 7, that has a huge decrease in elk, do the landowner tags decrease, as well? Mr. Scott said they do not. The landowner elk tags, which are called the elk incentive tags, actually come off of the quota so, if an area has a quota of 25 elk tags and there are 10 landowner elk incentive tags available, you would reduce the quota by 10,

so there would be a total of 15 available for the general sportsmen. With regard to the deer and antelope tags, those do not come off of the quota but are add-on tags. Member Sibley said, for an area like Area 7, they will not see a decrease for the landowner incentive tags for elk? Their number is going to remain the same and it is just the general tags that come down? Mr. Scott said that is correct.

Chairwoman Hughes asked if there was any public comment but there was none. This item was presented for informational purposes only and no action was taken.

**E- Consideration and possible action re: AB 473 making revisions to trapping.**

AB 473 - AN ACT relating to trapping; making it unlawful for a person at any time to set, operate or otherwise use a leghold trap to hunt any wild mammal; increasing the frequency at which a person who takes or causes to be taken any wild mammals by means of a trap, snare or similar device must check the trap, snare or similar device; and providing other matters properly relating thereto.

Also provided with the bill is the Fiscal Note, Proposed Amendment, and Exhibits related thereto.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: None; Informational Only

Chairwoman Hughes asked if there was any public comment but there was none. This item was presented for informational purposes only and no action was taken.

**F- Consideration and possible action re: Items listed on the Nevada Board of Wildlife Commissioners' Agenda for May 3 and 4, 2019, which is attached as Exhibit "A".**

The board will consider items listed on the Nevada Board of Wildlife Commissioners' Agenda for May 3 and 4, 2019, which is attached as Exhibit "A". The board will take action as deemed appropriate.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: Other

There were no other items discussed.

Chairwoman Hughes asked if there was any public comment but there was none. This item was presented for informational purposes only and no action was taken.

**Schedule Next Meeting Date:**

**A- The Nevada Board of Wildlife Commissioners will meet on June 21 and 22, 2019 so a meeting that week is necessary.**

The Nevada Board of Wildlife Commissioners will meet on June 21 and 22, 2019. Therefore, this County Advisory Board shall set its next meeting prior to that date to go over the state's Agenda items to take action or have discussion where appropriate. The Chambers is available on June 17, 18, or 19.

FISCAL IMPACT: N/A

EXPLANATION OF IMPACT: N/A

FUNDING SOURCE: N/A

ACTION REQUESTED: Accept

The board agreed to hold the next meeting on Wednesday, June 19, 2019 at 7:00 PM but in Room #102 because the Chambers is booked by another entity on that night. Training will be provided for the CivicClerk Agenda Management Program.

**Public Comment:**

Chairwoman Hughes asked if there was any public comment. Gary Cordes said the board is honored to have Mr. Scott here tonight and he appreciates his efforts. Mr. Scott thanked him and said I am pleased to be here and I hope to get here more often. This was very pleasant.

**Adjournment:**

The meeting was adjourned at 8:00 PM.

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CHAIRWOMAN PEGGY HUGHES

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MEMBER JIM CURRAN

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MEMBER JASON SIBLEY

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MEMBER TIMOTHY GUBLER

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MEMBER GARY CORDES

ATTEST:

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Pamela D. Moore, Deputy Clerk to the Board

DRAFT



# Churchill County Agenda Report

**Date Submitted:** May 7, 2019

**Agenda Item #:** Appointments -  
**Meeting Date Requested:** June 19, 2019

**To:** Advisory Board to Manage Wildlife  
**From:** Pamela D. Moore, Deputy Clerk to the Board  
**Subject Title:** Consideration and possible action re: Training Session for CivicClerk..

**Type of Action Requested:** None; Informational Only

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** None; informational only.

**Discussion:** Deputy Clerk Moore will provide the board with a training session for the CivicClerk Agenda Management Program and BoardView.

**Alternatives:** N/A

**Fiscal Impact:** N/A

**Explanation of Impact:** N/A

**Funding Source:** N/A

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

Date: May 07, 2019

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None Aye: 0  
2) None Nay: 0

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



## Churchill County Agenda Report

*Patricia J. Moore*

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(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

# **CIVICCLERK/BOARDVIEW AGENDA MANAGEMENT PROGRAM**

[\*\*https://churchillconv.civicclerk.com/BoardView\*\*](https://churchillconv.civicclerk.com/BoardView)

## BOARDVIEW SIGN IN

Initial Set Up is Your First Initial  
and Last Name, i.e.

**pmoore**

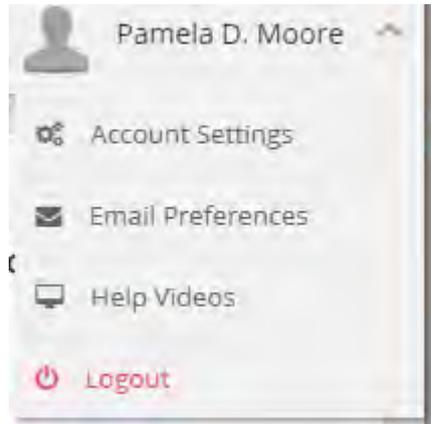
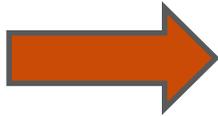
For Username and Password



The image shows a screenshot of the CIVICCLERK sign-in interface. At the top, the word "CIVICCLERK" is displayed in a purple, sans-serif font. Below this, the text "SIGN IN" is centered. There are two input fields: the first contains the text "pmoore" and the second is labeled "Password". A blue button with the text "Sign me in" is located at the bottom right of the form area. The background of the slide features a blue and orange geometric design on the left and a solid blue bar on the right.

# CHANGE PASSWORD

Go to Profile in upper right-hand corner and then to Account Settings to Change Password:



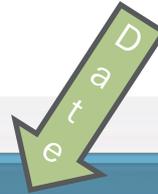
Account Settings Pamela D. Moore

Email:	<input type="text" value="pammoore@churchillcounty.org"/>	Old Password:	<input type="password"/>
First Name:	<input type="text" value="Pamela D."/>	New Password:	<input type="password"/>
Last Name:	<input type="text" value="Moore"/>	Confirm password:	<input type="password"/>

# AGENDAS AVAILABLE TO YOU

FILTER		Agendas		SEARCH	USER
05/01/2019	7:00 PM	03/12/2019	7:00 PM	01/22/2019	7:00 PM
Advisory Board to Manage Wildlife		Advisory Board to Manage Wildlife		Advisory Board to Manage Wildlife	
10/31/2018	7:00 PM	09/17/2018	7:00 PM	08/09/2018	7:00 PM
Advisory Board to Manage Wildlife		Advisory Board to Manage Wildlife		Advisory Board to Manage Wildlife	

# FILTER SEARCH



**Agendas** Peggy A. Hughes

Advisory Board to Manage Wildlife

May 2019							May 2019						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	1	2	3	4	28	29	30	1	2	3	4
5	6	7	8	9	10	11	5	6	7	8	9	10	11
12	13	14	15	16	17	18	12	13	14	15	16	17	18
19	20	21	22	23	24	25	19	20	21	22	23	24	25
26	27	28	29	30	31	1	26	27	28	29	30	31	1
2	3	4	5	6	7	8	2	3	4	5	6	7	8

FROM **05/16/2019** TO **05/16/2019**

05/01/2019 **Advisory Board to Manage Wildlife** 7:00 PM  
10/31/2018 **Advisory Board to Manage Wildlife** 7:00 PM  
06/25/2018 **Advisory Board to Manage Wildlife** 7:00 PM

# SELECT AGENDA YOU WANT TO REVIEW

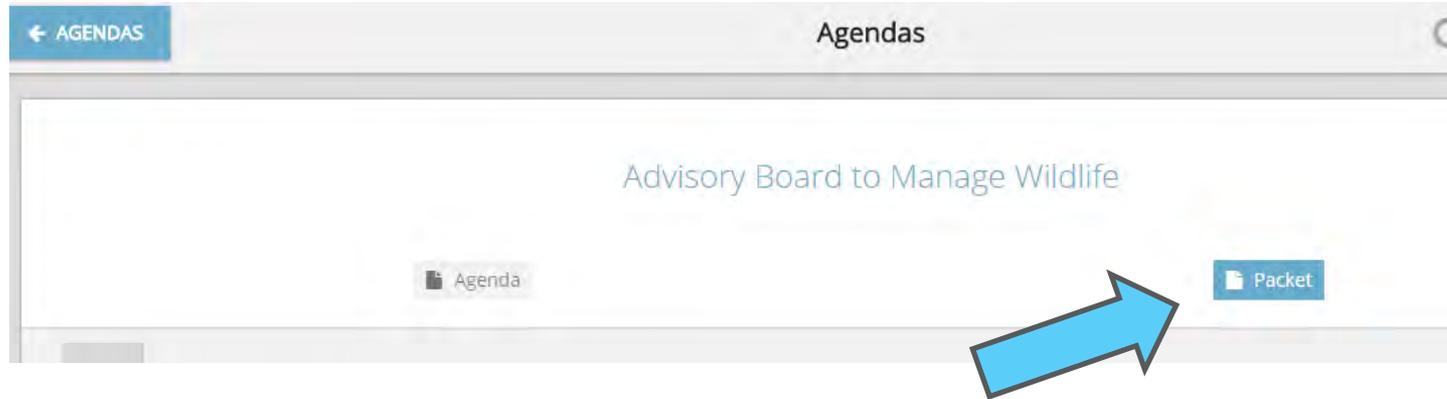
The screenshot displays the CivicClerk interface for reviewing an agenda. At the top, there is a navigation bar with a back arrow and the text 'AGENDAS', the title 'Agendas', a search icon, and a user profile for 'Peggy A. Hughes'. Below this, the main content area is titled 'Advisory Board to Manage Wildlife' and contains two tabs: 'Agenda' (selected) and 'Packet'. The agenda items are listed in a vertical stack, each with a three-dot menu icon on the left:

- 1 Call to Order
- 2 Pledge of Allegiance
- 3 Public Comment
- 4 Verification of the Posting of the Agenda
- 5 Consideration and possible action re: Approval of Agenda as submitted or revised
- 6 Consideration and possible action re: Approval of Minutes of the meeting held on

At the bottom, there is a navigation bar with four tabs: 'AGENDAS' (selected), 'MINUTES', 'CIVICCLERK', and 'NOTES'. A 'MEDIA' tab is also visible on the right side of the bottom bar.

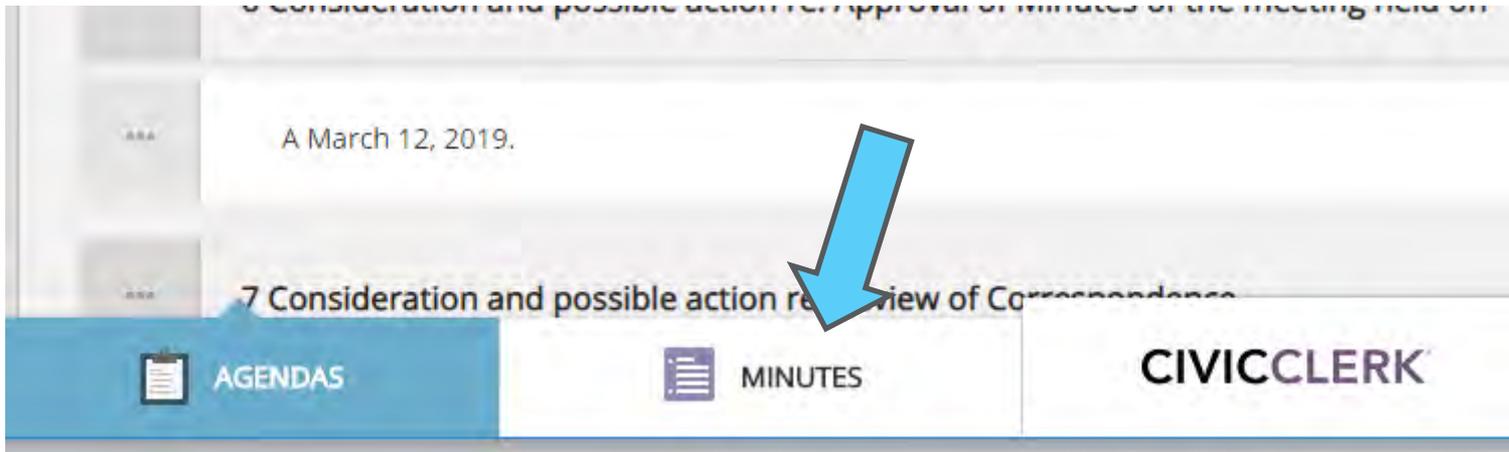
# PACKET

Select Packet



# SELECTING MINUTES

Click on Minutes:



# MINUTES

Select the Meeting Minutes You Want to Review:

**FILTER** Minutes   Peggy A. Hughes

<p> 01/22/2019 <span style="float: right;"> 7:00 PM</span></p> <p style="text-align: center;"><b>Advisory Board to Manage Wildlife</b></p>	<p> 10/31/2018 <span style="float: right;"> 7:00 PM</span></p> <p style="text-align: center;"><b>Advisory Board to Manage Wildlife</b></p>	<p> 09/17/2018 <span style="float: right;"> 7:00 PM</span></p> <p style="text-align: center;"><b>Advisory Board to Manage Wildlife</b></p>
<p> 08/09/2018 <span style="float: right;"> 7:00 PM</span></p> <p style="text-align: center;"><b>Advisory Board to Manage Wildlife</b></p>	<p> 04/23/2018 <span style="float: right;"> 7:00 PM</span></p> <p style="text-align: center;"><b>Advisory Board to Manage Wildlife</b></p>	<p> 03/12/2018 <span style="float: right;"> 7:00 PM</span></p> <p style="text-align: center;"><b>Advisory Board to Manage Wildlife</b></p>



# NOTES

You can take notes or write questions you want to ask in the Notes section. **Click on an item**, which brings up this screen:

Advisory Board to Manage Wildlife

## Appointments

Consideration and possible action re: Legislative Committee Report.

CREATED BY: Pamela D. Moore

DEPARTMENT: Clerk/Treasurer

RECOMMENDED ACTION: None: Informational Only

### Attachments

- Agenda Report PDF
- Legislative Session Calendar PDF
- Bills and Bill Draft Requests PDF

### Speakers

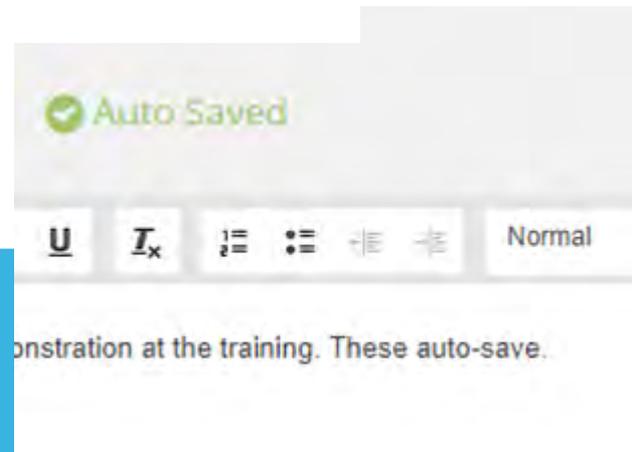
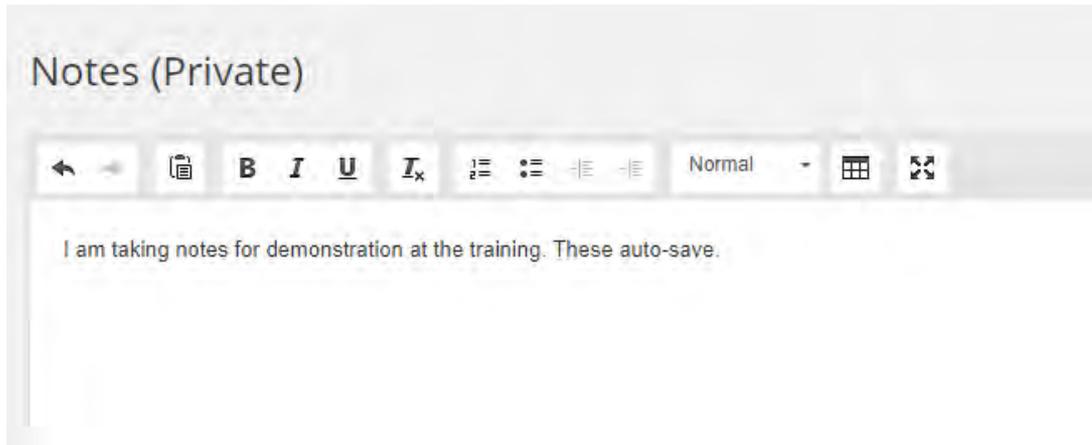
Chairwoman Huges	BOARD MEMBER	0 MIN
Jason Sibley	BOARD MEMBER	0 MIN
Jim Curran	BOARD MEMBER	0 MIN
Carl Erquiaga	CITIZEN	0 MIN

### Notes (Private)

Rich text editor toolbar: Undo, Redo, Bold, Italic, Underline, Text Color, Bulleted List, Numbered List, Decrease Indent, Increase Indent, Format, Table, Full Screen.

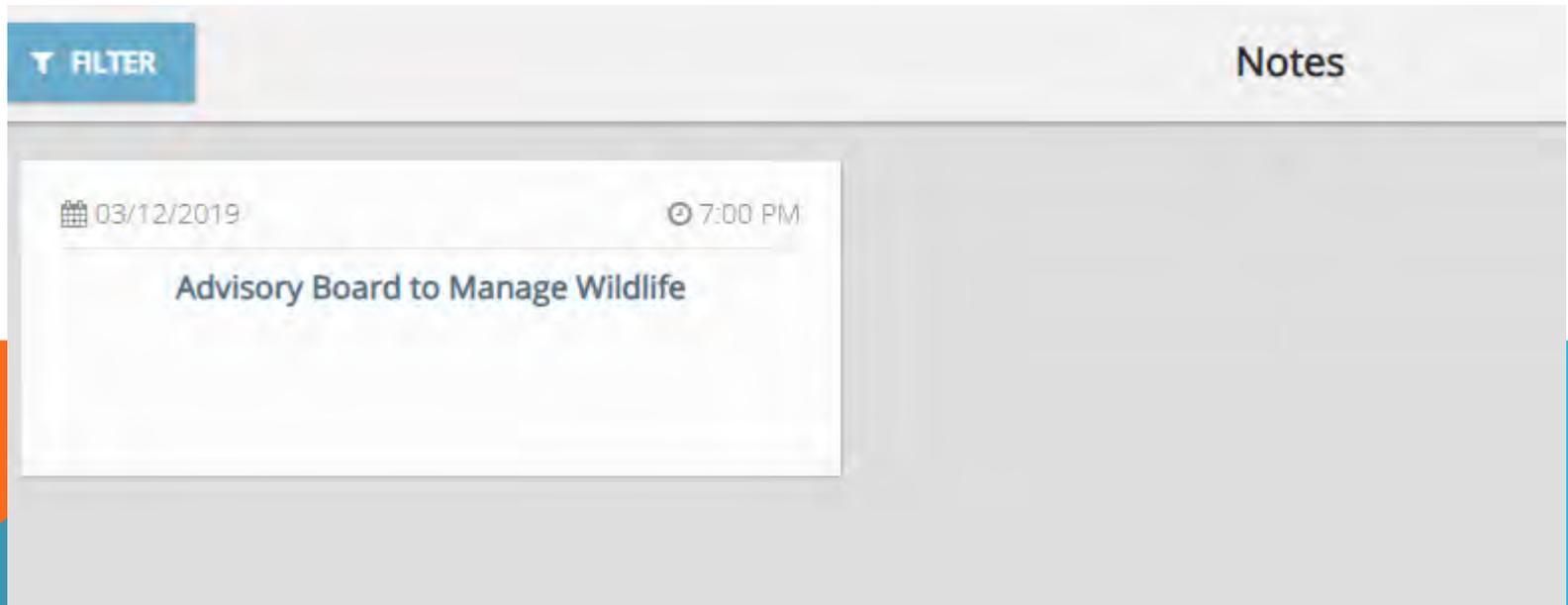
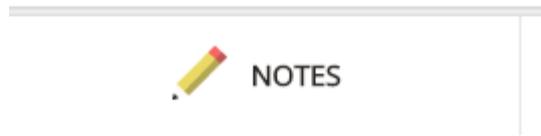
# NOTES

You can type questions or take notes that are **only accessible by you!** Nobody else will see these notes.



# VIEWING NOTES

You can view notes that you have taken by clicking on the Notes icon at the bottom of your screen. It brings up a list of meetings where you have taken notes. In this example, we have only one.



# VIEWING NOTES

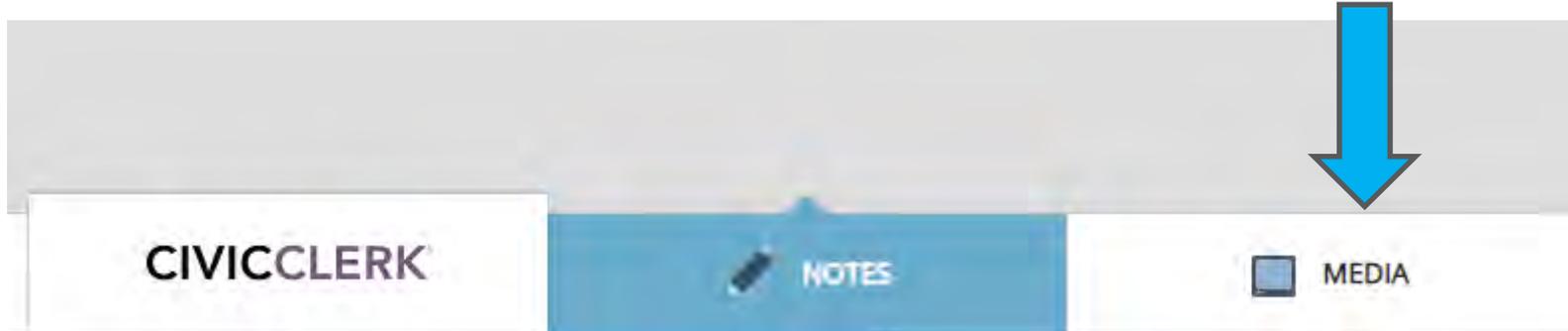
I then clicked on the meeting with the notes, and it brings this up:



The screenshot displays a software interface with two main components. On the left, a meeting card is shown with a calendar icon, the date '03/12/2019', and a clock icon with the time '7:00 PM'. Below this information, the text 'Advisory Board to Manage Wildlife' is displayed. On the right, a notes card is visible, featuring a red 'X' icon in a circle at the top left and a printer icon in a circle at the bottom left. The main text of the notes card reads 'Consideration and possible action re: Legislative Committee Report.' followed by the date and time '05/16/2019 10:25 AM' and a right-pointing arrow. Below this, a line of text states 'I am taking notes for demonstration at the training. These auto-save.'

# MEDIA

You can click on Media to listen to the audio. When the county goes to live streaming, you will have that feature available also but it is not at this time.



# MEDIA

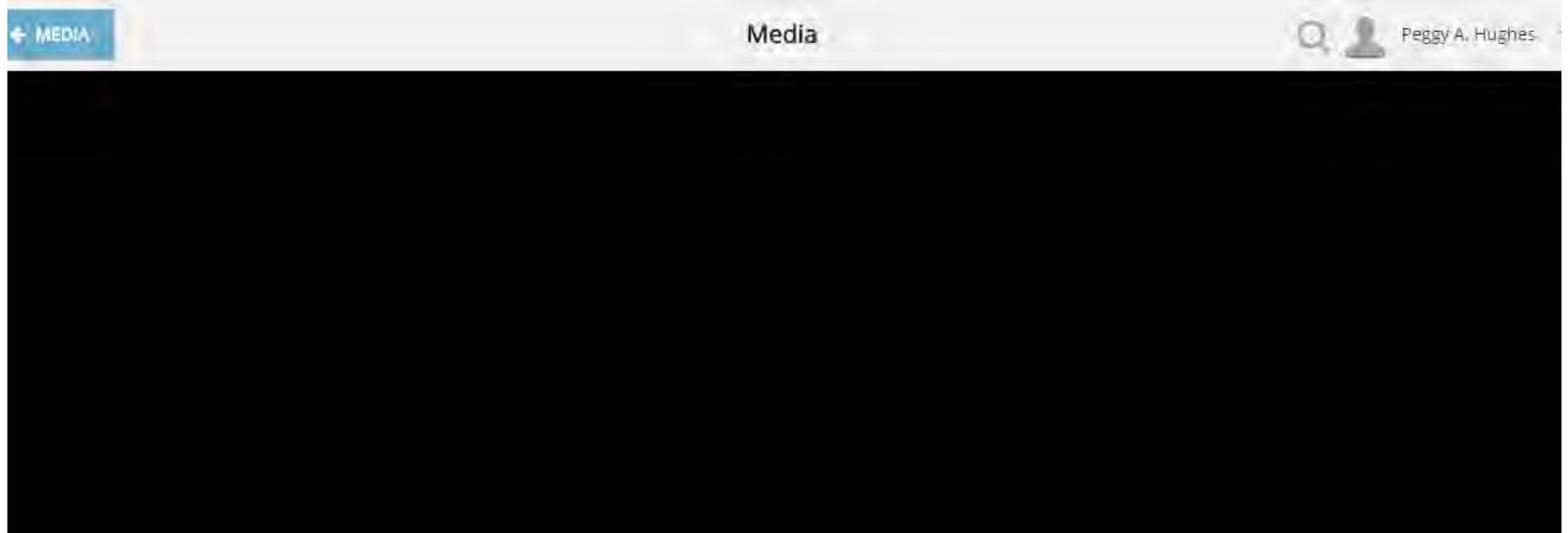
Select the meeting you are interested in:

**FILTER** Media   Peggy A. Hughes

 05/01/2019  7:00 PM <b>Advisory Board to Manage Wildlife</b>	 03/12/2019  7:00 PM <b>Advisory Board to Manage Wildlife</b>	 01/22/2019  7:00 PM <b>Advisory Board to Manage Wildlife</b>
 10/31/2018  7:00 PM <b>Advisory Board to Manage Wildlife</b>	 09/17/2018  7:00 PM <b>Advisory Board to Manage Wildlife</b>	 08/09/2018  7:00 PM <b>Advisory Board to Manage Wildlife</b>

# MEDIA

Once you click on it, then it will start the audio:



# AGENDAS/MINUTES POSTING NOTIFICATION

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**Property Tax Cap Claim Form**  
File your 2019-2020 Property Tax Cap Claim Form Online. [Learn More](#)

**Tax Sale 2019!**  
Churchill County Tax Sale April 30, 2019. Information & Dates are Available. [Learn More](#)

**Upcoming Recreation Events!**  
Parks & Recreation, Churchill County has great programs for all ages. [Learn More](#)

Browse Files

- Agendas / Minutes
- Bids / Proposals
- County Code
- County Master Plan
- Employment
- Permits / Licenses
- Photo Gallery

Mon, May 20  
Commissioners' Budget Workshop

Thu, Jun. 6  
Regular County Commissioners' Meeting

Thu, Jun. 6  
Regular County Commissioners' Meeting

VIEW ALL

May 2019						
Su	M	Tu	W	Th	F	Sa
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
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# AGENDAS/MINUTES NOTIFICATION

Click on “Agendas/Minutes” in the purple menu in the center of the page:



# AGENDAS/MINUTES NOTIFICATION

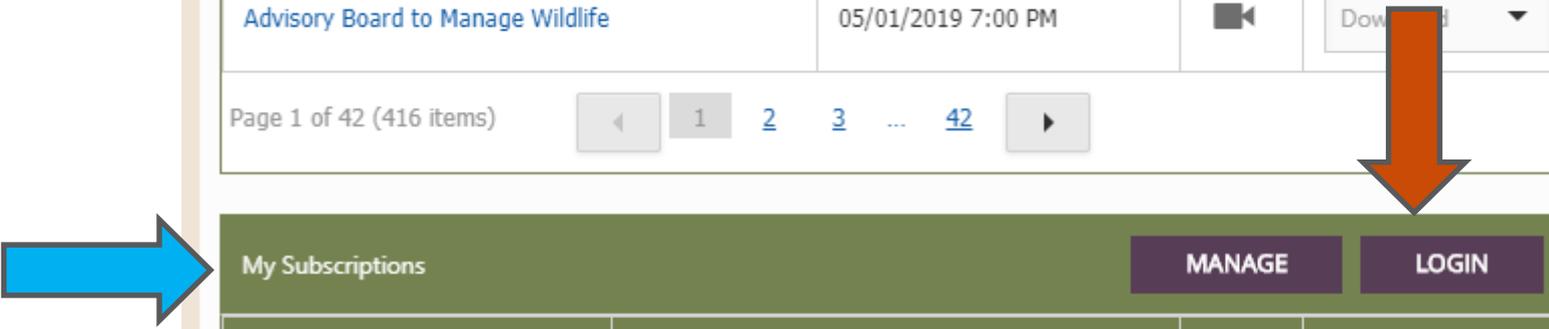
Scroll down to the end of the page to “My Subscriptions” and then to “Login”

<a href="#">Board of County Commissioners</a>	05/02/2019 8:15 AM		Download ▾
<a href="#">Advisory Board to Manage Wildlife</a>	05/01/2019 7:00 PM		Download ▾

Page 1 of 42 (416 items)    < 1 2 3 ... 42 >

**My Subscriptions**    **MANAGE**    **LOGIN**

Name	Date/Time	Media	Files
You haven't added any subscriptions yet. Login and click the "Manage" button to enter your preferences. Media will show up here based on those settings			



# AGENDAS/MINUTES NOTIFICATION

If you have not previously set up a login account, you will need to click on “Create Account”

Login ×

Login Below

E-mail:

Password:

Remember Me

[Create Account](#) [Forgot Password?](#)



# AGENDAS/MINUTES NOTIFICATION

Complete the form and then click “Submit”

## Create Account

Confirm Password:

First Name:

Last Name:

Address 1:

Address 2:

City:

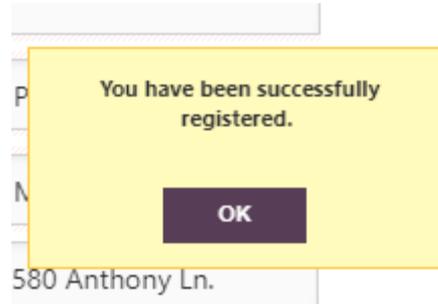
State:  ▼

Zip:

Phone:

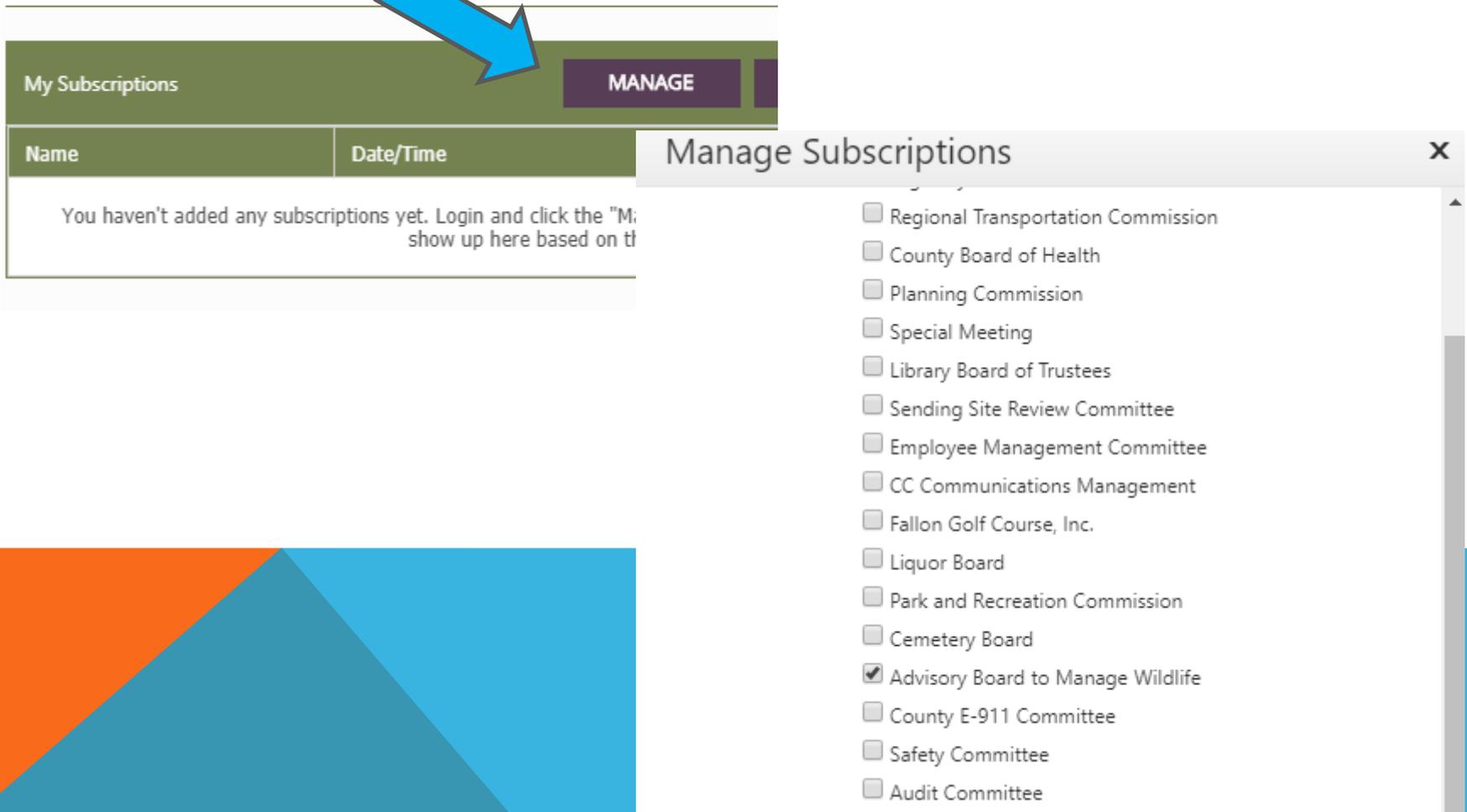
# AGENDAS/MINUTES NOTIFICATION

After you submit your account information, you will get the notification that you have successfully registered (see below). It will generate an email to you asking to confirm your subscription. You will need to check your spam or junk folder for this email. The email will come from CivicClerk or CivicPlus. Once you receive this email, please go in and confirm the subscription.



# AGENDAS/MINUTES NOTIFICATION

You then need to go in and Manage your Subscription to the boards you are interested in. In this case, we will select only the Advisory Board to Manage Wildlife:



The screenshot shows a web interface with a 'My Subscriptions' section and a 'Manage Subscriptions' modal window. A blue arrow points to the 'MANAGE' button in the 'My Subscriptions' section. The modal window lists various committees with checkboxes, and 'Advisory Board to Manage Wildlife' is selected.

Name	Date/Time
You haven't added any subscriptions yet. Login and click the "M: show up here based on t	

### Manage Subscriptions

- Regional Transportation Commission
- County Board of Health
- Planning Commission
- Special Meeting
- Library Board of Trustees
- Sending Site Review Committee
- Employee Management Committee
- CC Communications Management
- Fallon Golf Course, Inc.
- Liquor Board
- Park and Recreation Commission
- Cemetery Board
- Advisory Board to Manage Wildlife
- County E-911 Committee
- Safety Committee
- Audit Committee

# AGENDAS/MINUTES NOTIFICATION

Thereafter, whenever we post an Agenda or Minutes, you will get an email indicating that it has been posted and a link to open it up for viewing:

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

From: noreply@civicclerk.com <donotreply@civicclerk.com>

Sent: Fri 4/26/2019 2:14 PM

To: Pam Moore

Cc:

Subject: Citizen Notification - "Agenda Packet Published" Email Template

Agenda Name: Board of County Commissioners

Meeting Date: May 2, 2019

[Click to View Agenda](#)



## Churchill County Agenda Report

**Date Submitted:** June 11, 2019

**Agenda Item #:** Appointments -  
**Meeting Date Requested:** June 19,  
2019

**To:** Advisory Board to Manage Wildlife

**From:**

**Subject Title:** Consideration and possible action re: Duck Stamp Program Report and Projects..

**Type of Action Requested:** Accept

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** motion to approve the Duck Stamp Program Report and proposed projects.

**Discussion:** The Duck Stamp Program Report is provided for consideration. The Nevada Board of Wildlife Commissioners will take action to approve up to \$117,500 for projects submitted for FY 2020 funding from the Duck Stamp account. The specific Duck Stamp projects that may be approved are listed below:

- Assessing Avian Nest Success at Carson Lake (\$45,000).
- Geo-Tube Dams for Regulating Water at Carson Lake (\$22,500).
- Ducks Unlimited Wetlands Conservation Support (\$10,000).
- Overton WMA Ponds Fence Project (\$15,000).
- Mason Valley WMA Waterfowl Habitat Enhancement (\$15,000).
- Eastern WMA Complex Weed Control (\$10,000).

**Alternatives:** Deny approval of the projects or make other suggestions.

**Fiscal Impact:** \$117,500.

**Explanation of Impact:** If all projects are approved, \$117,500 will be funded from the state's Duck Stamp account.

**Funding Source:** State of Nevada's Duck Stamp Account.

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



# Churchill County Agenda Report

Reviewed By:

*Pamela D. Moore*

Date: June 12, 2019

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

*Peggy A. Hughes*

Date: June 12, 2019

\_\_\_\_\_  
Peggy A. Hughes, Member

-----  
**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None	_____	<b>Aye: 0</b>
2) None	_____	<b>Nay: 0</b>

*Pamela D. Moore*

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

# Duck Stamp Program Report

Nevada Department of Wildlife

June 2019



*Common Golden-eye Duck Stamp art by Richard Clifton (2018)*



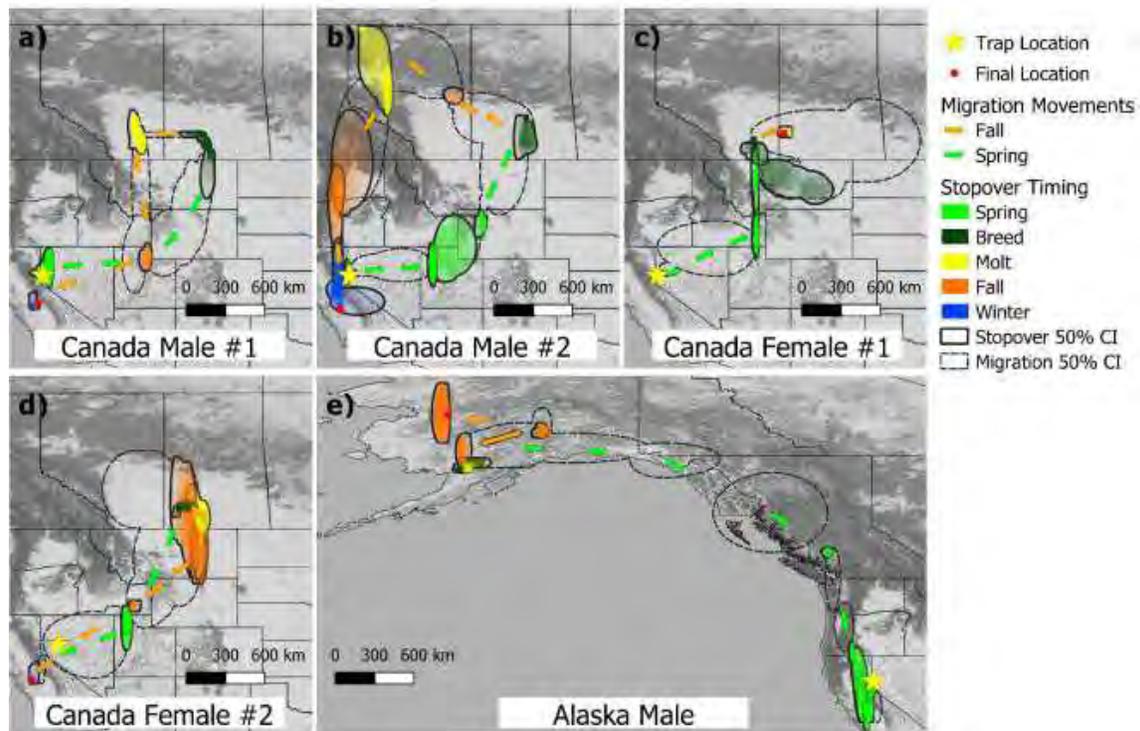
# Table of Contents

	Page
Progress Report on Duck Stamp Projects Funded in FY 2019.....	1
Summary of Proposed FY 2020 Duck Stamp Projects (table) .....	7
Duck Stamp Account Budget Status (table) .....	9
Proposed FY 2020 Duck Stamp Projects .....	11

# Progress Report on Duck Stamp Projects Funded in FY 2019

## Technician Support for Nevada Waterfowl Projects

For the past six years, NDOW has used Duck Stamp funds to help pay for the attachment of more than 400 geolocator devices to 3 species of ducks: wood ducks, mallards, and canvasbacks. FY19 was the last fiscal year that NDOW will fund a graduate student technician for this project. The attachment and subsequent retrieval of these devices has been more successful than initially planned. Given that, NDOW funds were also used to support a graduate student at the University of Nevada, Reno to continue to retrieve these devices, analyze the data, and write-up the results. The student, Nathan Cook, began work on the project in February 2017. He retrieved numerous geolocators from wood ducks, helped install 63 geolocators on canvasbacks, conducted the 2017 spring breeding waterfowl survey, completed classroom requirements at UNR, and completed excellent progress on the analysis of these geolocator data. He defended his Masters of Science thesis in December 2018, titled "Geolocators as tools for inferring waterfowl movements and breeding phenology in the Pacific Flyway". Examples of maps produced by this project are included below. They show canvasback movements after being fitted with geolocators in western Nevada. The analysis of these tracking devices will help inform waterfowl habitat and population managers on stay duration and subsequent habitat requirements for conservation management.



## Ducks Unlimited Wetlands Conservation Support

The Nevada Department of Wildlife (NDOW) donated \$10,000 to Ducks Unlimited (DU) during FY19 to help them implement the migratory bird projects that were developed as a result of the North American Waterfowl Management Plan. The projects primarily consist of wetland restoration, forage establishment and production, and the purchase of conservation easements in the prairie potholes regions of Saskatchewan and Alberta. Band return data show that these two Canadian provinces are the sources of a significant number of waterfowl that pass through Nevada each year. The prairie potholes region has the highest density of breeding ducks in all of North America.



## Overton WMA Pintail and Wilson Pond Leveling

To determine how best to improve the Pintail and Wilson ponds at the Overton Wildlife Management Area (WMA), DU was hired by NDOW to conduct a topographic survey and prepared a 1-foot contour interval topographic base map. They also worked with NDOW to prepare a detailed engineering design for the two ponds during the winter of 2016. The design was a cut and fill balance that resulted in more uniform pond bottoms that eliminated overly deep areas and spread water to areas that previously did not support shallow ponded conditions. The design also improved water delivery and drainage, thus improving NDOW's overall ability to manage habitat. For example, these improvements allow NDOW staff to more readily conduct moist-soil vegetation management to increase production of preferred waterfowl food plants. The improved habitat conditions will benefit all species of waterfowl

and shore birds that frequent Overton WMA. Besides the habitat improvements, less water will be required to manage the units while still providing optimal habitats for both waterfowl and hunters. The final design included earthwork calculations that were used for preparing cost estimates for the final construction phase of the project. The design included installing new water control structures (WCS) that, in association with pond re-contouring, have improve water delivery and drainage, and the ability to manage habitat.

The project site consisted of approximately 155 acres where work was completed. There was approximately 14,500 linear feet of road base placed on top of the levees and for wildlife area staff and area users to access the area in poor weather conditions.

Construction of the project consisted, in general, of the following features and activities:

- A. Conduct all contract administration, project controls, mobilization and demobilization.
- B. Comply with all permit requirements.
- C. Excavate pond bottoms and swales as shown on the plans.
- D. Clear, grub, and strip perimeter levees in preparation for levee improvement and placement of compacted fill operations.



*Pintail Pond at the Overton WMA*

- E. Place uncompacted fill material in pond units as shown on the plans.
- F. Place compacted fill to improve levee as shown on the plans.
- G. Construct islands in locations and orientation shown on plans.
- H. Construct rip-rap Overflow Weirs/Spillways in locations as shown on the plans.
- I. Install new WCS.
- J. Place riprap erosion protection around water control structures.

This project was completed using \$60,000 each from NDOW's Duck Stamp and Wildlife Heritage accounts, and an additional \$360,000 from NDOW's Wildlife Restoration Funds Federal Grant.

## **Key Pittman WMA Wildlife Food Plots**

A total of \$3,900 was expended on seed from Upland Game Bird Stamp funds and \$2,600 from Duck Stamp funds. Approximately 60 acres were planted in October with winter wheat, fall 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. An additional 40 acres were planted in January 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 late February with spring wheat, oats, Ladak alfalfa, and native annual sunflower. The annual seeding projects are completed to increase forage production in wildlife feeding areas on the WMA and to enhance hunter opportunities. This project was completed by NDOW staff.

## **Eastern WMA Complex Weed Control**

NDOW is mandated by state law to control listed noxious weeds found on its property. Removal of noxious and other undesirable weeds improves appearance, public access, limits the spread of these weeds to other areas and enhances wildlife habitat. The goal of this project was to remove noxious/invasive weeds found on the Steptoe Valley, Wayne E. Kirch and Key Pittman WMAs.

This project was awarded \$30,000 total (\$10,000 from Habitat Conservation Fee, \$10,000 from Duck Stamp, \$10,000 from Upland Game Bird Stamp). It also utilized funding from a Nevada Department of Agriculture (NDA) grant, funding from Cooperative Weed Management Areas, and funding from NDOW's WMA Federal Grant. Tri-County Weed Control was contracted to assist NDOW personnel in weed control efforts. In total over \$65,000 has been spent on weed treatments on the Steptoe, Kirch, and Key Pittman WMAs so far. It is estimated that an additional \$20,000 (\$10,000 from NDOW's Upland Game Bird Stamp account & \$10,000 from a NDA grant) will be spent this spring bringing the total project cost to just over \$85,000 for this fiscal year. To date, over 800 acres have been treated. Over 1,000 acres will have been treated by the conclusion of the project. Major weeds treated include hoary cress, Canada thistle, Russian knapweed, bull thistle, and phragmites. Other weeds such as Johnson grass, Russian thistle, Scotch thistle, and puncture vine were also treated using this funding.



*Steptoe Valley WMA*

### **Carson Lake and Pasture Vegetation Management**

In the fall of 2018 and spring of 2019, approximately \$2,500 was spent on chemicals to control invasive plant species at the Carson Lake and Pasture property managed by NDOW. The fall treatments targeted saltcedar (also referred to as tamarisk), and emergent vegetation. In the spring of 2019, tall white top and Canada thistle were the focus of weed control efforts. By the end of FY19 a total of 400 acres of invasive and emergent plant species will have been treated.

### **Mason Valley WMA Saltcedar Treatment**

Saltcedar (also referred to as tamarisk) has expanded into the eastern pond areas on the Mason Valley WMA. This invasive species uses large amounts of water and deposits salt in and on nearby soil, thus preventing other plants from growing. During the winter of 2019, the Mason Valley Conservation District was contracted to follow up on and re-treat 2018 saltcedar treatments and to treat new areas. The re-treatments took place on the upper and lower Gadwall units. New treatments took place on the Shoveler, Mallard, and Redhead units where saltcedar was treated using cut stump methods. A total of \$15,000 was spent on the 2019 treatments.



*Saltcedar (or tamarisk); photo by S. Dewey, Utah State University*

## Proposed Duck Stamp Projects for State Fiscal Year 2020

Title of Proposed Project	Project Manager	\$ Requested from Duck Stamp Account	Other Funding Sources (in-kind contributions not quantified)
Assessing Avian Nest Success at Carson Lake	Russell Woolstenhulme	\$45,000	USFWS providing \$5,000 annually in in-kind services; NDOW's Federal Game Management Grant to pay for NDOW personnel costs
Geo-Tube Dams for Regulating Water at Carson Lake	Isaac Metcalf	\$22,500	NDOW's Federal WMA Grant (\$27,500) plus the grant will also pay for NDOW personnel costs
Ducks Unlimited Wetlands Conservation Support	Mike Zahradka	\$10,000	N/A
Overton WMA Ponds Fence Project	Bennie Vann	\$15,000	NDOW's Habitat Conservation Fee Account (\$15,000); NDOW's Federal WMA Grant to pay for NDOW personnel costs
Mason Valley WMA Waterfowl Habitat Enhancement	Isaac Metcalf	\$15,000	NDOW personnel costs to be covered by NDOW's Federal WMA Grant
Eastern WMA Complex Weed Control	Adam Henriod	\$10,000	NDOW's Upland Game Bird Stamp Account (\$10,000); NDOW's Habitat Conservation Fee Account (\$10,000); Nevada Dept. of Agriculture (\$25,000)
<b>Totals</b>		<b>\$117,500</b>	<b>\$87,500</b>



## Duck Stamp Account Budget Status

Balance in the Account at Start of FY 2019	\$ 314,558
Plus Estimated Revenue Accrued During FY 2019	\$ 90,082
Less Estimated Total FY 2019 Expenditures	(\$ 125,000)
Less Estimated Administrative Costs (10% of Revenue)	(\$ 9,008)
Estimated Balance at End of FY 2019 / Start of FY 2020	\$ 270,632
Plus Estimated Revenue to be Accrued During FY 2020	\$ 90,082
Less Estimated Administrative Costs (10% of Revenue)	(\$ 9,008)
Less Proposed New Project FY 2020 Expenditures	(\$ 117,500)
Estimated Balance at End of FY 2020	\$ 234,206

Notes: The budget information in this table is preliminary and subject to change. The amount of Duck Stamp revenue accrued during FY 2019 was not available when this report was prepared; therefore, the FY 2018 revenue number was used for both FY 2019 and 2020.





## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title: Assessing Avian Nest Success at Carson Lake**

**Special Reserve Account(s) that Would Fund this Project:** Duck Stamp

**NDOW Project Manager (PM):** Russell Woolstenhulme

**Funds Requested from Each Special Reserve Account:** \$45,000 for FY20.

A similar amount will be requested for each of the following two fiscal years (see the note in the next section regarding the pursuit of additional funding sources).

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

In-kind from USFWS \$5,000 annually for total of \$15,000 over 3 years. Additional funding sources are being pursued for FY21 and 22, including Federal grant dollars, Suisun Marsh-related funding from California Department of Water Resources, and the Wildlife Heritage Program.

**Total Project Cost Not Including In-Kind Donations:** \$45,000 for FY20

**Total Project Cost Including In-Kind Donations (if applicable):** \$50,000 for FY20

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved**

To determine nest success of migratory birds (waterfowl, shorebirds, wading birds) at Carson Lake and Pasture (CL&P) prior to the proposed acquisition of the property by NDOW. Additionally, we will compare CL&P to other wetlands (Incline Wetlands, Douglas County) to establish a baseline for both. This work will provide base line data for wildlife values prior to being acquired and managed by NDOW.

The base line data will facilitate NDOW's post-acquisition assessments of habitat improvements at a future time. Comparison with the control wetlands will help asses if any changes are a result of habitat manipulation or are due to other environmental conditions.

#### **II. Project Location including County (include a map if available):**

Carson Lake and Pasture, Churchill County and Incline Wetlands, Douglas County.

**III. Land Status: Private or Public?**

Public

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)** Currently the U.S. Bureau of Reclamation and City of Incline Village.

**V. UTM Coordinates if Known:**

**VI. Project Approach Including Tasks to be Accomplished and Target Species. Also Include Acres to be Treated or Restored or Any Other Measurable Factors:**

This project will establish a monitoring program of nesting migratory waterbirds (waterfowl, shorebirds, wading birds) from March through June of each project year of a three-year study. The primary goal is to establish a base line set of data for Carson Lake & Pasture to determine numbers of nesting migratory waterbirds and determine nest success rates. The Incline Village wetlands will be used as a control site so that any differences in subsequent data can be attributed to habitat related improvements and not to other environmental factors.

The work plan includes banding, nest searching, and nest monitoring. This work will be accomplished by a Master's student from University of Nevada, and two seasonal technicians with oversight from NDOW and USFWS biologists. Birds will be located through ground searches; nesting birds will be captured with standard netting techniques and banded with appropriate USGS migratory bird bands. Nest monitoring will be accomplished by both trail cameras operated on known nest sites and by nest visitation.

**VII. Describe the Beneficial Effects of the Project, How they Will be Measured and Describe Your Monitoring Plan:**

This project aims to provide baseline information on migratory bird nest success prior to NDOW acquisition of Carson Lake and Pasture while also comparing to a control site at the Incline Wetlands in the Carson Valley. This information will be used for comparison at some time after acquisition of Carson Lake to assess success of NDOW management of the area. This information would also be needed by the Suisun Marsh-related work being conducted in California since many of the birds nesting in the Carson Lake and Pasture area migrate to the Suisun Marsh. As noted above, NDOW and the USFWS are pursuing funding from the Suisun Marsh program.

**VIII. Project Schedule (including start and end dates and major milestones):**

The start date will be approximately late April 2020 through July 2021 with field work occurring in the months of April through July each year.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project will help inform management plans for Carson Lake and Pasture in regards to managing for nesting habitat for migratory birds.

**X. NEPA Compliance, Archeological Clearances, or other Authorizations that are Needed Before this Project Can be Completed and Their Status:**

None

## *Project Costs, Funding and Contracting*

**XI. Cost Summary (briefly describe the project's major types of spending):**

Most of the project's cost will be to support a Master's student at UNR (i.e., to cover their stipend and tuition). Additional funding will be used to hire two technicians, and pay for travel expenses, and supplies.

**XII. Is this Project Going to Continue After FY20?** Yes  No

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project's Lifespan:** \$49,400 for FY21, and \$47,900 for FY22

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes  No

**XVI. If Yes, Which Federal Grant Would the Matching Funds Be Used For?**

The Federal Game Management Grant

**XVII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates** \$45,150 for FY20, \$49,400 for FY21, and \$47,900 for FY22, Faculty at UNR to be determined, start January 2020 and end December 2022. These numbers include a 5% indirect cost to Nevada Waterfowl Association (NWA), with whom a contract will be entered into, and do not include a \$5,000 /year in-kind match from USFWS.

## Project Cost Breakdown

Please provide a breakdown of the project's *total costs over the life of the project* in the table below. If your project is a multi-year project, define the total to be spent during each fiscal year in your response to question XIV on the previous page. Only include in-kind contributions under item 7 in the table below. Any NDOW personnel or travel expenses should be covered by funding sources other than the Wildlife Reserve Accounts.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Wildlife Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel*		
B. Other Personnel (UNR grad student & 2 technicians for 3 year study)	\$ 118,200.00	
C. Total Personnel Costs	\$ 118,200.00	\$ -
3. Travel Costs*		
A. UNR Presenting Results at Conference	\$ 1,500.00	
B. Mileage		
C. Total Travel Costs	\$ 1,500.00	\$ -
4. Equipment		
A. Trail cameras, netting equipment and Misc	\$ 19,000.00	
B.		
C. Total Equipment Costs	\$ 19,000.00	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous Costs		
A.		
B. Indirect to NWA 5%	\$ 3,750.00	
C.		
D.		
F. Total Miscellaneous Costs	\$ 3,750.00	\$ -
7. In-Kind Contributions		
A. USFWS Personnel		\$ 15,000.00
B.		
C. Total In-Kind Contributions		\$ 15,000.00
Subtotals	\$ 142,450.00	\$ 15,000.00
Total Project Costs	\$	157,450.00

\* NDOW personnel and travel costs should be covered by funding sources other than the Wildlife Reserve Accounts



## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Geo-Tube Dams for Regulating Water at Carson Lake and Pasture  
 Project Manager: Isaac Metcalf Phone: 775-463-2741 Email imetcalf@ndow.org  
 Project Monitor: Mike Zahradka Start Date: 7/1/2019  
 Implementation Lead Nevada Department of Wildlife End Date: 6/30/2020  
 Partners: Nevada Department of Wildlife  
 Project Category: Habitat Restoration  
 Project Category: Riparian, Spring or Meadow Habitat Improvement  
 Project Actions:  
 Priority Resource: Small game  
 Priority Species: Waterfowl  
 County Location: Churchill  
 General Location: Carson Lake and Pasture in Churchill County

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
NDOW Duck Stamp	\$22,500		
USFWS Wildlife Restoration Grant	\$27,500		
<b>Project Totals:</b>	<b>\$50,000</b>		

### *Project Proposal*

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

The purpose of this project is to stop water flowing from a levee breach and thus help prevent the shallow pond conditions that can facilitate the outbreak of botulism at one of the major ponds found at the Carson Lake property managed by NDOW. The shallow pond conditions are being created by a breach of the Sprig Unit Levee. Last summer and fall approximately 11,000 duck and shore bird mortalities were recorded at the Carson Lake ponds but the actual mortalities were likely significantly higher.

## *2. Project Approach and Tasks*

The Sprig Unit Levee was breached during the 2017 flooding. This component of the levee repair work at Carson Lake will isolate the Sprig Unit from the Sump Unit by installing 48" Geo Tube water dams at a location that will stop the flow of water into the Sump Unit Pond. This work will supplement the repair of six breaches of the Lott Freeway Levee that is being conducted this spring and being funded separately with NDOW's Federal WMA Grant. Mason Valley WMA staff will use Geo Tube barriers to stop the flow of water from the Freeway Levee into a shallow pond. The Geo Tube dams are filled with water and serve as temporary dams until the levees can be repaired in a more permanent fashion. The sooner the levee breaches can be repaired the better because it will leave more time this summer and early fall for the shallow ponds that are receiving water from the breaches to evaporate before the botulism season begins in the fall.

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

By stopping the flow of water from levee breaches, NDOW can help minimize the risk of shallow pond conditions and thus reduce the chances of another large scale botulism outbreak that resulted in thousands of bird mortalities last fall and during other events in past years.

## *4. Project Schedule*

The Sump Unit repair work will take place in July as soon as Duck Stamp funding is available for FY20. The other levee repair work at Carson Lake (the Lott Freeway Levee repair) is taking place this spring and early summer with the use of Federal WMA Grant funds.

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

N/A

## *6. Monitoring Plan*

Weekly water depths will be measured along with monitoring of waterfowl and the effectiveness of the levee repair work.

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

Annual habitat maintenance and enhancement is identified in all of the current WMA Conceptual Management Plans. 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 (WMAs) by applying good science and best management practices through implementation of Comprehensive Management Plans on all WMA's (NDOW'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 WMAs (NDOW's Wetland Conservation Plan).

**Special Reserve Account Project Cost Estimate Table**

**Geo-Tube Dams for Regulating Water at**

**Name of Proposed Project:** Carson Lake & Pasture  
**Name of Proposed Project Manager:** Isaac Metcalf  
**Project ID:** 465

Please provide a breakdown of your project's costs in the table below. Only include costs for the upcoming fiscal year for which you are applying. Only include in-kind services under item 7. NDOW personnel and travel expenses may not be covered by any of our Special Reserve Accounts - you must use alternative funding sources to cover these types of costs.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel		
C. Total Personnel Costs	\$ -	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A. Geo Tube water dams, brackets, straps, & misc. supplies	\$ 22,500.00	
B.		
C.		
D. Total Materials Costs	\$ 22,500.00	\$ -
6. Miscellaneous		
A.		
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ -	\$ -
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 22,500.00	\$ -
<b>Total Project Costs</b>	\$	22,500.00





## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Ducks Unlimited Wetlands Conservation Support  
 Project Manager: Mike Zahradka Phone: 775-688-1563 Email mzahradka@ndow.org  
 Project Monitor: Mike Zahradka Start Date: 3/17/2020  
 Implementation Lead Ducks Unlimited End Date: 6/30/2020  
 Partners: Ducks Unlimited, Nevada Department of Wildlife  
 Project Category: Habitat Protection  
 Project Category: Conservation Easement  
 Project Actions:  
 Priority Resource: Small game  
 Priority Species: Waterfowl  
 County Location: Statewide  
 General Location: Alberta, Canada

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
NDOW Duck Stamp	\$10,000		
<b>Project Totals:</b>	<b>\$10,000</b>		

### *Project Proposal*

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

To help Ducks Unlimited (DU) protect, restore and enhance waterfowl habitat in the prairie potholes region of Alberta, Canada. This is very important breeding and nesting habitat for many of the waterfowl that travel to Nevada.

#### *2. Project Approach and Tasks*

DU has agreed to NDOW's request that the funds we donate be used on wetland enhancement projects in Alberta since banding data indicates that a fairly high percentage of waterfowl harvested in Nevada originate from that province. DU and its partners use the donations from NDOW and others to protect, restore and enhance wetlands in the prairie potholes region of Alberta. DU's partners in this region includes the Nature Conservancy of Canada, Wildlife Habitat Canada, the Alberta provincial government and the federal government of Canada. This work is part of the ongoing implementation of the North

American Waterfowl Management Plan.

*3. Anticipated Beneficial Effects of the Project*

Funds donated to DU are used to restore, enhance and protect waterfowl habitat in Alberta. In addition to directly benefiting waterfowl, this also indirectly benefits Nevada hunters by increasing or maintaining waterfowl populations in Nevada.

*4. Project Schedule*

This is an annual contribution to DU that uses the funds over the next year.

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

N/A

*6. Monitoring Plan*

DU monitors the results of their efforts to purchase conservation easements and restore wetlands. They also submit annual reports to NDOW that summarize the results of their work.

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

This funding, consistent with the North American Waterfowl Management Plan and the North American Wetlands Conservation Act, will assist in the enhancement and maintenance of wetland habitats in Canada. These wetlands provide important habitat for migratory waterfowl, which in turn, migrate and stopover in Nevada and increase hunting opportunities. Funding this type of work is also consistent with the following portion of NDOW's mission: "To protect, preserve, manage and restore wildlife and its habitat for their aesthetic, scientific, educational, recreational and economic benefits to citizens of Nevada and the United States".



## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Overton WMA Ponds Fence Project  
 Project Manager: Bennie Vann Phone: 702-397-2142 Email bvann@ndow.org  
 Project Monitor: Mike Zahradka Start Date: 9/30/2019  
 Implementation Lead Nevada Department of Wildlife End Date: 10/18/2019  
 Partners: Nevada Department of Wildlife, Nevada Division of Forestry  
 Project Category: Wildlife Population Protection or Enhancement  
 Project Category: Migration or Movement  
 Project Actions:  
 Priority Resource: Small game  
 Priority Species: Waterfowl  
 County Location: Clark  
 General Location: Pintail and Wilson Ponds at the Overton WMA

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
NDOW Duck Stamp	\$15,000		
NDOW Habitat Conservation Fee	\$15,000		
<b>Project Totals:</b>	<b>\$30,000</b>		

### *Project Proposal*

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

The Overton WMA spans approximately 18,500 acres and 1,500 of these acres are intensely managed. The proposed fence would encompass Pintail and Wilson ponds. In FY 2019, NDOW along with Ducks Unlimited teamed up to enhance the topography of these two ponds. Levees were improved, along with contouring of the pond bottoms to improve habitat for migrating waterfowl and shore birds. The fence would exclude trespass cattle and wild donkeys in the area. These animals make it difficult to manage habitat for the migrating waterfowl and shore birds. They graze off much of the vegetation that is beneficial to the wildlife and damage the levees and swales that were incorporated into the construction of the ponds. The cattle also pose a safety hazard to area users.

## *2. Project Approach and Tasks*

NDOW will purchase all necessary fencing supplies and remove vegetation needed for the fence alignment. NDF Conservation Crews will be contracted for 15 days during FY20 to install approximately 12,000 feet of perimeter fencing. The entire project should take 4 weeks to complete.

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

Completion of this project will play a crucial role in helping the Overton WMA staff maintain and protect crucial habitats on the area. Habitats and wildlife food plots will be protected from trespass cattle and donkeys with the perimeter fence. Area users will also be safer with the trespass cows excluded. Fence line effectiveness will be measured by the number of trespass cows and donkeys present on the property as well as monitoring the adjacent sections of property they occupy.

## *4. Project Schedule*

The fence construction will begin once funding has been secured, fence supplies are purchased, fence alignment has been cleared and a contract with NDF has been signed. The entire project is expected to take 4 weeks to finish. The work should take place starting in late September, 2019.

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

None

## *6. Monitoring Plan*

WMA staff will monitor the durability and effectiveness of the new fence and make any necessary repairs over time.

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

In compliance with Nevada Board of Wildlife Commission Policy 66, the primary management emphasis at the Overton WMA is the production of quality waterfowl habitat and the provision of hunting opportunities. Installation of perimeter fencing around these ponds will greatly enhance the chances of NDOW meeting the intent of that policy. This project also will help achieve the following goal from NDOW's Comprehensive Strategic Plan updated in 2014: "Protect and enhance migrating and local waterfowl and dove habitat;" as well as the following related objectives from the same document: "Provide adequate feeding and resting habitats for ducks and geese during the migration and wintering periods" and "Maintain and manage waterfowl habitats at the OWMA ponds and seasonal wetlands more efficiently, thus saving water and stretching limited water supplies as much as possible".

**Wildlife Reserve Account Project Cost Estimate Table**

**Name of Proposed Project:** Overton WMA Ponds Fence Project  
**Name of Proposed Project Manager:** Bennie Vann  
**Project ID:** 442

Please provide a breakdown of your project's costs in the table below. Only include costs for the upcoming fiscal year for which you are applying. Only include in-kind services under item 7. NDOW personnel and travel expenses may not be covered by any of our Special Reserve Accounts - you must use alternative funding sources to cover these types of costs.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel - NDF Crew	\$ 15,000.00	
C. Total Personnel Costs	\$ 15,000.00	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A. Fence supplies	\$ 15,000.00	
B.		
C.		
D. Total Materials Costs	\$ 15,000.00	\$ -
6. Miscellaneous		
A.		
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ -	\$ -
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 30,000.00	\$ -
Total Project Costs	\$	\$ 30,000.00









## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Mason Valley WMA Waterfowl Habitat Enhancement  
 Project Manager: Isaac Metcalf Phone: 775-463-2741 Email imetcalf@ndow.org  
 Project Monitor: Mike Zahradka Start Date: 7/1/2019  
 Implementation Lead Nevada Department of Wildlife End Date: 6/30/2020  
 Partners: Nevada Department of Wildlife  
 Project Category: Habitat Restoration  
 Project Category: Riparian, Spring or Meadow Habitat Improvement  
 Project Actions: Replanting vegetation  
 Priority Resource: Small game  
 Priority Species: Waterfowl  
 County Location: Lyon  
 General Location: Waterfowl ponds on the Mason Valley Wildlife Management Area

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
NDOW Duck Stamp	\$15,000		
<b>Project Totals:</b>	<b>\$15,000</b>		

### *Project Proposal*

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

The purpose of this project is to enhance forage and cover for migrating waterfowl and shore birds. This project will increase the amount of available forage for migrating waterfowl and shorebirds after prescribed burn and mechanical treatments are completed at the Mason Valley WMA ponds.

#### *2. Project Approach and Tasks*

Once water levels recede and prescribed burning and mechanical treatments are completed, the Mason Valley crew will drill plant a wetland-specific seed mix along islands and bare ground within the ponds. The ponds will be flooded periodically throughout the summer to establish germination of moist soil vegetation. The pond will be filled in the fall for migrating waterfowl and hunter access. Funds from the Duck Stamp account will be used to purchase a seed mix appropriate for wetlands while NDOW's Federal

WMA Grant will be used to pay for NDOW staff time needed to implement the project.

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

Waterfowl and shore birds will be the primary beneficiaries. Mule deer and passerines will also benefit with the increased forage availability. Non-consumptive and consumptive WMA users will also benefit with more opportunities for wildlife viewing and hunting.

### *4. Project Schedule*

This is an ongoing, annual project with pond treatments and seeding taking place in the spring and summer. The ponds are then flooded in the fall.

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

Not applicable

### *6. Monitoring Plan*

Monitoring will be conducted by visual inspection of sprouting vegetation. Waterfowl use is monitored through survey cards and harvest numbers.

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

Annual habitat maintenance and enhancement is identified in all of the current WMA Conceptual Management Plans. 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 (WMAs) by applying good science and best management practices through implementation of Comprehensive Management Plans on all WMA's (from NDOW's Comprehensive Strategic Plan). Achieve an overall goal of no net loss of wetland area or function and the long-term goal is to enhance and increase wetland quantity and quality within the WMAs (NDOW's Wetland Conservation Plan).



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title: Eastern WMA Complex Weed Control**

**Special Reserve Account(s) that Would Fund this Project:** Habitat Conservation Fee, Duck Stamp, Upland Game Bird Stamp

**NDOW Project Manager (PM):** Adam Henriod

**Funds Requested from Each Special Reserve Account:** \$10,000 Habitat Conservation Fee, \$10,000 Duck Stamp, \$10,000 Upland Game Bird Stamp

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

A Nevada Department of Agriculture (NDA) grant awarded to Tri-County Weed Control: This grant will be used on the Steptoe Valley WMA and will match 50:50 all (in-kind included) dollars spent on weed control at Steptoe Valley WMA. It is estimated this grant will contribute close to \$25,000 towards weed removal.

**Total Project Cost Not Including In-Kind Donations:** \$55,000

**Total Project Cost Including In-Kind Donations (if applicable):** \$55,000

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved**

NDOW is mandated by state law to control listed noxious weeds found on its property. Removal of noxious and undesirable weeds improves appearance, public access, limits the spread of these weeds to other areas and enhances wildlife habitat. The goal of this project is to remove noxious/invasive weeds such as Russian knapweed, hoary cress, perennial pepperweed, phragmites and Canada thistle found on the Steptoe Valley, Wayne E. Kirch and Key Pittman WMAs. This will be accomplished through the application of herbicides to noxious and other invasive weeds in upland areas, riparian areas, parking lots and right of ways.

WMA staff has engaged heavily in efforts to eradicate invasive vegetation on these properties; however, the magnitude of weed infestations currently exceeds the staff's ability to provide the treatments needed to have a long-term impact. This project seeks reserve account funding for additional resources needed to apply herbicide on the Kirch, Key Pittman and Steptoe Valley WMAs.

**II. Project Location including County (include a map if available):**

The Steptoe Valley WMA is located in White Pine County. It is composed of 12,806 acres. Comins Lake and 13 seasonal ponds are located on the property. Wayne E. Kirch Wildlife Management Area is located in the White River Valley in northeastern Nye County. The Kirch WMA is composed of a total of 14,815 acres, including five reservoirs and five wetland impoundments. Key Pittman WMA is located in Lincoln County with two reservoirs and two wetland impoundments within the 1,332 acres managed by NDOW.

**III. Land Status: Private or Public?**

Public

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)**

State of Nevada

**V. UTM Coordinates if Known:**

N/A

**VI. Project Approach Including Tasks to be Accomplished and Target Species. Also Include Acres to be Treated or Restored or Any Other Measurable Factors:**

Awarded funds will be used to purchase herbicides and hire contract labor to maintain and enhance current weed control efforts on NDOW-managed WMAs. In order to address increasing issues with weeds, and given the substantial duties of NDOW staff related to tasks other than fighting weeds, we are in need of additional monies to contract out additional weed spraying to improve the effectiveness of weed control efforts. Tri-County Weed Control is most likely to be contracted to conduct the spraying.

Examples of specific tasks to be accomplished by this project are provided below.

A. Perennial pepperweed (*Lepidium lotifolium*), and hoary cress (*Cardaria draba*) will be treated in the spring and summer of 2020 by applying appropriate herbicides from ATV, truck, and backpack sprayers. The chemicals chosen for control of these species will be determined by the characteristics of the site and the life stage of the plant; all chemicals are applied according to their labels.

B. Ditches, water control structures, boating access points, parking lots and rights-of-way will be treated, as needed, in the summer of 2020 by applying glyphosate herbicide from ATV, truck, and backpack sprayers. Control of undesirable vegetation in ditches and water control structures is essential for water delivery to reservoirs, wetland impoundments, and irrigation of food plots.

C. Russian knapweed (*Acroptilon repens*), and Canada thistle (*Cirsium arvense*) will be treated in the fall of 2019 and spring of 2020 by applying appropriate herbicides from ATV, truck, and backpack sprayers.

D. Vegetation on wetland impoundments and reservoirs will be treated, as needed, with aquatic-approved herbicides. Primary focus will be on phragmites (*Phragmites australis*) removal on the Key Pittman WMA. Treatments on reservoirs will be completed using a boat-mounted sprayer; wetland impoundments will be treated with an ATV sprayer. Treatment of emergent vegetation in these areas will improve feeding, resting, nesting, and brood-rearing habitat for waterfowl.

**VII. Describe the Beneficial Effects of the Project, How They Will be Measured and Describe Your Monitoring Plan:**

There will be a major reduction in noxious and other types of invasive weed species at the treated areas, thus improving the quality of wildlife habitats.

Monitoring through yearly inspections will determine the effectiveness of treatments. Treated sites will be evaluated after application of herbicides to determine the effectiveness of the timing, method and chemicals chosen for the treatment. Effective treatments will show a significant die-off of targeted vegetation after treatment and reduced regrowth the following growing season. The vegetation control will improve habitat values and public access.

**VIII. Project Schedule (including start and end dates and major milestones):**

This project is an ongoing, yearly habitat management activity. Herbicide treatments to vegetation on the WMAs will primarily occur in the late summer and fall of 2019 and the spring and summer of 2020. Please see the proposed tasks above for the timing of treatment for each type of targeted vegetation.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This program certainly falls within NDOW's general goal of maintaining and enhancing wildlife habitats. More specifically, the Conceptual Management Plans for the WMAs all contain goals and objectives such as the following: "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 (WMAs) by applying good science and best management practices through implementation of Comprehensive Management Plans."

**X. NEPA Compliance, Archeological Clearances, or other Authorizations that are Needed Before this Project Can be Completed and Their Status:**

None

*Project Costs, Funding and Contracting*

**XI. Cost Summary (briefly describe the project's major types of spending):**

All funds will be used to purchase herbicide and to contract for weed spraying with Tri-County Weed Control.

**XII. Is this Project Going to Continue After FY20? Yes  No**

**XIII. If Yes, is this Going to be an Annual, Recurring Project? Yes  No**

**XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project's Lifespan:**

This project will seek \$30,000 every fiscal year until weed treatment on the Key Pittman, Wayne E. Kirch and Steptoe Valley WMAs can be adequately handled by WMA staff.

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes  No

**XVI. If Yes, Which Federal Grant Would the Matching Funds Be Used For?**

NDOW's WMA Federal Grant

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

Inter-local Agreement #19-06 is currently in place and will used to complete this project.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

The current contract with Tri-County Weed Control was approved in October 2018 and will expire on June 30, 2020. The total cost of the contract was not to exceed \$120,000. Approximately \$92,000 will be available on the contract at the close of the current fiscal year.

## Project Cost Breakdown

Please provide a breakdown of the project's *total costs over the life of the project* in the table below. If your project is a multi-year project, define the total to be spent during each fiscal year in your response to question XIV on the previous page. Only include in-kind contributions under item 7 in the table below. Any NDOW personnel or travel expenses should be covered by funding sources other than the Wildlife Reserve Accounts.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel*		
B. Other Personnel		
C. Total Personnel Costs	\$ -	\$ -
3. Travel Costs*		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A. Herbicide	\$ 4,000.00	
B.		
C.		
D. Total Materials Costs	\$ 4,000.00	\$ -
6. Miscellaneous Costs		
A. Tri-County Weed Control contract for weed spraying	\$ 26,000.00	\$ 25,000.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 26,000.00	\$ 25,000.00
7. In-Kind Contributions		
A.		
B.		
C. Total In-Kind Contributions	\$ -	\$ -
Subtotals	\$ 30,000.00	\$ 25,000.00
Total Project Costs	\$	55,000.00



## Churchill County Agenda Report

**Date Submitted:** June 11, 2019

**Agenda Item #:** Appointments -  
**Meeting Date Requested:** June 19,  
2019

**To:** Advisory Board to Manage Wildlife

**From:**

**Subject Title:** Consideration and possible action re: Fiscal Year 2020 Heritage Project  
Proposals for up to \$979,702.65 for projects submitted for FY 2020 funding  
from the Wildlife Heritage account..

**Type of Action Requested:** Accept

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** motion to approve the recommendations from the committee to approve up to \$979,702.65 for projects submitted for FY 20 funding from the Wildlife Heritage account.

**Discussion:** The Nevada Board of Wildlife Commissioners will hear recommendations from the committee and may take action to approve up to \$979,702.65 for projects submitted for FY 20 funding from the Wildlife Heritage account. The preliminary funding recommendations from the committee are:

- Bighorn Sheep Capture, Transplant, and Monitoring - Project #20-01 (\$100,000).
- Wildfire-Related Restoration and Seed Purchase - Project #20-02 (\$100,000).
- South Mountains Habitat Restoration - Project #20-03 (\$75,000).
- Toole Springs Lek Juniper Removal - Project #20-04 (\$65,000).
- Egan Johnson Basin Restoration - Project #20-05 (\$70,000).
- North Cave Valley Habitat Restoration - Project #20-06 (460,157.65).
- Prioritizing and Protecting Natural Water Sources - Project #20-07 (\$50,000).
- Monitoring Moose Expansion in Nevada - Project #20-08 (\$28,000).
- Big Game Survey Tool - Project #20-09 (\$70,000).
- Maximizing the Effectiveness of Common Raven Removal - Project #20-10 (\$70,000).
- Survey and Maintenance of Existing Big Game Water Developments - Project #20-11 (\$36,000).
- Staheli Chaining Maintenance Project - Project #20-12 (\$75,000).
- Blacktop Apron Guzzler Upgrade - Project #20-13 (\$21,400).

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# Churchill County Agenda Report

- Mormon #3 Prospect Guzzler Upgrade - Project #20-14 (\$21,615).
- Douglas Canyon PJ Removal Project - Project #20-15 (\$50,000).
- Bighorn Disease Susceptibility Analysis - Project #20-16 (\$62,530).
- Steptoe Valley Shooting Complex - Project #20-17 (not recommended for funding)
- Lincoln County Mule Deer Collaring Project - Project #20-18 (\$25,000).

These recommendations may change at the 8:00 AM, June 21, 2019 Heritage Committee meeting.

**Alternatives:** Deny approval or make other recommendations.

**Fiscal Impact:** Up to \$979,702.65.

**Explanation of Impact:** If all projects as listed are approved, \$979,702.65 will be funded from the state's Wildlife Heritage account.

**Funding Source:** Nevada Wildlife Heritage Account.

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

Date: June 12, 2019

\_\_\_\_\_  
Peggy A. Hughes, Member

Date: June 12, 2019

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None	_____	<b>Aye: 0</b>
2) None	_____	<b>Nay: 0</b>

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# Churchill County Agenda Report

(Vote Recorded By)

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

**2020 Heritage Tag Vendor Proposal & Fundraising Summary  
Deadline – April 15, 2019**

<b>Vendor Name</b>	<b>Function Date</b>	<b>Function and Location</b>	<b>Requested Species Heritage Tag to Auction</b>
WHIN-Wildlife & Habitat Improvement of Nevada	March 7, 2020	Annual Banquet Gold Coast Hotel & Casino Las Vegas, Nevada	1 - Mule Deer 1 - Wild Turkey
Nevada Bighorns Unlimited – Reno Chapter	April 3, 2020	40 <sup>th</sup> Annual Banquet Peppermill Casino Reno, Nevada	1 - Mule Deer 1 - Desert Bighorn Sheep 1 - California Bighorn Sheep 1 - Rocky Mountain Elk 1 - Pronghorn Antelope
Meadow Valley Wildlife Unlimited	March 21, 2020	Annual Banquet Caliente Volunteer Fire Station Caliente, Nevada	1 - Pronghorn Antelope 1 - Rocky Mountain Elk 1 - Wild Turkey 1 - Mule Deer
Nevada Waterfowl Association	May 2020	Place - TBA	1 - Pronghorn Antelope
Mule Deer Foundation	February 14, 2020	Western Hunting & Conservation Expo Salt Lake Palace Convention Center Salt Lake City, Utah	1 - Mule Deer
Pershing Co. Chukars Unlimited	September 21, 2019	20 <sup>th</sup> Annual Banquet Pershing Co. Community Center Lovelock, Nevada	1 - Pronghorn Antelope
Wild Sheep Foundation	January 16 – 18, 2020	43 <sup>rd</sup> Annual WSF Convention Tuscany Ballroom, Peppermill Casino Reno, Nevada	1 - Desert Bighorn Sheep 1 - California Bighorn Sheep 1 - Rocky Mountain Elk 1 - Pronghorn Antelope
Nevada Bighorns Unlimited – Fallon Chapter	February 22, 2020	Annual Banquet City-County Gym Fallon, Nevada	1 - Desert Bighorn Sheep 1 - California Bighorn Sheep
Safari Club International – Northern Nevada Chapter	February 29, 2020	25 <sup>th</sup> Annual Banquet Peppermill Hotel & Casino Reno, Nevada	1 - Mule Deer 1 - Rocky Mountain Elk
Las Vegas Woods & Waters	February 8, 2020	29 <sup>th</sup> Annual Sportsman’s Banquet Gold Coast Hotel & Casino Las Vegas, Nevada	1 - Wild Turkey 1 - Mule Deer 1 – Pronghorn Antelope 1 – Rocky Mountain Elk
Carson Valley Chukar Club	March 7, 2020	Annual Banquet Carson Valley Fairgrounds Gardnerville, Nevada	1 - Wild Turkey 1 – Pronghorn Antelope
Wild Sheep Foundation California Chapter	May 2, 2020	Annual Banquet Double Tree Hotel Sacramento California	1 - Wild Turkey 1 - Mule Deer 1 – Pronghorn Antelope 1 – Rocky Mountain Elk
Elko Bighorns Unlimited	February 8, 2020	Annual Banquet Elko Convention Center Elko, Nevada	1 – California Bighorn Sheep

**Late Proposals: None**



## Churchill County Agenda Report

**Date Submitted:** June 11, 2019

**Agenda Item #:** Appointments -  
**Meeting Date Requested:** June 19,  
2019

**To:** Advisory Board to Manage Wildlife

**From:**

**Subject Title:** Consideration and possible action re: Upland Game Bird Stamp request to approve up to \$295,100 for projects submitted for Fiscal Year 2020 funding from the Upland Game Bird Stamp account..

**Type of Action Requested:** Accept

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** motion to approve the Upland Game Bird Stamp request for up to \$295,100 for projects submitted for FY 20 funding from the Upland Game Bird Stamp account.

**Discussion:** The Nevada Board of Wildlife Commission will review and may take action to approve up to \$295,100 for projects submitted for FY 20 funding from the Upland Game Bird Stamp account. The specific Upland Game Bird Stamp projects that may be approved are:

- Greater Sage-Grouse Statewide Monitoring (\$48,710).
- Upland Game Bird Translocation and Monitoring (\$13,640).
- Dusky Grouse Ecology and Management in Nevada (\$20,000).
- Monitoring the Effects of Landscape-Level Treatments on Greater Sage-Grouse within the Desatoya Mountains (\$18,000).
- Estimating Sage-Grouse Vital Rates within Nevada's Most Novel Habitats (\$22,500).
- Effects of Conventional Raven Control and Wildfire on Greater Sage-Grouse within the Virginia Mountains (\$22,500).
- Monitoring Greater Sage-Grouse and Habitat Post-Martin Fire (\$25,000).
- Bi-State Sage Grouse Coordinator (\$5,000).
- Columbian Sharp-Tailed Grouse Restoration Project - Population Modeling and Publications (\$22,250).
- Response of Greater Sage-Grouse to Vegetation Treatments in South Cave, Hamlin, and Steptoe Valleys (\$7,500).
- Wildfire and Geomorphology Effects on Riparian Habitats and Related Restoration Implications (\$10,000).

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# Churchill County Agenda Report

- A Framework for Restoring and Conserving Great Basin Wet Meadows and Riparian Ecosystems (\$10,000).
- Eastern WMA Complex Weed Control (\$10,000).
- Post-Fire Upland Habitat Restoration - Tule Springs (\$12,500).
- Post-Fire Upland Habitat Restoration - Kane Springs (\$12,500).
- Quinn River Valley Habitat Enhancement - Vanderhoek Property (\$10,000).

**Alternatives:** Not approve the recommendations and make other suggestions.

**Fiscal Impact:** Up to \$295,100 for all projects.

**Explanation of Impact:** If all projects are approved, \$295,100 will be funded from the Upland Game Bird Stamp account.

**Funding Source:** Nevada Upland Game Bird account.

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

Date: June 12, 2019

\_\_\_\_\_  
Peggy A. Hughes, Member

Date: June 12, 2019

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None	_____	<b>Aye: 0</b>
2) None	_____	<b>Nay: 0</b>

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



## Churchill County Agenda Report

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# Upland Game Bird Stamp Program Report

Nevada Department of Wildlife

June 2019



*Male Dusky Grouse; photo by S. Farnsworth, Utah State University*



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# Progress Report on Upland Game Bird Stamp Projects Funded in FY 2019

## Greater Sage-grouse Statewide Monitoring

The accomplishments of this project are summarized below.

### Lek Count Technicians

Three seasonal sage-grouse lek count technicians were employed from March through May of 2019 to assist Nevada Department of Wildlife (NDOW) Game Division biologists. One technician was assigned to the Western Region through Manpower and two technicians were assigned to the Eastern Region. Lek counts normally continue through May of each year, so final data summarization was not possible for this report.

### Aerial Lek Survey

Aerial lek surveys using a helicopter were performed throughout portions of the sage-grouse range in Nevada during the spring of 2019. Contracted services were not used this year as our own internal flight services to perform the surveys were used. Aerial lek surveys were conducted in the following areas:

- 1) Elko County including the Owyhee Desert, O'Neil Basin, Gollaher Mountain, East Humboldt and Ruby Mountains (west side), and the Pinyon Range
- 2) Eureka County including the Cortez Range, Roberts Creek Mountains and the Diamond Mountains;
- 3) Humboldt County including the Black Rock, Santa Rosa, Montana Mountains, and Pine Forest Range
- 4) Northern Nye County including the Monitor and Toiyabe Mountain Ranges;
- 5) Northern Washoe County including the Sheldon National Wildlife Refuge;

There were a number of surveys that were conducted in conjunction with spring deer surveys (Humboldt and Nye County) for efficiency purposes. Complete data were not available to summarize for this report; however, the data will be placed into the Nevada Sage-grouse Lek Database by June 30, 2019.

### Fixed Wing Infrared Surveys

Owyhee Air Research, Inc. (OAR) conducted a multi-point Aerial Infrared (AIR) mission for greater sage grouse (*Centrocercus urophasianus*) lek search and survey. Surveys began on March 25 and concluded on April 4, 2019. The survey was conducted in seven (7) distinct survey plots throughout the state. Survey plots were designated as either 'search' or 'survey' as designated by NDOW personnel. Some survey plots were characterized by many known lekking locations within a given geographic region. In these areas, known lekking locations were surveyed for sage grouse activity up to and including 1.5 miles in all directions of the provided lek site. No search patterns were initiated to find potential new leks within these polygons. Search plots that were

characterized by relatively few known lekking locations in a larger geographic region were surveyed for current activity and search patterns were initiated to locate and document possible new leks. Search patterns consisted of flying linear transects spaced 400 meters (0.25 miles) apart. Transects were flown at an approximate altitude of 1500 ft above ground level (AGL), at an approximate speed of 100 mph ensuring 100% AIR coverage of the search area. All flights were conducted in the early morning hours beginning approximately 45 minutes before sunrise and concluding approximately 1.5 – 2 hours after sunrise.

### Results

During the course of the survey, 98 known leks were surveyed with 24 of those being active with males in attendance. A total of 382 males were observed on the active leks. Six potentially new leks were discovered during the survey. A summary of survey results is provided in Table 1.

*Table 1. Fixed-wing infrared lek search and survey results conducted during the spring of 2019.*

<b>Survey Area</b>	<b>Plot Size (ac.)</b>	<b>Known Leks Surveyed</b>	<b>New Leks</b>	<b>Active Leks</b>	<b>Number Observed</b>
Santa Rosa (east)	45,600	6	1	3	29
Santa Rosa (west)	74,743	22	-	3	31
Montana Mountains	54,155	36	-	5	90
Nut Mountain	27,367	5	1	1	49
Black Rock	55,693	18	-	6	42
Pine Nut	47,394	6	1	1	14
Reese River	26,589	5	1	2	57
North Monitor Valley	25,190	3	2	3	70
Totals:	356,731	98	6	24	382

### Project Highlights

#### *Nut Mountain*

This area was designated as a “search” area by NDOW staff with five (5) previously identified leks included in the search. The area was searched using the transecting method described above during a single flight on the morning of 3/30/2019. A new lek, located in the southwestern corner of the survey area was discovered by an OAR flight crew during the 2018 survey. This lek was active and re-detected by OAR flight crews on the present survey with a total of 45 grouse in attendance.

#### *Reese River*

Sage-grouse were detected on Mitchell Canyon, which was active in 2018, and Deep Canyon which was last listed as active in 1972. Fifty-one grouse were observed on the Deep Canyon lek along what appeared to be an old road or mowing (figure 1). A possible new lek was detected between the two known Spanish Ranch Canyon leks and may be a satellite lek.



Figure 1. Infrared video view of the Deep Canyon Lek in Reese River Valley showing a segment of displaying males (n=5) along a two-track dirt road and associated mow strip.

#### North Monitor

Of the three known leks, all were in the northern portion of the search area, but only one, Grimes Hill 1, had grouse on it at the time of the flight. A new lek location was detected in the southern portion of the search area. One group of grouse (n = 34) were lekking in a clearing on the west bank of the probable channel remaining from a dried-up creek bed. Another group of grouse (n=18) were observed lekking in slightly thicker cover on the east side of the channel, approximately 0.1 miles from the larger group.

#### Discussion

Detection rates in the Montana Mountains and other high elevation lek sites during this survey were far lower than expected and significantly lower than the previous year's survey. The primary cause for reduced detectability is believed to be reduced lek attendance due to persistent snow levels on popular lekking grounds. Northern Nevada and much of the great basin experienced higher than average snow accumulate in the high elevations during the 2018/2019 winter and much of this snow remained at the time of the survey flights. It is possible that the reduced count seen in this year's survey can partially be explained by decreased migratory movement of birds from their wintering grounds into breeding grounds due to the persistent snow cover. Connelly et al. (2011) describes grouse seasonal movements as highly variable with peak migratory movement for sage grouse from wintering to breeding grounds occurring between mid-February and mid-March. It is possible environmental factors play an undermined role in the timing of these movements. Personal communication with NDOW personnel indicated that at the time of this survey, some grouse were still being detected on the wintering grounds.

Given the persistence of the snow cover in the higher elevations, and the fact that this survey was conducted relatively early in the lekking season. It is possible that some grouse are remaining in wintering grounds longer than normal and that peak lek attendance for the present season has not yet been attained.

Snow levels during winter 2016/2017 were also significantly above average while snow fall levels for winter 2017/2018 were significantly lower than average for much of the great basin. It may be worth comparing lek counts for the surveyed areas in this report to lek counts conducted in 2017. Any detected correlation may serve as supporting evidence indicating snow level persistence as a contributing factor influencing lek timing and attendance.

## **Upland Game Translocation and Monitoring**

### Mountain Quail Establishment

NDOW, working in conjunction with the U.S. Forest Service – Ely Ranger District, released 105 mountain quail into Hendry’s Creek (figure 2) in the northern portion of the Snake Range in White Pine County during November of 2018. An additional release will be conducted in late fall of 2019.

Quail call routes will be conducted at least twice during May and June of each year following release, for a period of three years to help determine the sustainability of this new population. Habitat suitability and availability of cover and steep, rocky slopes should be conducive to mountain quail needs.



*Figure 2. Mountain quail seeking cover at Hendry’s Creek.*

### Ruffed Grouse Establishment

The short-term objective for this project is to augment the Pine Forest population in Humboldt County. Game Division biologists conducted spring and summer population monitoring in the Santa Rosa Range to determine whether or not populations were at a level to implement a capture and translocation project. Ultimately, it was determined that numbers of birds were not at a level where a capture would be successful enough for translocation of birds to the Pine Forest Range.

Despite this, drumming counts conducted during May of 2018 were somewhat encouraging. Field biologists and technicians performed surveys at 107 points at six different locations including Tennessee Mountain, Yankee Bill Summit, Columbian Creek and Toe Jam Creek in Elko

County as well as one survey route each in the Pine Forest and Santa Rosa Mountains of Humboldt County. Overall, detection rates of ruffed grouse across all survey transects was 43% (n=46 listening points). This represents a notable improvement over 2017, when detection rates were just 23% across 87 transects.

Wild Turkey Establishment

We continue to monitor the distribution and survival rates of Merriam’s turkeys that were released into the northern portion of the Toiyabe Range during the winter of 2017-2018. Twelve birds were radio-marked during the second release and we have been monitoring locations using aerial fixed wing follow-up surveys on an intermittent basis (figure 3). Upon the last survey (4/23/2019) just four birds remained alive while seven birds are suspected to have perished. Two birds have either gone missing or their transmitter’s battery life has expired. Nevertheless, the locations obtained have indicated that birds have established a home range that encompasses both the east and west flanks of Mount Callaghan in the northern Toiyabe Range.

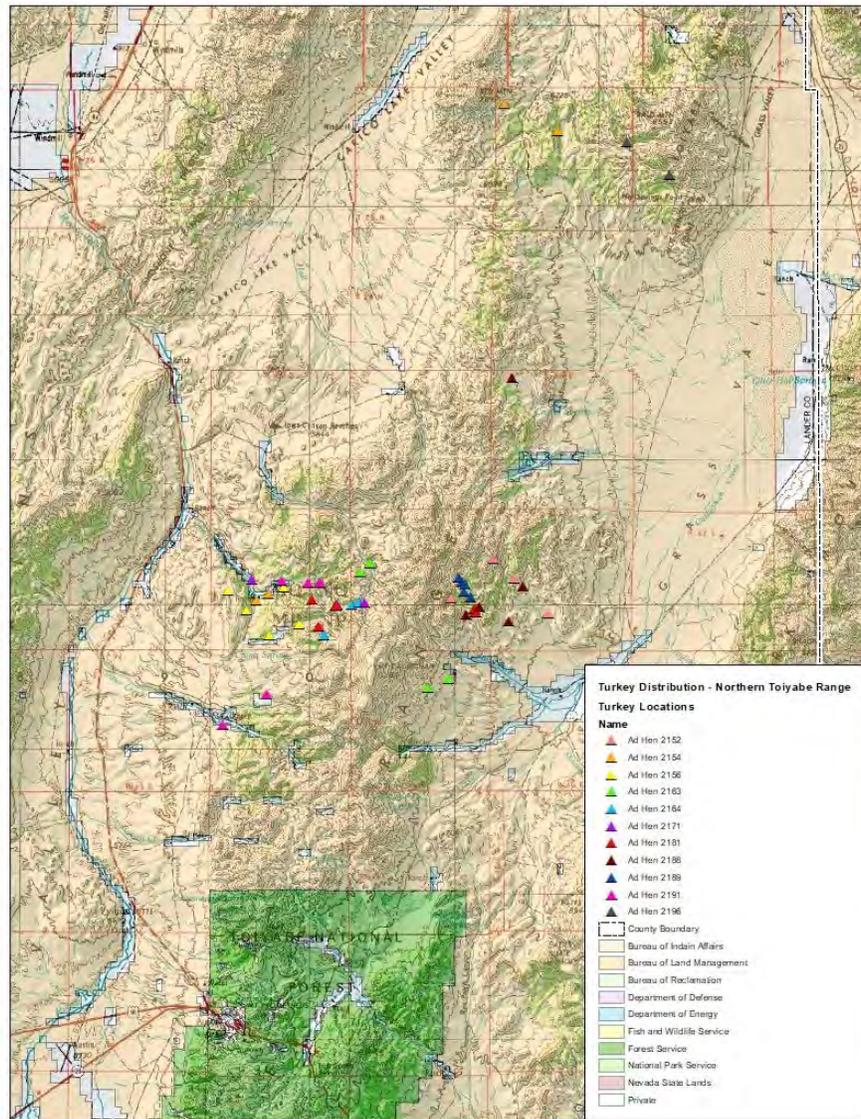


Figure 3. Telemetry locations obtained from VHF radio-marked turkeys in the Toiyabe Range.

## Dusky Grouse Ecology and Management in Nevada

### *Population surveys*

Breeding surveys for dusky grouse began on April 24 and continued until May 22, 2018. There were 64 total survey locations – 4 stop locations per survey site, 4 survey sites per field site, and 4 total field sites – with each survey location sampled twice for a total of 128 survey stops completed in 2018. During the breeding surveys, technicians detected over 90 male dusky grouse, with peak activity occurring from April 26 – May 1. Forty-six dusky grouse were identified during regular intervals, while 44 were detected during playback call intervals only. We have not yet analyzed the detection probabilities and location estimation error of marked males for the 2018 season.

### *Survival, reproduction, and harvest rates*

Forty-seven dusky grouse were captured during the 2018 field season. Eight males and 34 females were banded, while 23 hens received GPS tags (15 store-on-board solar backpacks, 2 Argos solar backpacks, and 6 store-on-board necklace-style). There were a total of 29 adults and 18 chicks captured in 2018. Incidental mortalities consisted of 8 individuals lost during capture and



Figure 5. Female Dusky grouse seeking cover (Slatauski, NDOW) killed prior to the handling, and 4 known radio-marked individuals were beginning of the hunting season, one of which seemed to have been killed by a golden eagle.

No active nests were located during the nesting season, even after spending many hours and days searching. However, three nest sites were located post-hatch: one under sagebrush ~75 yards from an aspen stand, and two in aspen stands within ~6 m of the forest-sagebrush edge. Despite our lack of nesting hen locations, days spent afield with dogs (n = 70) were 66% more successful for locating dusky grouse than days spent afield by humans alone (n = 32).

During the first week of June, dusky grouse hens were displaying brooding behaviors and chicks were sighted and heard calling to their mothers. We located ~88 brooding dusky grouse hens, with broods ranging from 1–8 chicks per hen. Locations were recorded for each brood.

### *Habitat selection*

No microhabitat vegetation measurements were taken during the 2018 field season due to the primary task of locating and capturing dusky grouse. Capturing dusky grouse and deploying GPS tags on hens was the most important factor for the 2018 field season and prepares us for success over the next two field seasons. Vegetation sampling will occur in the 2019 and 2020 field seasons.

### *Miscellaneous Observations*

Several interesting observations were recorded during the first field season. Anecdotally, there seemed to be a displacement of dusky grouse once domestic sheep herds moved into certain areas. The relationship between dusky grouse and livestock is relatively unstudied and this may provide an opportunity to understand how livestock and dusky grouse interact. We also observed several instances of dusky and sage-grouse broods in close proximity to each other at multiple sites within the broader study area. Although the inter-specific brooding habitat selection has been observed by other biologists in the past, there has been no quantifiable research to better understand this overlap between these two related species. This information could lead to important habitat conservation measures in the future.



*Male Dusky grouse; S. Farnsworth, Utah State University*

### *Conclusions*

The first field season was primarily focused on breeding bird surveys and dusky grouse captures. Due to logistical factors of starting a field project, we experienced a late start to our breeding bird surveys, which began after the breeding season had already started. Disregarding potential re-sights, ~695 dusky grouse detections were made over the entire 2018 field season and between all field sites; i.e., the north Schell Creek, Duck Creek Basin, and Egan study areas. Without having harvest and mortality estimates from 2018, harvest and survival rates cannot be calculated to date. We will attempt to locate all 2018 radio-marked individuals during the 2019 field season and will estimate mortality from fall and winter once we have retrieved the store-on-board data, or GPS tags themselves, from the field. Additionally, we will be able to use the surviving radio-marked hens to determine when their migration occurs, when and where they begin nesting, and where they move with their broods (assuming nesting is successful). This will allow us to identify their life history requirements, determine habitat selection while breeding, nesting, and brooding, and achieve each of our objectives over the next 2 field seasons.

### *Future Plans and Revised Objectives*

For the 2019 field season, the start date for breeding bird surveys will be accelerated. In addition to our current sample of radio-marked dusky grouse, we will deploy up to 13 ARGOS-enabled solar rump-mount 22 g GPS-PTT radios (GeoTrak™). In addition to our primary objectives mentioned above, evaluating the thermal ecology of dusky grouse habitat selection will also be included. Lastly, a number of secondary objectives will be incorporated as described below.

### *Primary Objectives – Revisions:*

- *Population surveys.* Breeding bird surveys will begin the last week of March and extend until the end of breeding season (~mid-May). This will allow us to properly determine the environmental conditions required for males to begin their reverse migrations into their

breeding habitats and to estimate the length of time that males exhibit their breeding behaviors in relation to differing environmental variables.

- *Survival, reproduction, and harvest rates.* We will measure microhabitat characteristics of nest locations  $\leq 5$  days post-hatch, including operative thermal ranges throughout the nesting period. Similarly, we will measure microhabitat and thermal characteristics of GPS-identified brooding locations within  $\leq 3$  days of initial use.
- *Habitat selection.* Vegetation and environmental characteristics will be surveyed for each identified location, including proportions of predominant grass, forb, and woody plant species, percent canopy cover, vegetation density, categorical vertical cover descriptions, line-of-sight to and from identified locations, percent bare ground, micro-terrain measurements (i.e., minute slope and elevation changes), and thermal ranges.

*Secondary Objectives:*

- *Baseline diet and cortisol levels between sites.* Fecal samples will be collected from captured grouse to determine a baseline for dusky grouse cortisol levels. We will also collect two saliva swab samples from captured grouse to determine their reactive cortisol levels as affected by capture. We will use the collected fecal samples to also determine seasonal dietary habits of dusky grouse throughout the Schell Creek, Duck Creek Basin, and Egan study sites. When funding becomes available, we will identify the stomach and intestinal contents of dusky grouse using samples sent to Utah State University from the veterinary labs that NDOW uses to assess parasites and diseases.
- *Displacement by sheep herding.* We will record shepherds' detailed herding paths and timelines of their movements throughout the Schell Creek, Duck Creek Basin, and Egan study sites during the summer months and compare the data to radio-marked dusky grouse movements during overlapping timelines to determine the impact of sheep presence on dusky grouse activity.
- *Sage-grouse brooding habitat overlap.* Brooding locations will be recorded as observed during our field studies. We will compare their locations to known dusky grouse brooding locations to identify overlapping habitat use between the two species. This can help identify key areas of habitat for conservation management of both species.
- *Use of dogs for scientific research.* We will record all tracks of dog movements when performing dusky grouse searches for capture and nest locations. We will also record all successful points and flushes performed by each dog for comparison to successful, human-only dusky grouse searches. This will give us a measurement of success for the use of dogs in dusky grouse scientific research.

## **Monitoring the Effects of Landscape Level Treatments on Sage-grouse in the Desatoya Mountains**

Sage-grouse demographic rates and spatial use were measured at the Desatoyas study area from 2014 to 2018 as part of a broad, 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 (that is, riparian

restoration, removal of singleleaf pinyon pine and Utah juniper (hereafter referred to as P-J) on sage-grouse demographic rates, movement patterns, and predator community composition. To date, 170 sage-grouse have been fitted with very high frequency (VHF) and Global Positioning System (GPS) 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 2011 was estimated at 0.91 (95 percent CRI 0.81–1.02). This estimate was largely reflective of drought-like conditions.

### Introduction

The U.S. Geological Survey (USGS) along with agency and stakeholder partners that include NDOW, Bureau of Land Management (BLM), Smith Creek Ranch, and Great Basin Bird Observatory, are collaborating on an intensive effort to monitor populations of sage-grouse in the Desatoya Mountain Range. Large expanses of P-J within the Desatoya Mountains may inhibit sage-grouse movement and act as barriers between seasonally used habitats. Loss of sagebrush, wet meadows, and riparian habitats also may contribute to population decreases. Therefore, we initiated a before-after study designed to investigate potential effects of habitat restoration and enhancement (e.g. P-J removal, riparian restoration) on sage-grouse population vital rates, habitat selection, and movement patterns, as well as effects on predator community composition. Our goals are to evaluate sage-grouse response to restoration activities by monitoring seasonal movements, estimating vital rates (for example, individual, nest, and brood survival), and measuring changes in habitat selection and predator communities.

This report presents updated findings regarding the Desatoyas study area from 2011– 2018, and incorporates data reported by Coates and others (2016*b*) as part of an ongoing long-term research effort. Intensive field studies of radio-marked sage-grouse span 2014–18, while lek counts span the entire study period. Specific to this report are demographic and population growth rate estimates derived from the integrated population model (hereafter, “IPM”), as well as a summary statistics describing sage-grouse space use and avian predator abundance throughout the study site. The findings contained in this report are preliminary and are meant to provide managers with timely science from this ongoing research effort and are subject to change.

### Preliminary Results

From fall 2013 to fall 2018, 170 sage-grouse were captured at the Desatoyas study site ( $n=99$  fall,  $n=71$  spring captures). Of those, 151 were female and 19 were male. GPS transmitters provided 57,481 locations of marked sage-grouse at the Desatoyas study area from 2014 to 2018. These data, coupled with VHF data, also allowed for the development of seasonal habitat distribution layers. During the spring (nesting) season, the 50 percent core area of sage-grouse activity and the 95 percent population level home-range were 8,715 and 47,265 ha, respectively (figure 7). During the summer (brood-rearing) season, the 50 percent core area and the 95 percent population level home-range were 1,465 and 18,423 ha, respectively.

Seasonally, sage-grouse use of the landscape changed as marked individuals utilized distinctly different areas throughout different seasons. The season that sage-grouse were most concentrated was the summer. During that season, sage-grouse were localized to a 50 percent core area of only 1,465 hectares compared to the winter, where they used 12,559 hectares. Differences among

seasonal habitat area estimates can be partly attributed to variation in location frequency and corresponding adjustments of bandwidths used to smooth habitat edges.

Information collected from radio and GPS marked grouse also allows researchers to estimate several different demographic rates that not only provide important insights into certain life stages (e.g. nesting, brood rearing and survival rates), but also factors into integrated population models. Survival rate information for the study period so far is provided in Table 2 while nesting, brood rearing and population growth rates are provided in Table 3.

Table 2. Estimated survival rates of adult, yearling and juvenile sage-grouse from 2014-2018.

Year	Adult Survival	Yearling Survival	Juvenile Survival
2014	0.66	0.68	0.92
2015	0.69	0.71	0.93
2016	0.69	0.71	0.93
2017	0.47	0.50	0.87
2018	0.61	0.63	0.91
<i>Average:</i>	0.62	0.65	0.91

Table 3. Estimated nest survival for adults, probability of a chick surviving the 50-day brood rearing period and population growth rate estimates from 2014-2018.

Year	Incubation Period Survival	Brood Survival to 50-days	Lambda ( $\lambda$ )
2014	0.32	0.33	1.06
2015	0.30	0.29	1.01
2016	0.35	0.20	0.99
2017	0.29	0.22	0.77
2018	0.34	0.23	0.91
<i>Average:</i>	0.32	0.25	0.95

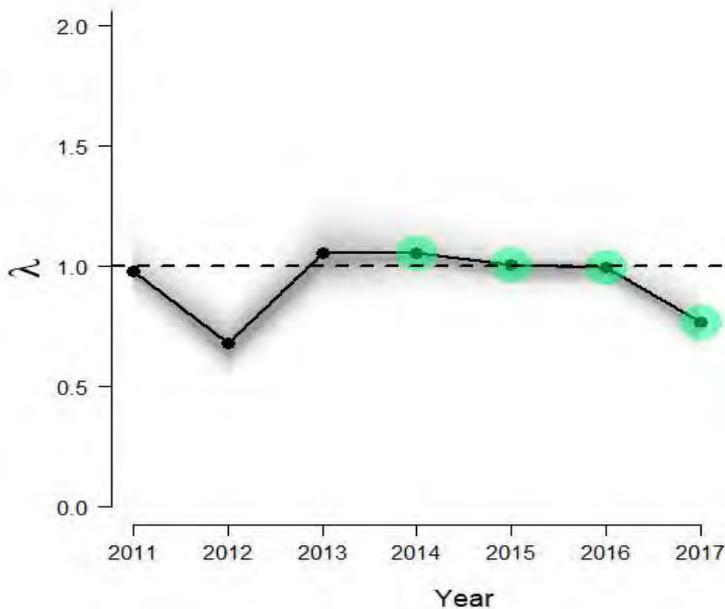
#### *Avian Predator Monitoring*

Over 300 raptor and raven surveys were conducted throughout the Desatoyas study area in 2018 for a total of 1,992 surveys during March–August 2014–18. In 2018, a total of 486 ravens were observed during the 317 surveys which yielded 1.53 ravens per survey. We detected 0.91 ravens per RRHL survey at nest sites, which was lower than the number of ravens that we detected per each random survey (n=2.09). Livestock were encountered at 108 surveys, and raven detections per survey were lower during surveys in which livestock were detected (1.20), compared with surveys in which livestock were not detected (1.70). When ravens were detected in 2018, the median number of observed ravens was 1 per survey, and the maximum number of ravens detected in any survey was 117.

### *Population Growth Estimated from an Integrated Population Model*

Estimated population demographic rates, IPM-derived estimates of  $N$ ,  $\lambda$ , and probability that the population is increasing versus declining for the Desatoyas study area cumulatively, and annually from 2011–18 was determined. Derived parameters were averaged across years to evaluate overall averages of recruitment (hereinafter;  $R$ ) and all subcomponents for adult ( $a$ ) and yearling ( $y$ ) sage-grouse when estimation by age was appropriate. Some parameters did not have enough data to derive annual estimates (for example, clutch size), and those parameters were pooled with data from other sites across central and northern Nevada to produce estimates. From 2011–18, the Desatoyas study area had a median  $\lambda$  estimate of 0.91 (95 percent CRI=0.81–1.02). Estimated declines in population sizes are reflected by a trend of decreasing lek counts (figure 6). At the Desatoyas study area, the 8-year log of the odds ratio indicates that there is more evidence of population decrease than that of population increase. We also determined that adult sage-grouse had similar median annual survival (0.61, 95 percent CRI=0.51–0.70) as yearlings (0.63, 95 percent CRI=0.53–0.73), but lower recruitment (0.37, 95 percent CRI=0.23–0.58) than yearlings (0.44, 95 percent CRI=0.25–0.71).

*Figure 6. Annual population growth rates estimated from 2011-2017. Gray shading represents years wherein only lek count data was collected. Green shading represents years that lek count and demographic data were collected.*



While the overall estimate of lambda across the study period (2011-2018) reflects population decline, results need to be interpreted with the following caveats. Sage-grouse populations in the Great Basin are known to exhibit population cycles, which typically range in duration from 10-12 years (Row and Fedy 2017) and are strongly correlated with annual changes in precipitation (Coates and others, 2018). Accordingly, the 8-year duration of our study to date primarily spanned periods of drought, so reported lambda estimates are most reflective of long-term drought conditions. While current sage-grouse population cycles in the Great Basin may be

decreasing in both duration and amplitude (Row and Fedy 2017), longer term lambda estimates may increase when future years could potentially experience and realize above average precipitation, fueling bursts of population growth.

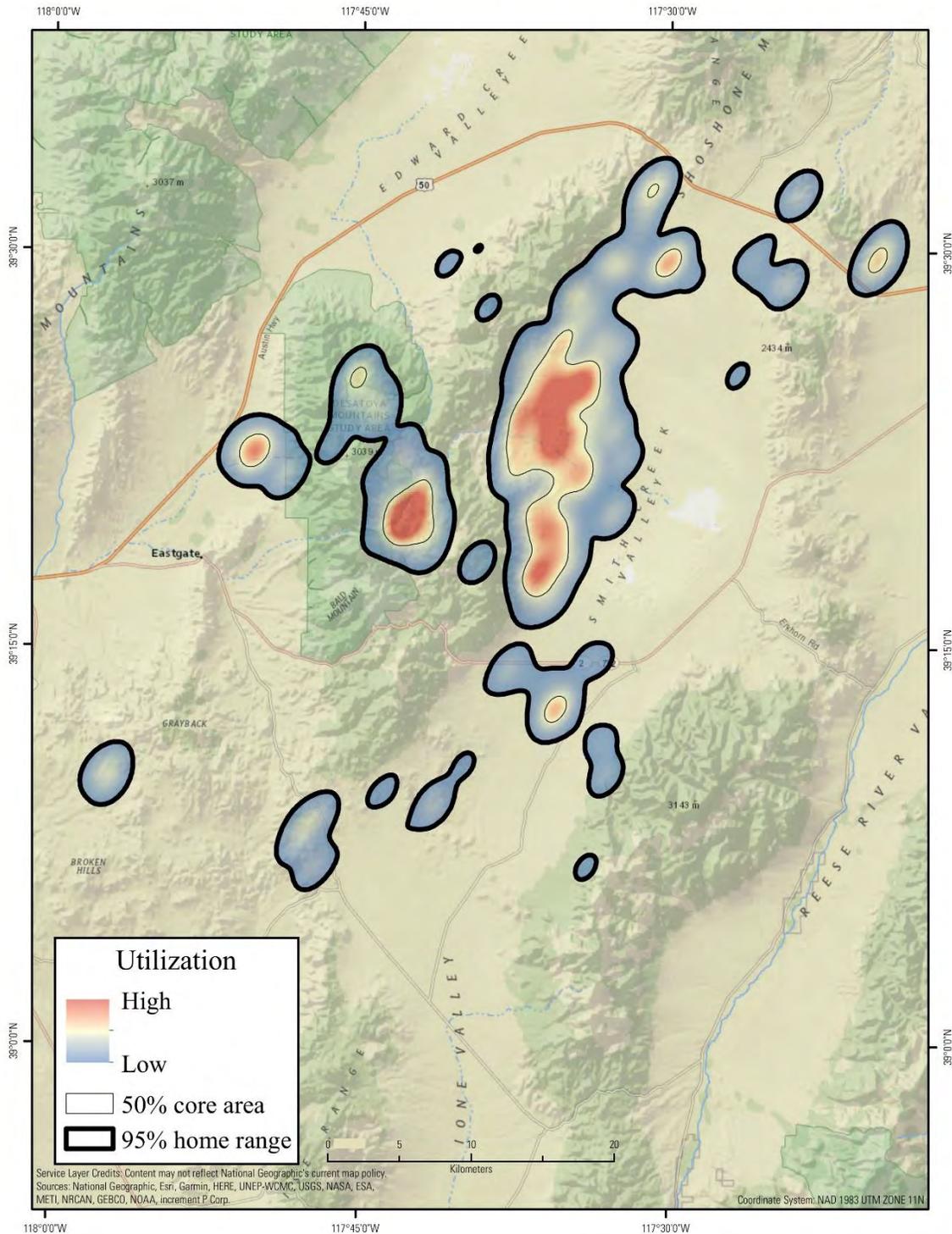


Figure 7. Cumulative utilization distribution of sage-grouse during the spring season from 2014-2018.

## Estimating Vital Rates within Nevada's Most Novel Habitats

Demographic rates and spatial use of greater sage-grouse (*Centrocercus urophasianus*; hereinafter, sage-grouse) were measured in the Monitor Range during 2015-2018 as part of a broad, long-term collaborative research program. General goals of this project are to provide a control site with low anthropogenic disturbance that will allow comparisons of demographic trends in sage-grouse populations in populations with anthropogenic surface disturbances. To date, 113 sage-grouse have been captured and outfitted with very high frequency and global positioning system 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 was estimated at 0.87 (95 percent CRI 0.78 – 0.98) from 2011 to 2018.

### Introduction

In the Great Basin, understanding how relationships between habitat selection and population vital rates are altered by threats from anthropogenic surface disturbance (e.g. mine, geothermal, oil and gas, or infrastructure development) is important to help facilitate effective management of primary threats to sage-grouse populations (Connelly and others, 2000). However, effectiveness of management actions aimed at ameliorating these threats cannot be fully evaluated without information of sufficient time duration on population performance and habitat associations in areas that are relatively undisturbed and relatively intact sagebrush ecosystems. For example, increased development of energy infrastructure within sage-grouse habitat can alter vegetation communities to change predator composition, particularly common ravens, as transmission lines and other tall structures used for nesting and perching become more prevalent across the landscape (Howe and others, 2014). Evaluating metrics of sage-grouse population performance, spatial utilization, and predator abundance at control sites can better help quantify relative impacts of anthropogenic disturbance.

The Monitor Range study area is located approximately 110 kilometers southeast of Austin, Nevada, and includes the mountains in the Monitor Range and adjacent Monitor Valley to the west. The area represents a valuable control site owing to a paucity of anthropogenic disturbance and infrastructure compared to other field sites in Nevada and California monitored by USGS and collaborators. Moreover, data obtained from the Monitor Range can help provide a baseline for comparing effects of energy development on sage-grouse monitored at the McGinnis Hills and Tuscarora study sites.

This report presents updated findings regarding the Monitor Range study area from 2015–2018 and incorporates data reported by Coates and others (2016b) as part of an ongoing long-term research effort. Intensive field studies of radio-marked sage-grouse span 2015–2018, while lek counts span the entire study period. Specific to this report are demographic and populations growth rate estimates derived from the integrated population model (hereafter, “IPM”).

### Preliminary Results

From fall 2015 to fall 2018, 113 sage-grouse were captured in the fall ( $n=71$ ) and spring seasons ( $n=42$ ). Of those, 108 were female and 5 were male. Over 9,000 GPS locations of marked sage-grouse were obtained at the Monitor Range from 2015–18. During the spring (nesting) season, the

50 percent core area of sage-grouse activity and the 95 percent population level home-range were 6,763 ha and 54,435 ha, respectively. During the summer (brood-rearing) season, the 50 percent core area and the 95 percent population level home-range were 5,123 ha and 28,918 ha, respectively.

Seasonally, sage-grouse use of the landscape changed as marked individuals utilized distinctly different areas throughout different seasons. The season that sage-grouse were most concentrated was the winter. During that season, sage-grouse were localized to a 50 percent core area of only 1,164 ha compared to the spring, where they used 6,763 ha (figures 9 and 10). 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 UDs.

Information collected from radio and GPS marked grouse also allows researchers to estimate several different demographic rates that not only provide important insights into certain life stages (e.g. nesting, brood rearing and survival rates), but also factors into integrated population models. Survival rate information for adults, yearlings and juveniles is provided in Table 4 while nesting, brood rearing and population growth rates are provided in Table 5 for the duration of the study.

Table 4. Estimated survival rates of adult, yearling and juvenile sage-grouse from 2016-2018.

Year	Adult Survival	Yearling Survival	Juvenile Survival
2016	0.61	0.64	0.91
2017	0.58	0.61	0.90
2018	0.56	0.58	0.90
Average:	0.58	0.61	0.90

Table 5. Estimated nest survival for adults, probability of a chick surviving the 50-day brood rearing period and population growth rate estimates from 2016-2018.

Year	Incubation Period Survival	Brood Survival to 50-days	Lambda ( $\lambda$ )
2016	0.27	0.29	0.94
2017	0.29	0.32	0.85
2018	0.33	0.33	0.88
Average:	0.30	0.31	0.89

#### Avian Predator Monitoring

A total of 366 Raven, Raptor, Horse and Livestock (RRHL) surveys were conducted throughout the Monitor Range in 2018 for a total of 1,001 surveys during March–August 2016–18. In 2018, ravens were detected during 114 surveys. We detected 0.29 ravens per RRHL survey at nest sites, which was identical to the number of ravens detected per random survey (0.29). Livestock were encountered at 30 surveys, and raven detections per survey were noticeably higher during

surveys in which livestock were detected (0.60), compared with surveys in which livestock were not detected (0.29). When ravens were detected in 2018, the median number of observed ravens was 1 per survey, and the maximum number of ravens detected in any survey was 8.

*Population Growth Rates Estimated from an Integrated Population Model*

From 2011–18, the Monitor Range had a median  $\lambda$  estimate of 0.87 (95 percent CRI=0.78–0.98). Estimated declines in population sizes are reflected by a trend of decreasing lek counts (figure 8). At the Monitor Range, the eight-year log of the odds ratio indicates that there is more evidence of population decline than that of population increase or neutrality. Adult sage-grouse had similar median estimates of annual survival (0.60, 95 percent CRI=0.48–0.69) and recruitment (0.35, 95 percent CRI=0.20–0.58) as compared to yearlings (survival=0.62, 95 percent CRI=0.50–0.72; recruitment = 0.38, 95 percent CRI=0.19–0.73).

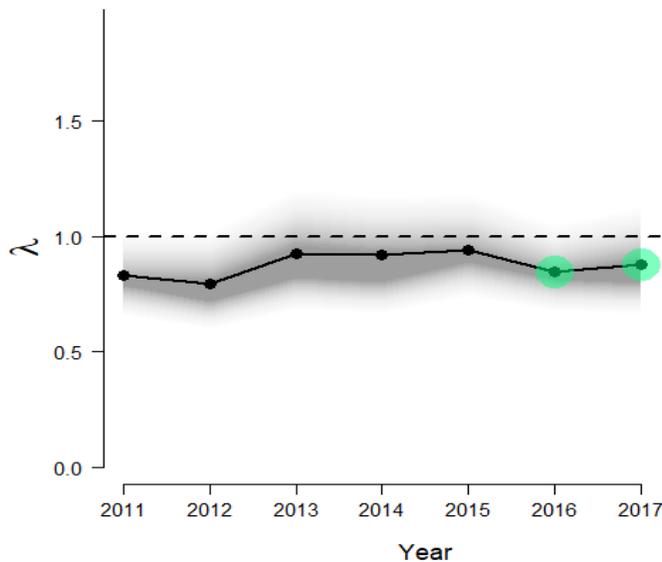
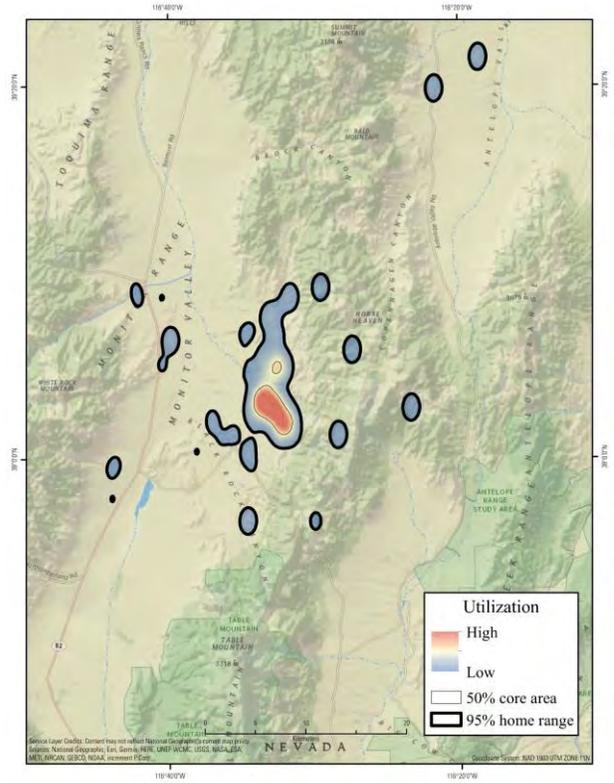
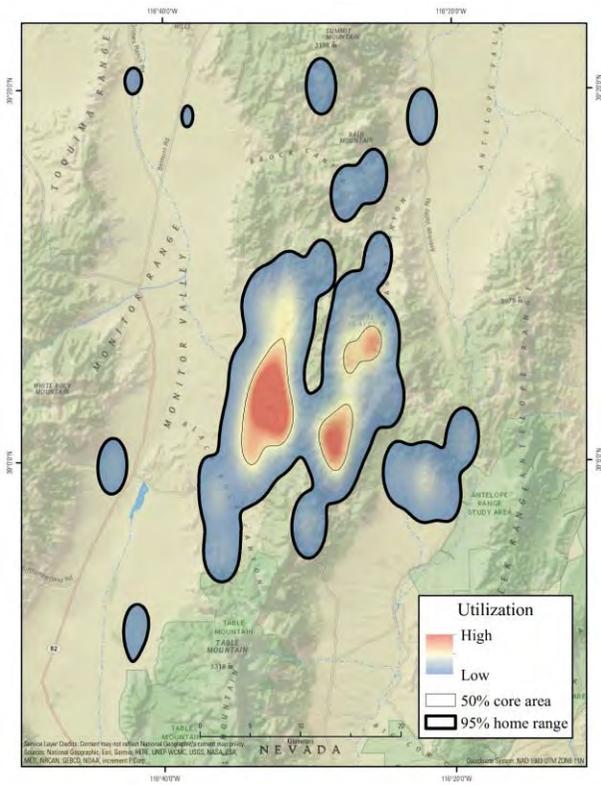


Figure 8. Annual population growth rates estimated from 2011-2017.

While the overall estimate of  $\lambda$  across the study period (2011-2018) reflects population decline, results need to be interpreted with the following caveats. Sage-grouse populations in the Great Basin are known to exhibit population cycles, which typically range in duration from 10-12 years (Row and Fedy 2017) and are strongly correlated with annual changes in precipitation (Coates and others, 2018). Accordingly, the 8 year duration of our study to date primarily spanned periods of drought, so reported lambda estimates are most reflective of long term drought conditions. While current sage-grouse population cycles in the Great Basin may be decreasing in both duration and amplitude (Row and Fedy 2017), longer term lambda estimates may increase when future years that could experience above average precipitation fueling bursts of population growth are incorporated into the IPM time series.



Figures 9 and 10. Seasonal utilization distributions for spring (left) displaying a rather large area versus more limited distribution of marked sage-grouse during the winter (right).

## Measuring Corticosterone Metabolites in Greater Sage-grouse

This project is being conducted in conjunction with an associated noise monitoring study being performed at seven different lek locations representative of northwestern, north-central and central Nevada. Sound monitoring devices (Larson-Davis sound level meters) capable of measuring noise at the 6.5 ambient decibel level were deployed near Nellie Springs Mountain and Bitner Table in northern Washoe County, Crowley Creek in the Montana Mountains of Humboldt County, Vigus Butte, east bench of Mount Callaghan and Ackerman Creek in Lander County. This investigation is being conducted to gain a better understanding of baseline noise levels at leks with relatively little to no anthropogenic disturbances nearby.

Measuring corticosterone metabolites allows researchers to gain a better understanding of stress levels at these sites. Glucocorticoid hormones and their metabolites are often used to measure stress responses either from blood or fecal samples. These hormones are integral to allocating energy and prolonged exposure due to chronic stress can affect fitness by inhibiting resource allocation to reproductive or immune activities (Wikelski and Cooke, 2006). In a study conducted in Fremont County, Wyoming, Blickley et al. (2012) found strong support for an impact of noise playback on stress levels, with 16.7% higher mean corticosterone metabolite levels in samples from noise leks compared to paired control leks. We want to gain a better understanding of cortisol levels exhibited by sage-grouse at areas that are considered relatively quiet with intact habitat and potentially compare these results to certain leks exposed to current or future anthropogenic disturbance (e.g. additional vehicle trips, energy development, mine construction, etc.).

Our initial objective is to obtain 15 fecal samples (figure 11) consisting of 5 pellets each per lek (105 samples) for laboratory analysis. Table 6 below indicates the samples that have been collected as of this report writing for each one of the study lek complexes.

*Table 6. Sage-grouse fecal sample collection distribution during the spring of 2019.*

<b>Lek Name/Complex</b>	<b>Region</b>	<b>County</b>	<b>Samples</b>
Twin Lakes	Northwest	Washoe	14
Fatty Martin	Northwest	Washoe	10
Crowley Creek (1 & 2)	North-central	Humboldt	16
Mount Callaghan (east)	Central	Lander	23
Ackerman Creek	Central	Lander	21
Vigus Butte	Central	Lander	1
Total Samples:			86

The collection of samples will continue through mid-May of 2019, with the potential for additional samples to be collected during the spring breeding season of 2020 from these sites plus additional areas subject to heightened anthropogenic disturbance. Results are intended to assist managers with making future management action recommendations that benefit sage-grouse health. Samples will be analyzed either at Idaho State University, the University of California at Davis or the University of Nevada, Reno depending on lab capabilities and workload.



Figure 11. Example of typical sage-grouse roost droppings including cecal deposit at left.

### **Effects of Conventional Raven Control and Wildfire on Greater Sage-grouse within the Virginia Mountains**

Demographic rates and spatial use of greater sage-grouse (*Centrocercus urophasianus*; hereinafter, sage-grouse) were measured in the Virginia Mountains from 2008–18 as part of a broad, 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 Virginia Mountains, goals of this project are to evaluate the effect of raven removal and wildfire effects on sage-grouse demographic rates. To date, 313 sage-grouse have been captured and outfitted with very high frequency (VHF) and global positioning system (GPS) transmitters. An average annual population rate of change ( $\lambda$ ) derived from an integrated population model which utilized demographic and lek count data measured during this study from 2011 to 2018 was estimated to be 0.93 (95 percent credible interval 0.81–1.05), reflecting a population decline of about seven percent annually. This estimate may be reflective of drought-like conditions, but could also be related to the tremendous amount of wildfire this study site has experienced from 2016-2018.

#### **Introduction**

The Virginia Mountains in northwestern Nevada consists of exurban areas, which include sporadic ranching operations and numerous anthropogenic structures. Ravens were reported as an important nest predator at this study site (Lockyer and others, 2013). Raven numbers are thought to be moderately high at this site compared to other areas in Nevada (Tyrell pers. comm,

2018) so reducing raven numbers using lethal techniques was considered an appropriate management action. Although a few studies have quantified the effects of raven removal on sage-grouse nest survival (for example, Dinkins and others, 2016), we are currently unaware of any studies that evaluate evidence of whether raven removal influences population growth rates. Scientific findings regarding effects on specific life-stages, such as nesting, as well as population growth would be beneficial to help guide decisions regarding lethal removal. Furthermore, we are unaware of any studies that have empirically evaluated the impacts of ravens on sage-grouse populations in years after removal activities have concluded. Recent fires at this study site (Virginia Mountains Fire Complex - 59,727 acres, 2016; and Long Valley Fire - 83,733 acres, 2017) may also provide additional research opportunities to examine interactions between ravens and wildfire.

The USGS has been collecting data at the study site since 2008 while the United States Department of Agriculture Animal and Plant Health Inspection Service initiated raven removal activities using the pesticide DRC-1339 during 2014–18 with an extension through 2019. Research objectives are therefore focused on the effects of ravens and raven removal on sage-grouse populations within the Virginia Mountains. Specifically, we are conducting a before-after-control-impact study design to investigate potential effects of raven removal on sage-grouse population vital rates, population growth, and effects on predator community composition. This report presents updated findings regarding the Virginia Mountains from 2008–18 and is part of an ongoing long-term research effort. Specific to this report are demographic and populations growth rate estimates derived from the integrated population model (hereinafter, “IPM”), a summary of sage-grouse space use throughout the study site, and an overview of avian predator surveys. The findings contained in this report are preliminary and are meant to provide managers with timely science from this ongoing research effort and are subject to change.

### Preliminary Results

From 2008 to 2018, 313 sage-grouse were captured in the fall ( $n=198$ ) and spring seasons ( $n=115$ ; table 1). Of those, 285 were female and 28 were male. Seasonally, sage-grouse use of the landscape remained relatively constant as marked individuals utilized similar areas throughout different seasons. The season that sage-grouse were most concentrated was the summer. During that season, sage-grouse were localized to a 50 percent core area of only 6,218 ha compared to the winter season where they used 41,995 hectares (figure 13). Differences among seasonal distribution estimates can be partly attributed to variation in location frequency and corresponding adjustments of bandwidths used to smooth UD.

Information collected from radio and GPS marked grouse also allows researchers to estimate several different demographic rates that not only provide important insights into certain life stages (e.g. nesting, brood rearing and survival rates), but also factors into integrated population models. Survival rate information for the duration of the study is provided in Table 7 while nesting, brood rearing and population growth rates are provided in Table 8.

Table 7. Estimated survival rates of adult, yearling and juvenile sage-grouse from 2011-2018.

Year	Adult Survival	Yearling Survival	Juvenile Survival
2011	0.57	0.59	0.90
2012	0.41	0.44	0.85
2013	0.59	0.62	0.91
2014	0.69	0.71	0.93
2015	0.72	0.74	0.94
2016	0.61	0.63	0.91
2017	0.60	0.62	0.91
2018	0.56	0.58	0.90
Average:	0.59	0.62	0.91

Table 8. Estimated nest survival for adult hens, probability of a chick surviving the 50-day brood rearing period and population growth rate estimates from 2011-2018.

Year	Incubation Period Survival	Brood Survival to 50-days	Lambda ( $\lambda$ )
2011	0.42	0.31	0.86
2012	0.26	0.48	0.63
2013	0.25	0.57	1.04
2014	0.34	0.45	1.30
2015	0.31	0.42	1.14
2016	0.36	0.30	0.94
2017	0.19	0.33	0.92
2018	0.30	0.34	N/A
Average:	0.30	0.40	0.98

#### *Nest Videography*

Remote video cameras were placed at 73 nests from 2009–11 and from 2014–18, during which all depredations and successful hatches were recorded. Predators associated with partial and complete depredations were categorized as ravens ( $n=8$ ), coyotes ( $n=8$ ), American badgers ( $n=2$ ), long-tailed weasel ( $n=1$ ), bobcat ( $n=1$ ), and fox ( $n=1$ ). Successful hatches were recorded at 45 nests and five nests were abandoned, one of which was due to a hen that was killed during an incubation recess.

#### *Population Growth Rates*

Summary information was reported for observed lek counts, population vital-rate estimates, IPM-derived estimates of  $N$  (number),  $\lambda$  (population growth rate), and probabilities of increasing population growth versus declining population growth (odds ratios) for the Virginia Mountains cumulatively, and annually from 2011–18. Derived parameters were averaged across years to evaluate overall averages of recruitment ( $R$ ) and all subcomponents for adult ( $a$ ) and yearling ( $y$ )

sage-grouse when estimation by age was appropriate. Some parameters did not have enough data to derive annual estimates (for example, clutch size), and those parameters were pooled with data from other sites across central and northern Nevada to produce estimates.

From 2011–18, the Virginia Mountains has a median  $\lambda$  of 0.93 (95 percent credible interval=0.81–1.05; hereinafter, CRI). Estimated declines in population sizes are reflected by a trend of decreasing lek counts (figure 12). At Virginia Mountains, the 8-year log of the odds ratio indicates that there is more evidence of population decrease than that of population increase. We also observed that adult sage-grouse averaged similar survival (0.59, 95 percent CRI=0.50–0.68) compared with yearlings (0.62, 95 percent CRI=0.52–0.71), but exhibited lower recruitment (adult R=0.43, 95 percent CRI=0.28–0.64; yearling R=0.51, 95 percent CRI=0.29–0.83).

While the overall estimate of lambda across the study period (2011–2018) reflects population decline, results need to be interpreted with the following caveats. Sage-grouse populations in the Great Basin are known to exhibit population cycles, which typically range in duration from 10–12 years (Row and Fedy 2017) and are strongly correlated with annual changes in precipitation (Coates and others, 2018).

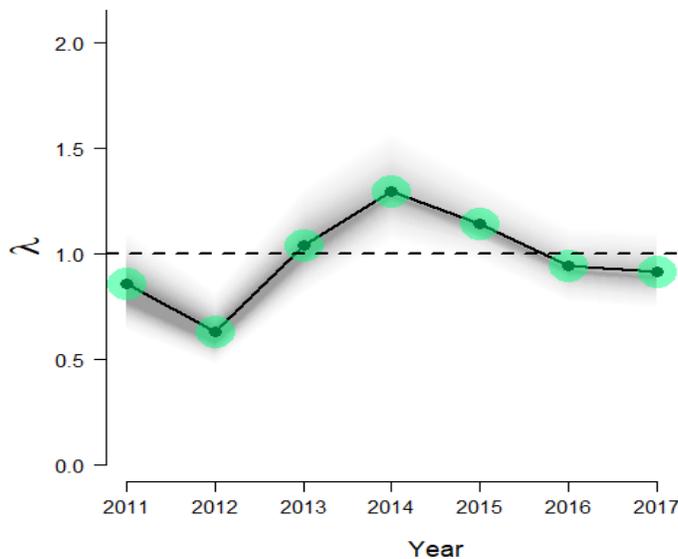


Figure 12. Population growth rates estimated from corrected lek counts from 2011-2018.

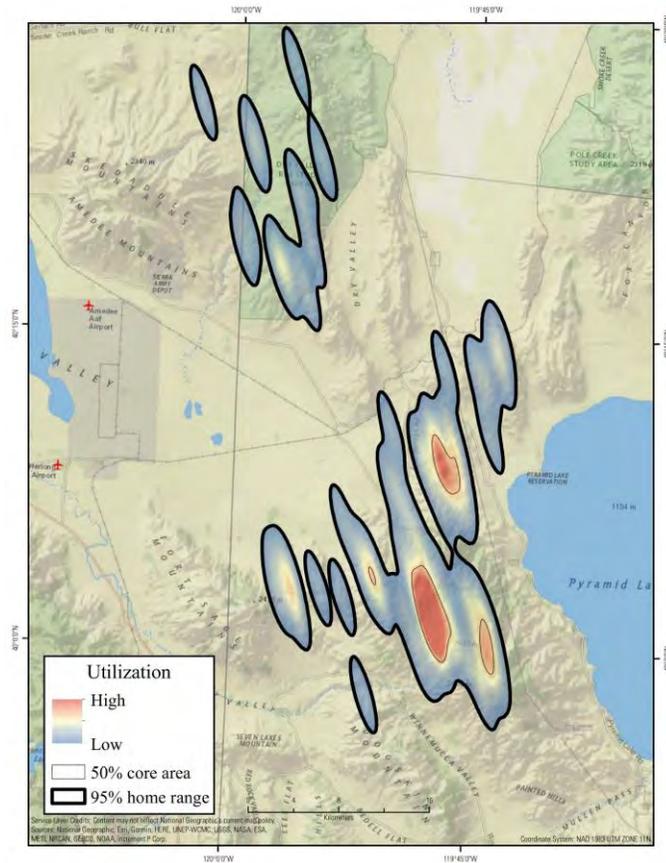


Figure 13. Cumulative utilization distribution of sage-grouse during the winter season at the Virginia Mountains study area from 2009-2018.

## Monitoring the Effects of Pinyon and Juniper Removal on Greater Sage-grouse in Southeastern Nevada

NDOW and the BLM’s Ely District have partnered on a monitoring project to determine the efficacy of various vegetative treatments, particularly pinyon and juniper removal via several different treatment methodologies (e.g. chaining, mastication, hand thinning, etc.), on small to moderately sized Greater sage-grouse populations within portions of Lincoln County and southern White Pine County. Population level impacts to sage-grouse can occur at very low levels of conifer encroachment. For example, in a study conducted in south-central Oregon, Baruch-Murdo et al. (2013) found that no sage-grouse leks remained active when canopy cover exceeded 4 percent. The BLM and NDOW, along with various other partners including private landowners, are working to address this issue throughout Sage-grouse Management Zone III within south-central Nevada and southern Utah. Similar monitoring work is also ongoing in southern Utah in the Skutumpah, Dog and Hamlin Valley areas by Dr. Nicki Frey with Utah State University. Information collected from Lincoln County in Nevada will help augment sample sizes and provide more robust results from the southern portion of the species range.

Across all three distinct study areas, over 21,000 locations from 36 individual greater sage-grouse have been collected over the course of more than two years of study. Formal analyses have been initiated, but patterns of habitat selection have already been detected. Areas that apparently are keys to sage-grouse persistence year-round have also been identified.

#### *Hamlin Valley Study Area*

In Hamlin Valley, 5,751 points were collected from 6 males and 1 female. A similar pattern to Steptoe Valley was observed here where all grouse used the valley for most of the year but several of them moved 8-10 kilometers over unsuitable pinyon-juniper woodlands to higher elevation sagebrush patches during summer. Within each seasonal habitat patch, individual grouse often didn't cover more than about 5 km (figure 14), suggesting either that suitable habitat was spatially limited (i.e., the habitat is good enough that they don't have to move within seasons) or some combination of those two modulated by environmental covariates. In any of these cases, these grouse are likely still at risk of predation moving between seasonal habitats.

#### *Cave Valley Study Area*

In Cave Valley, 12,184 points were collected from 7 males, 7 females, and 2 where sex was not recorded. GPS data from sage-grouse in Cave Valley suggests that they may face even more significant spatial limitations than in other parts of this fragmented southern range margin. While there is grouse activity in the valley (figure 15), most of it is limited in both space and time, with a majority of the valley unused by any grouse carrying a transmitter. When sage-grouse are in the main part of the valley, it's usually in winter and in a corridor less than half the width of the valley. The driest, most barren segment of the valley—the wide southern half—has almost never been used by grouse during the period of our study. The exception is a small area at the very southern end, which seems to have served as recurrent winter habitat. One of the areas of Cave Valley most commonly and broadly used by grouse is Cave Valley Ranch, where apparent water sources may provide suitable refuge during summer extremes.

#### *Steptoe Valley*

Trapping efforts were initiated in Steptoe Valley in March 2018. Since then, 6,740 points have been collected from 4 female and 7 male GPS marked individuals. During the fall months, individual grouse exhibited different strategies and use the landscape differently. The main, wide part of the valley, especially where there is grass cover in addition to sagebrush, was used often by grouse throughout the year. In the summertime, about half of the grouse with transmitters stayed in the valley, with some making very little change to their overall home range. Two individuals using the valley moved and stayed almost exclusively in or near the marsh area near Comins Lake. The other half of the grouse moved to high elevation patches of sagebrush, many of which were encircled by pinyon-juniper forest (figure 16). There was no apparent difference between sexes in these movements. To reach and stay in those patches, grouse may have been exposed to greater risk of predation due to movement through or over pinyon-juniper woodlands than those that stayed in the valley. Those movements between apparent seasonal habitats demanded shifting their approximate home range by 10-25 kilometers.

Additionally, the research crew in Steptoe Valley has begun investigating potential thermal refugia across the landscape and throughout the year. Compelled by observations of grouse

moving to high elevations in summer, and the potential threats of extreme temperatures to both adults and chicks, researchers are examining the role that temperature regimes at fine scales drive individual grouse habitat selection. It is suspected that sage-grouse are able to persist in areas of both extreme hot and cold in part because of behavior to seek more stable microrefugia. With ongoing habitat treatments in Nevada and other states largely to create more breeding and brood-rearing habitat, understanding landscape impacts on thermal regimes and grouse responses to them will be an essential part of managing habitat for year-round sage-grouse persistence. We hypothesize that factors of terrain and land cover will foster more stable microclimate and that grouse seek those microclimates during extreme temperatures. In particular, more topographic heterogeneity may foster more stable microhabitat and more sage-grouse habitat use, especially when correlated with NDVI.

For each individual grouse, resource selection functions (RSFs) models are being built in order to understand the factors of landscape, climate, habitat, and management that impact their habitat selection. These analyses are in their infancy, but are expected to deliver clear results showing what measurable factors of their environment drive grouse behavior. In particular, one of our first objectives is to analyze the impact of habitat treatments conducted by the BLM, USFS and NDOW. Data loggers and GPS location data will help show what impact those treatments have on grouse habitat selection and whether the impacts are uniform. Because of the apparent difference in seasonal habitats, the amount of data that has been collected, and occasional gaps in GPS coverage, dynamic Brownian Bridge Movement Models will be used to analyze patterns of movement and habitat selection.

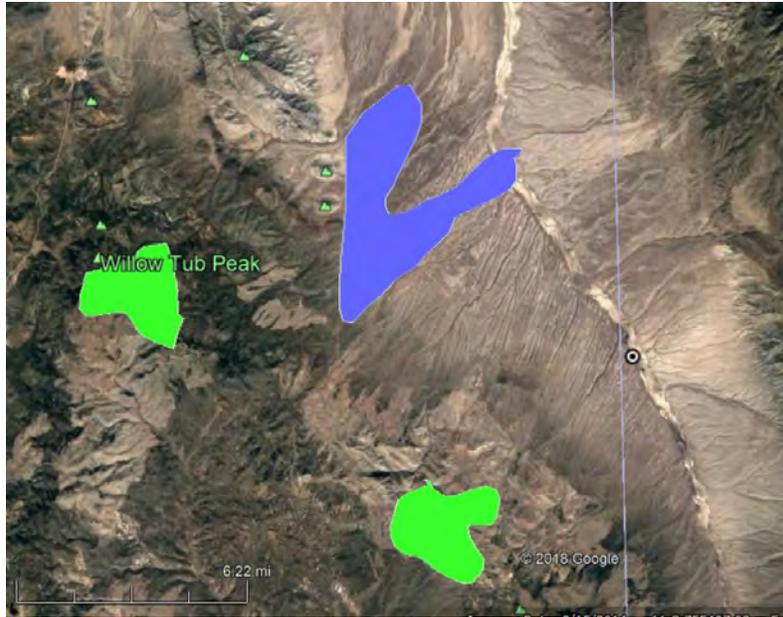


Figure 14. Areas of high overall use (blue) and apparent summer habitat (green) in Hamlin Valley.



Figure 15. Corridor of most dense sage-grouse habitat use in Cave Valley.

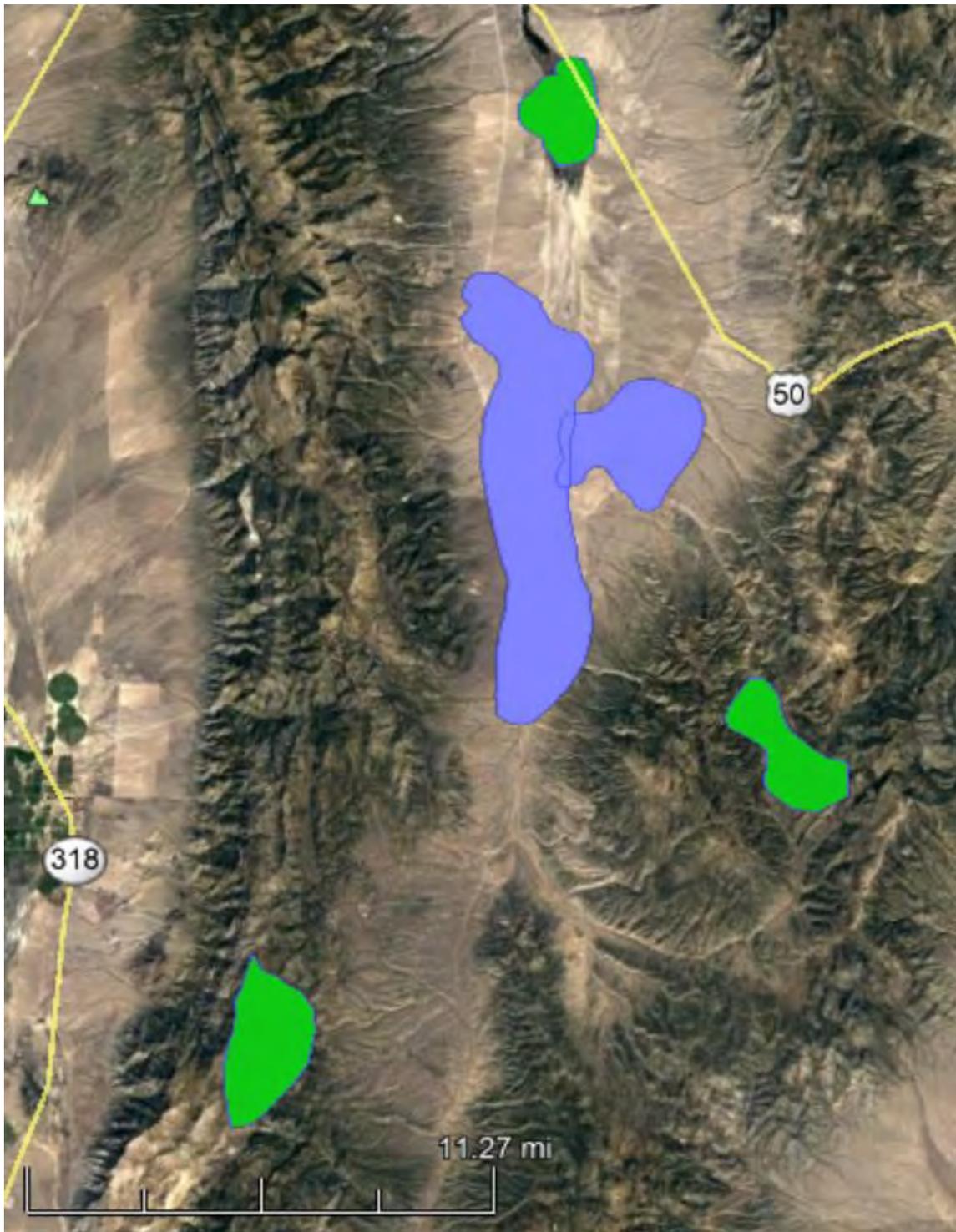


Figure 16. Seasonal distribution of sage-grouse use within Steptoe Valley (green-summer; blue-breeding/winter).

## **Italian Creek/Eagle Butte/McGinness Hills Habitat Enhancement Project**

This project consisted of hand cutting, lopping, and scattering all phase 1 and phase 2 pinyon pine and juniper trees (PJ) on approximately 3,850 acres within the Toiyabe Sage Grouse Population Management Unit (PMU). This PMU is on BLM- and U.S. Forest Service (USFS) - administered land. More specifically, the work was completed in the Italian Creek, Eagle Butte, and McGinness Hills areas. This project was done to enhance sage grouse habitat by removing encroaching PJ. This treatment will help maintain and enhance the sagebrush-grass vegetative community in the Toiyabe PMU. This project was a collaborative effort between NDOW, BLM, ORMAT-McGinness Hills Wildlife Working Group, and the USFS. A total of \$504,405 was spent on this project, including \$42,500 of Upland Game Bird Stamp funds that were awarded to the McGinness Hills PJ Removal Project and the related PJ Thinning with Bootstraps Crew Project.



*PJ hand thinning in Italian Canyon*

## **Statewide Water Development Maintenance**

The majority of the Statewide Water Development Maintenance funding from the Upland Game Bird Stamp account was allocated towards the purchase of materials to be used in the repair of existing small game water developments (*hereafter*, guzzlers), including guzzlers recently damaged by wildfire. A smaller amount of funding was allocated towards tools needed to complete repairs, and maintenance of state-owned ATVs/UTVs used by state personnel to access remote sites where small game guzzlers are located. NDOW water development staff conducted 443 aerial inspections, 27 ground inspections, and one major maintenance or rebuild. Inspections often include completion of minor maintenance activities

that commonly includes mucking out tanks/drinkers, clearing brush, and tightening fences or aprons.

### **Post- Fire Upland Habitat Restoration – Gold Butte**

During the late fall of calendar year 2018 through the spring of calendar year 2019, this project's expenditures were approximately \$16,000 on restoration work near small game guzzler sites located in Clark County's Gold Butte region. A total of 7 Gold Butte guzzler sites were determined to be candidates for post-fire restoration. These sites included GB01, GB04, GB07, GB09, GB11, GB26, and GB27. Habitat Staff worked with the Friends of Gold Butte organization to implement a volunteer event in conjunction with the BLM for National Public Lands Day. Habitat staff provided materials, plants, water, equipment, labor, technical and logistical support. The species that were planted were grown with BLM specified hyper local seed (seed from the actual area). These species include: catclaw acacia, white bursage, burro bush, creosote, threadleaf ragwort, globemallow, and Mojave aster. An additional 410 plants were installed within 4 sites utilizing contracted crews from the National Conservation Corps/Great Basin Institute. In the future, additional plant replacements, repairs and maintenance to plant cages may be necessary. Planting, watering, maintenance, and monitoring are planned for project guzzler sites during the remainder of FY19 and into FY20 and beyond. Work completed during FY19 is listed below:

- Preparation of sites and planting of 610 native plants divided between specified guzzler sites.
- Installation of new cages and repair of existing plant cages, replacement of dead or damaged plants and hand watering.
- Project monitoring.

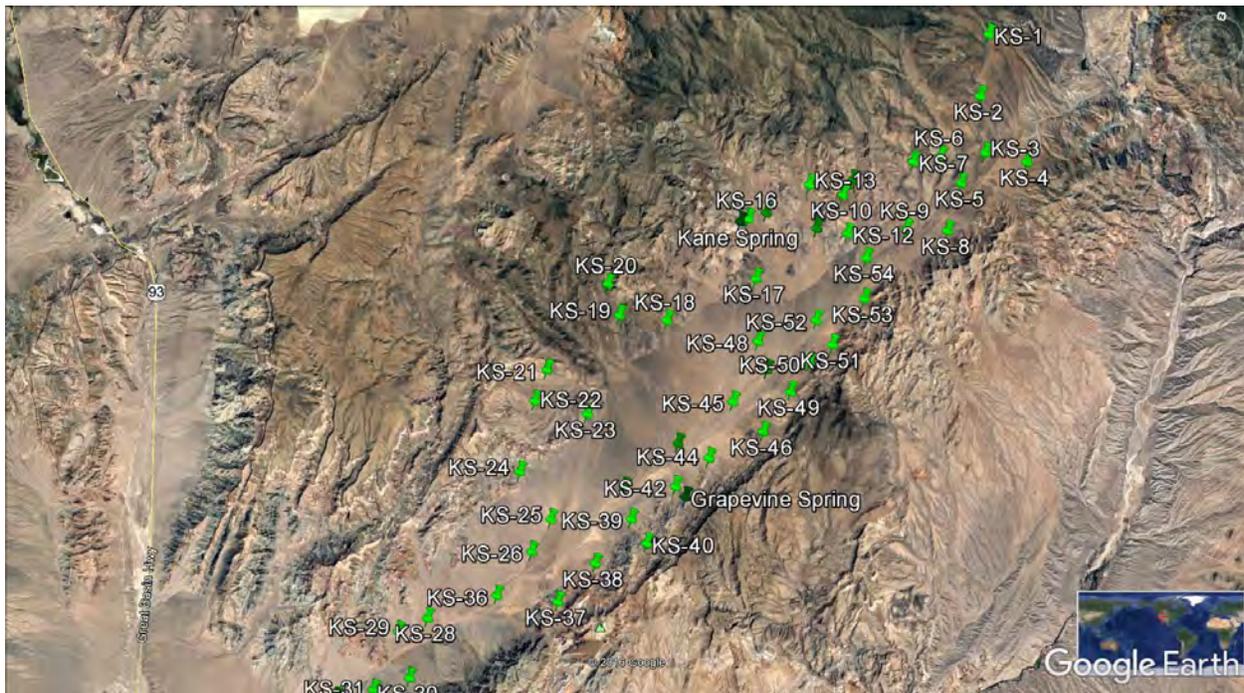


*Gold Butte Guzzler #01*

## Post-Fire Upland Habitat Restoration - Kane Springs Valley

During the late fall of calendar year 2018 through the spring of calendar year 2019, this project spent approximately \$11,000 on restoration activities near small game guzzler sites located in Lincoln County's Kane Springs Valley (see the map below). Monitoring of the restoration sites revealed significant drought damage of up to 60% mortality of the plantings for the FY19 year due to the higher than normal temperatures, limited rainfall, and cattle grazing. However, previous year plantings that have survived are well established. To replace drought-stricken and cattle-damaged plantings, restoration efforts included the replanting of 400 plants divided between four separate small game guzzler site locations, KS37, KS42, KS44 and KS46. Similar to last year, cattle grazing damage had occurred at KS42 and KS44 guzzler sites with impacts on plants and plant cages. In the future, additional plant replacement, repairs and maintenance to plant cages may be necessary. Planting, watering, maintenance, and monitoring are planned for project guzzler sites during the remainder of FY19 and into FY20 and beyond. Work completed during FY19 is listed below:

- Preparation of sites and planting of 400 native plants at specified guzzler sites.
- Installation of new cages and repair of existing plant cages, replacement of dead or damaged plants and hand watering.
- Project monitoring.



*Guzzler Sites in Kane Springs Valley, Lincoln County*

## Evans Creek and Indian Springs Fencing Projects

In the summer of 2018, the Evans Creek Fencing Project was completed protecting approximately 100 acres of crucial riparian and wet meadow habitat. Construction took one month and required all the available funding that was awarded for both the Evans Creek and Indian Springs Fencing Projects. The Indian Springs Fencing Project is still a priority, however the livestock pressure and use at Evans Creek necessitated swifter action.

Efficient access to the interior of the fenced area was made easier for sportsmen and outdoor enthusiasts by installing a cattle guard thereby eliminating many of the associated issues of gate opening and closure. The entirety of the fence was constructed with wildlife-friendly specifications utilizing three strand range fence for those areas away from water and pipe rail fencing where pressure would be greatest close to or in water.

Though funding was depleted before the Indian Springs Fencing Project could be implemented, the project remains a priority and funding requests will be submitted at a later date to complete the project. Funding shortfalls were partly caused by underestimating contract labor costs in remote locations.



## Eastern WMA Complex Weed Control

NDOW is mandated by state law to control listed noxious weeds found on its property. Removal of noxious and other undesirable weeds improves appearance, public access, limits the spread of these weeds to other areas and enhances wildlife habitat. The goal of this project was

to remove noxious/invasive weeds found on the Steptoe Valley, Wayne E. Kirch and Key Pittman Wildlife Management Areas (WMAs).

This project was awarded \$30,000 total (\$10,000 from Habitat Conservation Fee, \$10,000 from Duck Stamp, \$10,000 from Upland Game Bird Stamp). It also utilized funding from a Nevada Department of Agriculture (NDA) grant, funding from Cooperative Weed Management Areas, and funding from NDOW's WMA Federal Grant. Tri-County Weed Control was contracted to assist NDOW personnel in weed control efforts. In total over \$65,000 has been spent on weed treatments on the Steptoe, Kirch, and Key Pittman WMAs so far. It is estimated that an additional \$20,000 (\$10,000 from NDOW's Upland Game Bird Stamp account & \$10,000 from a NDA grant) will be spent this spring bringing the total project cost to just over \$85,000 for this fiscal year. To date, over 800 acres have been treated. Over 1,000 acres will have been treated by the conclusion of the project. Major weeds treated include hoary cress, Canada thistle, Russian knapweed, bull thistle, and phragmites. Other weeds such as Johnson grass, Russian thistle, Scotch thistle, and puncture vine were also treated using this funding.

### **Mason Valley WMA Upland Wildlife Food Plots**

The Mason Valley WMA staff planted 175 total acres of upland food plots during the fall of 2018 and the spring of 2019. Winter wheat was planted in the Mason Valley 9 and Mason Valley 7 units during the fall. Spring food plots were planted in April 2019. Spring food plots consist of 7 units found throughout the WMA. The 7 upland food plots were planted with Millets, sunflowers, and sorghums. A total of \$6,847 of Upland Game Bird Stamp funds was spent on seed as part of this project.

### **Key Pittman WMA Food Plots**

A total of \$3,900 was expended on seed from Upland Game Bird Stamp funds and \$2,600 from Duck Stamp funds. Approximately 60 acres were planted in October with winter wheat, fall 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. An additional 40 acres were planted in January 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 seeded in late February with spring wheat, oats, Ladak alfalfa, and native annual sunflower. The annual seeding projects are completed to increase forage production in wildlife feeding areas on the WMA and to enhance hunter opportunities. This project was completed by NDOW staff.



## Proposed Upland Game Bird Stamp Projects for State Fiscal Year 2020

Title of Proposed Project	Project Manager	\$ Requested from UGBS Account	Other Funding Sources (in-kind contributions included only if quantified)
Greater Sage-grouse Statewide Monitoring	Shawn Espinosa	\$48,710	NDOW's Federal Sage-grouse Conservation Grant (\$202,400); Carson Valley Chukar Club (\$5,000); Nevada Chukar Foundation (\$5,000)
Upland Game Bird Translocation and Monitoring	Shawn Espinosa	\$13,640	NDOW's Federal Game Management Grant (\$31,000); Carson Valley Chukar Club (\$4,464); Nevada Chukar Foundation (\$5,000)
Dusky Grouse Ecology and Management in Nevada	Shawn Espinosa	\$20,000	NDOW's Federal Game Management Grant (\$96,382); Carson Valley Chukar Club (\$4,530); Nevada Chukar Foundation (\$7,598)
Monitoring the Effects of Landscape-Level Treatments on Greater Sage-grouse within the Desatoya Mountains	Shawn Espinosa	\$18,000	NDOW's Federal Sage-grouse Conservation Grant (\$67,500); Carson Valley Chukar Club (\$4,500); USGS in-kind services (\$18,242)
Measuring Corticosterone Metabolites in Greater Sage-grouse	Shawn Espinosa	\$25,000	Nevada Chukar Foundation (\$2,500); Carson Valley Chukar Club (\$2,500); USGS (\$8,000) and in-kind services (\$49,500)
Estimating Sage-grouse Vital Rates within Nevada's Most Novel Habitats	Shawn Espinosa	\$22,500	NDOW's Federal Sage-grouse Conservation Grant (\$67,500); USGS in-kind services (\$22,684)
Effects of Conventional Raven Control and Wildfire on Greater Sage-grouse within the Virginia Mountains	Shawn Espinosa	\$22,500	NDOW's Federal Sage-grouse Conservation Grant (\$67,500); USGS in-kind services (\$11,342)
Monitoring Greater Sage-grouse and Habitat Post-Martin Fire	Shawn Espinosa	\$25,000	Nevada Chukar Foundation (\$25,000); Carson Valley Chukar Club (\$5,000); BLM small grant (\$5,000)
Bi-State Sage-grouse Coordinator	Shawn Espinosa	\$5,000	U.S. Forest Service (\$5,000); BLM (\$5,000); Intermountain West Joint Venture (\$52,775)
Columbian Sharp-tailed Grouse Restoration Project – Population Modeling and Publications	Shawn Espinosa	\$22,250	Carson Valley Chukar Club (\$2,500); Nevada Chukar Foundation (\$5,000); USGS in-kind services (\$62,250)

## Proposed Upland Game Bird Stamp Projects for State Fiscal Year 2020

Title of Proposed Project	Project Manager	\$ Requested from UGBS Account	Other Funding Sources (in-kind contributions included only if quantified)
Response of Greater Sage-grouse to Vegetation Treatments in South Cave, Hamlin and Steptoe Valleys	Shawn Espinosa	\$7,500	NDOW's Federal Sage-grouse Conservation Grant (\$17,500)
Wildfire and Geomorphology Effects on Riparian Habitats and Related Restoration Implications	Jasmine Kleiber	\$10,000	NDOW's Habitat Conservation Fee Account (\$10,000); USDA Agricultural Research Station in-kind services (\$30,000)
A Framework for Restoring and Conserving Great Basin Wet Meadows and Riparian Ecosystems	Jasmine Kleiber	\$10,000	NDOW's Habitat Conservation Fee Account (\$10,000 of new funding; \$40,000 in previously approved funding); BLM (\$60,000); Great Basin Landscape Conservation Cooperative (\$100,000)
Eastern WMA Complex Weed Control	Adam Henriod	\$10,000	NDOW's Duck Stamp Account (\$10,000); NDOW's Habitat Conservation Fee Account (\$10,000); Nevada Dept. of Agriculture (\$25,000)
Post-Fire Upland Habitat Restoration - Tule Springs	Anthony Miller	\$12,500	BLM (\$235,000); NDOW's Habitat Conservation Fee Account (\$12,500)
Post-Fire Upland Habitat Restoration - Kane Springs	Anthony Miller	\$12,500	BLM (\$237,000); NDOW's Habitat Conservation Fee Account (\$12,500)
Quinn River Valley Habitat Enhancement - Vanderhoek Property	Bobby Jones	\$10,000	N/A
<b>Totals</b>		<b>\$295,100</b>	<b>\$1,660,167</b>

## Upland Game Bird Stamp Account Budget Status

Balance in the Account at Start of FY 2019	\$ 528,011
Plus Estimated Revenue Accrued During FY 2019	\$ 266,026
Less Estimated Total FY 2019 Expenditures	(\$ 390,213)
Less Estimated Administrative Costs (10% of Revenue)	(\$ 26,602)
Estimated Balance at End of FY 2019 / Start of FY 2020	\$ 377,222
Plus Estimated Revenue to be Accrued During FY 2020	\$ 266,026
Less Estimated Administrative Costs (10% of Revenue)	(\$ 26,602)
Less Proposed New Project FY 2020 Expenditures	(\$ 295,100)
Estimated Balance at End of FY 2020	\$ 321,546

Notes: The budget information in this table is preliminary and subject to change. The amount of Upland Game Bird Stamp revenue accrued during FY 2019 was not available when this report was prepared; therefore, the FY 2018 revenue number was used for both FY 2019 and 2020.





## Fiscal Year 2020 Wildlife Reserve Account Project Proposal

### *Project Summary*

**Project Title:** *Greater Sage-grouse Monitoring*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account:** \$48,710

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

*Additional State Matching Funds:*

- 1) Carson Valley Chukar Club: \$5,000
- 2) Nevada Chukar Foundation: \$5,000

*Wildlife Restoration Federal Funds:*

Nevada Sage-grouse Conservation Grant (W-64) – Federal Match (75%): \$202,400

**Total Project Cost Not Including In-Kind Donations:** \$236,110

**Total Project Cost Including In-Kind Donations:** \$236,110

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

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 technician, fixed-wing aircraft with infrared telephoto capabilities, and fixed-wing telemetry (VHF) follow-up surveys. As of 2018, there were 1,981 known lek locations identified in the Nevada Statewide Sage-grouse Database (Nevada portion only), of which 745 were considered active (defined as 2 or more males observed during 2 years in a 5 year period), 243 were considered “pending active”, meaning that an additional year of observing 2 or more males is necessary to be considered an active lek, 344 were considered “inactive” status, and 519 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.

#### **II. Project Location including County (include a map if available):**

This work will take place across the range of Greater sage-grouse in Nevada.

#### **III. Land Status: Private or Public? Predominately public lands**

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):** Multiple BLM and USFS Ranger Districts across the range of the species.

**V. UTM Coordinates if Known:** range of Greater Sage-grouse in Nevada

**VI. Project Approach Including Tasks to be Accomplished:**

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=754). 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.

Fixed Wing Infrared Surveys

This relatively new survey technique has proved to be effective over the last three years given advancements in the system and the use of sage-grouse lek habitat modeling using maximum entropy (MaxEnt) methods. This survey technique allows for documenting presence or absence of birds at known leks, number of males and females and also has been effective at detecting new 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.

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 45 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.

**VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

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=754). 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 used on a fixed wing aircraft 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.

**VIII. 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.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> 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).

**X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:** No NEPA compliance is necessary for this particular project.

*Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**XII. Is this Project Going to Continue After FY20?** Yes  No

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:** We anticipate that approximately \$62,000 is necessary for implementing the four specific activities outlined above each year.

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes X No \_\_\_

**XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?** Federal funding for this project would be made available by Pittman-Robertson Sport Fish and Wildlife Restoration. Specifically, the Nevada Department of Wildlife-administered grant labeled "Nevada Sage-grouse Conservation Program" would contribute 75% of the funds for this project.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):** We would be using an existing independent contract with Owyhee Air Research for some of the work. In addition, we would use a State Contract with Man Power for hiring seasonal lek count technicians.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		\$ 121,400.00
B. Other Personnel (Lek Count Techs.)	\$12,960	\$ 5,000.00
C. Total Personnel Costs	\$ 12,960.00	\$ 126,400.00
3. Travel Costs		
A. Per Diem		\$ 2,000.00
B. Mileage		\$ 32,000.00
C. Total Travel Costs	\$ -	\$ 34,000.00
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Infrared Imagery Flights (Lek Search & Survey)	\$ 22,100.00	\$ 17,000.00
B. Fixed-wing Telemetry Survey	\$ 13,650.00	\$ 10,000.00
C. Fixed-wing Telemetry Survey		
D.		
F. Total Miscellaneous Costs	\$ 35,750.00	\$ 27,000.00
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 48,710.00	\$ 187,400.00
Total Project Costs	\$	236,110.00





## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### ***Project Summary***

**Project Title:** *Upland Game Bird Translocation and Monitoring*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account(s):** \$13,640

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

Carson Valley Chukar Club: \$4,464

Nevada Chukar Foundation: \$5,000

(NDOW) USFWS-WSFR Federal Game Management Grant: \$31,000

**Total Project Cost Not Including In-Kind Donations:** \$54,104

**Total Project Cost Including In-Kind Donations (if applicable):** \$54,104

### ***Project Proposal***

#### **I. Purpose of Project and Goals to be Achieved:**

The overall goal of this project is to increase population redundancy and resiliency of certain upland game species, particularly mountain quail, ruffed grouse, and wild turkey within suitable and appropriate habitats across Nevada's landscape. Since 2008, the Nevada Department of Wildlife has released approximately 1,050 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 99 Merriam's turkeys (Lander County). 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 traditional non-consumptive uses as well.

**II. Project Location including County (include a map if available):**

Mountain Quail

The priority release site for 2018/2019 is the Snake Range within Hunt Unit 114 situated in the eastern portion of White Pine County. Habitat conditions during the fall/winter of 2018 will dictate whether or not a release is warranted. Proposed release sites include Hendry's Creek, Silver Creek or Negro Creek in this mountain range. A final determination on which of these three canyons will be selected will be made during further habitat evaluation during the summer of 2018.

Ruffed Grouse

Two sites are considered a priority for augmentation. The first being the Pine Forest Range located in northwestern Humboldt County. This augmentation would follow an initial release conducted in 2014. Subsequent monitoring has documented the presence of birds in low numbers and an augmentation is recommended for this population to help achieve sustainability.

Merriam's Turkey

There are also two areas identified in the biennial upland game release plan (FY2018 & 2019) for release of Merriam's turkeys. The highest priority release site is Hendry's Creek in the Snake Range located in Hunt Unit 114 of eastern White Pine County. This is an extensive drainage system with a perennial water source and diverse habitat. Given the success of Merriam's turkeys in neighboring Hunt Unit 115 and similarity of habitat, it is believed that turkeys will do well in Hendry's Creek as well.

The second release site is within the south Ruby Mountains in Hunt Unit 103 in southern Elko County. There is currently an existing population of turkeys in this area; however, their population is considered somewhat low for the available habitat. An augmentation of Merriam's turkeys into this population is likely to have a positive effect.

**III. Land Status: Private or Public?** Most of the releases described above will take place on public lands; however, some have the potential to take place on private lands in collaboration with specific landowners.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)**

**V. UTM Coordinates if Known:** (see project location description in line II above)

**VI. Project Approach Including Tasks to be Accomplished:**

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.

Mountain Quail

We propose to obtain approximately 100 mountain quail from western Oregon through the use of a contract capture vendor. Capture attempts within Nevada could occur for translocation purposes if conditions are conducive to a successful effort. Mountain quail may be held over at the Mason Valley Wildlife Management Area during the winter and early spring for release in late February or

early March depending on habitat and access conditions, or released immediately upon translocation to Nevada. A proportion (20-30%) of the mountain quail may be marked with VHF telemetry units to help determine survival rates and habitat usage. Fixed wing telemetry surveys will be conducted monthly for the life of the units to determine mortality rates and distribution from the release site.

#### Ruffed Grouse

We propose to capture 20-30 ruffed grouse, likely in the Santa Rosa Range to augment a recent 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 (n=5 to 8 each) 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 units to monitor for survival and dispersal from the release site.

#### Merriam's Turkey

Source stock or Merriam's turkeys have been made available to Nevada through the Colville Confederated Tribe located in eastern Washington for the past two years. Ninety-nine turkeys were released into the northern Toiyabe Range in 2017 and 2018. The majority of capture work has been conducted by the Colville Confederated Tribal personnel with partial transportation of birds to a "halfway point". We hope to continue this relationship into 2019 and 2020.

Monitoring activities will include aerial telemetry surveys of radio-marked birds within both the Toiyabe Range and 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.

### **VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

Expanding the distribution of mountain quail and 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 177 turkey tags were issued for the spring 2018 hunt and the number of applicants far exceeds that number. Providing sportsmen with alternative choices and expanded opportunity would help alleviate the demand deficit.

### **VIII. Project Schedule:**

Mountain quail capture work would be conducted by a contracted capture venter (Relocator LLC) near Roseburg, Oregon. Birds are expected to be captured during November and December of 2019, held in Roseburg at the Oregon Department of Fish and Wildlife office and then transported by

NDOW personnel to either Mason Valley Wildlife Management Area to a holding facility or to the release sight if conditions are deemed appropriate (adequate forage availability, moderate weather conditions, etc.).

Ruffed grouse capture efforts would commence in late summer or early fall of 2019 (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 2019 or January of 2020 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.

**IX. Relationship to NDOW Plans, Policies and Programs:**

The following documents were used while developing this proposal:

- Nevada Upland Game Species Management Plan (2008);
- Upland Game Release Plan for FY2018-19;
- NDOW's W-48 and W-64 Federal Assistance Grants (Pittman-Robertson);

**X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:**

A BLM Categorical Exclusion was obtained for the mountain quail release within Hendry's Creek of the Snake Range. Ruffed grouse releases would take place on private lands within the Pine Forest Range in Humboldt County.

*Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**XII. Is this Project Going to Continue After FY20?** Yes  X  No \_\_\_\_\_

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  X  No \_\_\_\_\_  
Until objectives are fulfilled

**XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project's Lifespan:** We estimate that the cumulative annual expenditure on this project is approximately \$25,000 to \$35,000.

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes  X  No \_\_\_\_\_

- XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?** Federal funds would be made available through the Pittman-Robertson Sport Fish and Wildlife Restoration Program. More specifically the Nevada Federal Game Management grant (W-48).
- XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**  
A sub-grant agreement is currently in place with The Relocator, LLC located in Myrtle Creek, OR to conduct mountain quail capture work.
- XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates:**

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		\$ 25,416.00
B. Other Personnel		
C. Total Personnel Costs	\$ -	\$ 25,416.00
3. Travel Costs		
A. Per Diem		\$ 3,584.00
B. Mileage		
C. Total Travel Costs	\$ -	\$ 3,584.00
4. Equipment		
A. VHF radio transmitters (20 @ \$200/ea.)	\$ 2,000.00	\$ 2,000.00
B.		
C. Total Equipment Costs	\$ 2,000.00	\$ 2,000.00
5. Materials		
A. Capture materials (ruffed grouse)		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Capture Vendor (Relocator LLC)	\$ 8,000.00	
B. Telemetry Flights (24 hours @ \$364)	\$ 3,640.00	\$ 9,464.00
C.		
D.		
F. Total Miscellaneous Costs	\$ 11,640.00	\$ 9,464.00
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 13,640.00	\$ 40,464.00
Total Project Costs	\$	54,104.00

\*NDOW personnel and per diem costs will be covered by the Game Management Grant funded through the USFWS Wildlife Restoration Program. Transmitters will be covered by a combination of NDOW Special Reserve and Sportsmen's Organizations such as the Nevada Chukar Foundation or Carson Valley Chukar Club.



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title:** Dusky Grouse Ecology and Management in Nevada

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account:** \$20,000

**Funds to be Used from Other Funding Sources (please itemize the amount by source):** \$97,104;

Indirect costs applied by Utah State University will be reduced by 22.1% from 39.6% down to 17.5%. This 22.1% can be considered an applicable match requirement for U.S. Fish and Wildlife Service – Wildlife Restoration Grant funding; therefore, just 2.9% state match is required to meet the 25% match requirement.

Other sources of funding include:

- Nevada Chukar Foundation - \$7,598
- Carson Valley Chukar Club - \$4,530

**Total Project Cost Not Including In-Kind Donations:** \$128,510

**Total Project Cost Including In-Kind Donations (if applicable):** \$128,510

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

Dusky grouse (*Dendragapus obscurus*) are currently an important upland game resource in Nevada whose ecology is not well understood. Blue grouse were recently split into two distinct species; dusky grouse (interior) and sooty grouse (*Dendragapus fuliginosus*; coastal) (Barrowclough et al. 2004). Both species of blue grouse currently occupy Nevada, with sooty grouse occurring on the western edge of the state in the Sierra Mountain Range and dusky grouse occupying relatively isolated mountain ranges to the east.

The vast majority of past research on blue grouse occurred several decades ago and with the sooty variety. There remains a lack of research-based information on dusky grouse biology and life history, especially the effects of management actions (e.g., hunter harvest, livestock grazing, fire, and timber management) to guide future conservation efforts. Based on the limited knowledge we have, dusky grouse use multiple vegetation cover types to meet their seasonal needs including

sagebrush (*Artemisia* spp.), aspen (*Populus tremuloides*), and conifer areas from low to high elevations in mountainous terrain (Stauffer and Peterson 1985, Pekins et al. 1989). There are few dusky grouse nesting studies, which would illuminate habitat use and key nest survival factors, although anecdotal information suggests sagebrush may be an important nesting habitat type for dusky grouse (Weber 1975). This lack of ecological information is particularly acute in the isolated populations of central and eastern Nevada, where habitat types are unique to these mountain ranges with relatively low proportions of aspen and relatively high proportions of mahogany (*Cercocarpus* spp.) and limber pine (*Pinus flexilis*). Apparently, dusky grouse show some flexibility in habitat use based on their wide range across the forested landscapes of the Intermountain West.

Dusky grouse are known to exhibit 'reverse migration' moving up in elevation to winter exclusively in conifer forests (Cade 1985, Stauffer and Peterson 1985, Cade and Hoffman 1990, Pekins et al. 1991, Cade and Hoffman 1993). For other forest grouse species, such as ruffed and spruce grouse (*Falcipennis canadensis*), winter diets and use areas are influenced by secondary plant compounds in aspen and spruce trees, respectively (Bryant and Kuropat 1980, Hewitt and Messmer 2000). These relationships are currently unknown for dusky grouse.

There is also a lack of life history and population trend information on dusky grouse throughout their range, particularly in Nevada, leaving the species vulnerable to critique if/when future conservation concerns arise. For example, Greater sage-grouse (*Centrocercus urophasianus*) populations currently have an abundance of data-based information because of past collaborative monitoring and research efforts. These data have been critical to current conservation efforts for sage-grouse in Nevada, and across their range. Our proposed research herein would provide an initial step to gaining a scientific knowledge base for future management (e.g., harvest, population monitoring, habitat management etc.) of dusky grouse in Nevada.

This project is proposed to be a 4-year project (3 field seasons and a year of analysis) focused on the highest priority conservation information needs of the Nevada Department of Wildlife (NDOW) concerning dusky grouse. Needed information includes, but may not be limited to, harvest rates, population monitoring, survival and reproductive rates, and habitat selection. We are particularly interested in the use of limber pine and sub-alpine fir (*Abies lasiocarpa*) patches during the winter in relation to beetle kill, and overall use of mountain mahogany.

Our goal for this research project is the long-term conservation of dusky grouse populations through increased knowledge of the species.

Our specific objectives for this study are:

- Survival, Reproductive, and Harvest Rates – determine life stage annual and seasonal survival rates, including harvest rate during the fall hunting season, and female reproductive (i.e., nest initiation, clutch size, nest success, and brood success) rates of dusky grouse for radio-marked and banded dusky grouse and assess environmental factors that affect these vital rates.
- Population Surveys - develop a rigorous protocol to index breeding populations of dusky grouse and use male display location information to help characterize breeding habitats.
- Habitat Selection – utilize location data of individually radio-marked dusky grouse to perform resource selection functions (RSFs) to characterize annual and seasonal habitat use. Specifically, to assess use of limber pine sub-alpine fir habitats during winter months and

year-round use of mountain mahogany habitats. We will also characterize micro-habitats (within 50 m) for nest and brood locations.

**II. Project Location including County (include a map if available):**

Our primary study areas will be located in the U.S. Forest Service, Humboldt-Toiyabe National Forest - Ely Ranger District in the Schell Creek and Ranges located in White Pine County (Figure 1).

**III. Land Status: Private or Public? Public Lands**

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):** See item II above.

**V. UTM Coordinates if Known:** This project encompasses a fairly broad area within the Schell Creek and Egan Ranges in White Pine County, NV.

**VI. Project Approach Including Tasks to be Accomplished and Target Species:**

Survival, Reproductive, and Harvest Rates – we will use walk-in traps and noose poles to catch, band (aluminum leg bands), radio-mark and release dusky grouse throughout the spring, summer, and early fall (Zwickle and Bendell 1967, Schroeder 1986, Pelren and Crawford 1995). Dogs will be used to help locate dusky grouse for trapping efforts (Dahlgren et al. 2012). We expect to radio-mark and maintain a sample of approximately 25-30 female dusky grouse. We will use GPS rump-mount style radios (Ecotone - <http://www.ecotone-telemetry.com>; Harrier L and M models) that employ store-on-board location data logger and UHF long range remote download. A small 3.5 gram VHF radio will be attached to the GPS radio to help track individual dusky grouse to perform remote downloads. Once our radio sample is exhausted we will continue to trap dusky grouse and mark them with an aluminum leg band. All captured male dusky grouse will be banded with an aluminum leg band. We will use standard modeling (e.g., program RMARK) to estimate seasonal and annual survival. We will track females to nest and brood sites to estimate reproductive rates. Nest and brood success will be defined as 1 or more egg or chick hatching or surviving to  $\geq 35$  days. Although we will attempt to estimate harvest based on hunter band returns, it will likely take more than three years of data to estimate harvest rate. Band recovery rates will need to be adjusted for pre-season mortality rates, crippling loss, and non-reported bands (see example in DeStefano and Rusch 1986). We will use the multiple-recapture method to estimate pre-hunting season survival (Seber 1973). Having a radio-marked sample may also help us understand factors that may influence harvest rate, such as documenting the annual variation in onset of fall migration (see Appendix A; Mussehl 1960). Crippling loss will be estimated with radio-marked sample if available, or assumed from reported literature of other grouse species. Non-reporting rates for bands will be assumed from available game bird literature.

Population Surveys - we will use past research and our own experience to develop spring breeding surveys to index population change. Currently, there are no published methods or guidelines for dusky grouse population surveys. We will establish breeding season walking and roadside routes in several locations across the study area. Hierarchical modeling procedures which incorporate occupancy and abundance estimates will be our primary breeding season index. Points along routes will be established and detection of male dusky grouse will occur in three 5 minute consecutive intervals. We will also employ female electronic calls following the 15 minute sampling

interval to increase detection rates of dusky grouse males. These methods allow for occupancy estimates which provide detection probabilities and then counts of each species will provide the abundance information (Alldredge et al. 2007). We will conduct a power analysis following data collection to better understand the effort needed to obtain reliable information for each survey type (Steidl et al. 1997). Protocols will be reassessed over time based on our findings.

Habitat Selection – we will use radio-marked and non-marked grouse flush locations to assess seasonal habitat characteristics. We will use standard techniques to assess tree cover, shrub cover, herbaceous cover, and other ground cover characteristics to assess micro-site information for brood and nest sites. We will use GPS location data and spatial vegetation cover data to conduct RSF analysis to determine general (2<sup>nd</sup> order) and seasonal habitat (3<sup>rd</sup> order) use at the landscape scale. We will ensure that analyses include limber pine, sub-alpine fir, other conifers, aspen, sagebrush, and mountain shrub communities, including mountain mahogany, are included in the analysis. We will use the “Guidelines to the use of Wild Birds in Research” for this research project (Fair et al. 2010). We will work through USU’s Institutional Animal Care and Use Committee (IACUC) to obtain an IACUC permit for all trapping, handling, and field research activities. This study will begin April 2018 and continue through June 2021. We anticipate developing a capture and banding database for dusky grouse. We will also develop a monitoring database for both spring breeding and late summer surveys. All databases will be housed at Utah State University but shared openly with NDOW Upland Game Program Managers.

**VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

Gaining a better understanding of dusky grouse demographic parameters and habitat use will help resource managers potentially improve habitat conditions through management actions or projects. Noticeable limber pine and sub-alpine fir die-offs have occurred in several central and eastern Nevada mountain ranges and we need to gain a better understanding of whether or not this is contributing to mortality during the winter months, when dusky grouse diet rely on pine needles as a food source, or if grouse are able to use other resources such as mountain mahogany to supplement their diet. If pine and fir die offs are contributing to elevated mortality levels in dusky grouse, perhaps actions such as limber pine plantings in key locations would provide habitat in future years.

**VIII. Project Schedule (including start and end dates and major milestones):**

This project was initiated with the hiring of a graduate student (Stephanie Landry) in January of 2018 followed by trapping in April of that year. Breeding surveys were conducted from mid to late April and continued through early June in 2018. Trapping efforts will continue throughout the field season from April to September (2019-2020). Marked grouse will be monitored during the spring and summer field seasons. Aerial (fixed-wing or helicopter) monitoring of radio-marked birds will occur regularly during the fall and winter and periodically through the spring and summer, especially when ground tracking fails to keep track of radio-marked birds. Bands will be collected throughout the 2018, 2019, and 2020 dusky grouse hunting seasons. Data analysis and writing will be conducted from September 2020 to June 2021. The graduate student will complete and defend their dissertation by June 30, 2021.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project was identified as a population management need identified in the 2008 Nevada Upland Game Species Management Plan

- X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and Their Status:** No NEPA documents were required by the U.S. Forest Service for this particular project, categorized as a research and monitoring project.

*Project Costs and Funding*

**XI. Cost Summary (briefly describe the project’s major types of spending):**

The total budget for this 4-year project would be \$457,990. Utah State University’s standard overhead rate of 39.6% will be reduced to 17.5% for the project, waiving 22.1% points of the regular overhead. The waived overhead can be used as non-federal match for PR funding.

Hourly wages will be paid to several technicians each year over the course of the two year project. The student will be paid a monthly stipend and tuition costs will be covered. Travel will consist of daily trips in two rental trucks within the study area, as well as travel to and from Logan, UT and the study area. Within the study area we will use ATVs and UTVs, monthly fee, to access remote areas. Additionally, travel will include professional meetings and conferences to present study results. For materials and supplies we will purchase items such as: GPS units, walk-in traps, trapping implements (noose poles, bags, scales, scissors, pliers, etc.), GPS/GIS mapping software, paper and printing materials for data sheets, field note books, first aid kits, backpacks, hammers, vegetation measuring tools, batteries etc.

- XII. Is this Project Going to Continue After FY20?** Yes  No

- XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project’s Lifespan:**

- FY2018 = \$108,690
- FY2019 = \$134,879
- FY2020 = \$132,269
- FY2021 = \$82,152

**XII. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes  No

**XIII. If Yes, Which Federal Grant Would the Matching Funds Be Used For?**

Nevada Game Management Grant – Upland Game Management (U.S. Fish and Wildlife Service Wildlife Restoration Grant) (W-48)

## Project Cost Breakdown

Please provide a breakdown of the project's *total costs over the life of the project* in the table below. Define the total to be spent during each fiscal year in your response to question XI on the previous page. Only include in-kind contributions under item 7 in the table below. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$9,484.00	\$ 48,929.00
C. Total Personnel Costs	\$ 9,484.00	\$ 48,929.00
3. Travel Costs		
A. Per Diem	\$ 150.00	\$ 850.00
B. Mileage		
C. Total Travel Costs	\$ 150.00	\$ 850.00
4. Equipment		
A. GPS Radios (5 @ \$3,525)	\$2,644.00	\$14,981.00
B. GPS Refurbs (5 @ \$500 ea.)	\$ 375.00	\$ 2,125.00
C. Total Equipment Costs	\$ 3,019.00	\$ 17,106.00
5. Materials		
A. Trapping Materials (nets, nooses)	\$ 38.00	\$ 212.00
B. Other Materials (tools)	\$ 300.00	\$ 1,700.00
C.		
D. Total Materials Costs	\$ 338.00	\$ 1,912.00
6. Miscellaneous Costs		
A. Truck - Monthly Fee (2 trucks, 5 mo/ea. @ \$2,000)	\$ 3,000.00	\$ 17,000.00
B. ATV - Monthly Fee (3 ATVs - 5 mo/ea @ 250)	\$ 563.00	\$ 3,188.00
C. ARGOS Woodshole Download Fees	\$ 720.00	\$ 4,080.00
D. 17.5% Indirect Costs	\$ 2,726.00	\$ 15,445.00
F. Total Miscellaneous Costs	\$ 7,009.00	\$ 39,713.00
7. In-Kind Contributions		
A.		
B.		
C. Total In-Kind Contributions	\$ -	\$ -
Subtotals	\$ 20,000.00	\$ 108,510.00
Total Project Costs	\$	128,510.00



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### ***Project Summary***

**Project Title:** *Monitoring the Effects of Landscape-Level Treatments on Greater Sage-grouse within the Desatoya Mountains of Central Nevada*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from each Special Reserve Account(s):** \$18,000

**Funds to be Used from Other Funding Sources (please list by source):**

- Carson Valley Chukar Club: \$4,500
- Nevada Sage-grouse Conservation Grant (W-64) – Federal Match (75%): \$67,500

**Total Project Cost Not Including In-Kind Donations:** \$90,000

**Total Project Cost to be Funded by All Sources:** \$108,242

### ***Project Proposal***

#### **I. Purpose of Project and Goals to be Achieved:**

Cooperative efforts are underway to improve habitat conditions in the Desatoya Range located in central Nevada (Churchill/Lander County border). The Bureau of Land Management, Smith Creek Ranch, Nevada Department of Wildlife and Natural Resources Conservation Service are all engaged in supporting various habitat and management related projects for vegetative and wildlife health. To better understand the effectiveness of these projects, we have been actively monitoring the sage-grouse population within the Desatoya Range for the last three years. As habitat related projects are implemented, it is important to continue monitoring sage-grouse habitat usage and vital rates to determine the ultimate effects to the species.

Measuring how intended landscape improvement projects ultimately affect target species such as sage-grouse is critically important with respect to adaptive management. Information gained from this project will not only identify important seasonal use areas, movement and potential connectivity corridors to other adjacent populations of sage-grouse, but also help understand the response to various treatments or management actions including pinyon/juniper removal, meadow enhancement and wild horse removal.

Being that the primary purpose of the proposed action is to improve availability, quantity, and quality of sage-grouse habitat, in particular late brood rearing habitat that is dependent upon springs/wet meadows that support abundant and diverse forb and insect populations, continued monitoring of the sage-grouse population within this area will ultimately be the measure of success, failure or neutral effect of the overall project.

This project is intended to better understand habitat utilization, identify key habitats and determine movement patterns of sage-grouse between these areas and determine vital rates within the Desatoya Population Management Unit. The greatest threat to this population of sage-grouse is pinyon and juniper encroachment and the degradation of small meadows and spring complexes that serve as late brood rearing habitat. Research efforts are expected to lead to the identification of factors limiting this population and habitat associations including:

1. Capture/maintain approximately 20-30 female sage-grouse marked with VHF radio transmitters per year;
2. Capture at least 10 female sage-grouse and place GPS/Satellite transmitters to determine 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) examination of nest-site vegetative characteristics and if differences exist between successful and unsuccessful nest sites;
- c) determination of nest survival rates;
- d) determination of survival rates of adults and juveniles (both male and female); and
- e) determination of differences of seasonal survival rates

**II. Project Location including County (include a map if available):**

The Desatoya Range is located on the border of Churchill and Lander County in central Nevada. The preponderance of the project area will be located on the eastern slope of the range (Lander County). Much of the radio-marking work will take place within the vicinity of the Smith Creek Ranch with some work taking place on the western flank of the range near Rock Creek and in the southern portion of the range near Buffalo Creek.

**III. Land Status: Private or Public?** The study area is mostly composed of public lands; however, a proportion is private associated with the Smith Creek Ranch. This is a collaborative project with the Smith Creek Ranch.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)**

Public lands associated with the Desatoya Mountains are managed by the BLM – Carson City District

**V. UTM Coordinates if Known:** This is a fairly large study area that would best be described by a polygon.

## VI. Project Approach Including Tasks to be Accomplished:

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 (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.

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<sup>2</sup>, 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.

**VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

This project will help understand sage-grouse habitat utilization prior to and during a landscape scale project that the Bureau of Land Management is conducting in the Desatoya Range of central Nevada. There are several collaborators on the project including, but not limited to, the Nevada Department of Wildlife, the U.S. Fish and Wildlife Service and the Smith Creek Ranch. The BLM project area is approximately 230,000 acres within the Porter Canyon and Edwards Creek grazing allotments. There are 192,700 acres of the Desatoya sage-grouse Population Management Unit (PMU) and 34,195 acres of the Desatoya Wilderness Study Area within the project area.

Approximately 30,000 acres of various treatments are proposed within the project area. While the project's primary focus is to enhance sage-grouse habitat, multiple wildlife species dependent upon healthy forests and sagebrush communities will benefit. Treatments will include piñon/juniper removal and thinning, wet meadow and spring rehabilitation/protection, potential rabbitbrush control using herbicide treatment and seeding, and excess wild horse removal. It will be important to monitor sage-grouse movement and demographic parameters before, during and after project implementation.

**VIII. Project Schedule (including start dates and end dates and major milestones):**

Initial capture efforts were conducted in early fall of 2013 and re-commenced during the spring months of 2014. Follow-up of radio marked individuals has taken place each year since the inception of the project. More intensive monitoring has occurred during the spring breeding period through late brood rearing (August/September). During the late fall and winter months, follow-up monitoring has been conducted using a contracted fixed-wing aircraft to monitor locations and mortality. State fiscal year 2020 will be the seventh year of this monitoring effort. We anticipate this research effort to last eight to ten years.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> Edition of the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (2004).

**X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:**

National Environmental Policy Act compliance for sage-grouse monitoring has been addressed in NDOW's Sage-grouse Conservation Project grant program. Habitat improvement projects taking place on public lands within the project area have been documented through the BLM Carson City District and Battle Mountain District offices.

*Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**XII. Is this Project Going to Continue After FY20?** Yes  No

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:** Approximately \$90,000 per year (75% Wildlife and Sport Fish Restoration = \$67,500; 25% State Match = \$22,500) will be spent on this project for up to a 10-year period.

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**  
Yes  No

**XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?** Federal funding for this project will be made available through the Pittman-Robertson Sport Fish and Wildlife Restoration Program. Specifically, the federal match (75%) will be made available through the Nevada Department of Wildlife administered "Nevada Sage-grouse Conservation Program" grant.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):** A subgrant with Great Basin Bird Observatory is in place to fund research technician crews working under the U.S. Geological Survey – Western Ecological Research Center.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

### Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$10,813.00	\$ 50,438.00
C. Total Personnel Costs	\$ 10,813.00	\$ 50,438.00
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. VHF Transmitters (30 @ \$225/ea.)	\$ 1,687.00	\$ 5,062.00
B. Vehicles (2 @ 10,500 per 6 month field season lease)	\$ 5,250.00	\$ 15,750.00
C. Total Equipment Costs	\$ 6,937.00	\$ 20,812.00
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Field Housing	\$ 250.00	\$ 750.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 250.00	\$ 750.00
7. In-Kind Services		
A. USGS Research Wildlife Biologist (Permanent, 0.1 FTE)		\$ 6,417.00
B. USGS Wildlife Biologist (Term, 0.1 FTE)		\$ 4,925.00
C. Travel (Per-diem)		\$ 1,500.00
D. Additional equipment (radio receivers, antennas, banding supplies, etc)		\$ 5,400.00
Total In-Kind Services	\$ -	\$ 18,242.00
Subtotals	\$ 18,000.00	\$ 90,242.00
Total Project Costs	\$	108,242.00



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### ***Project Summary***

**Project Title:** *Measuring Corticosterone Metabolites in Greater Sage-grouse*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account(s):** \$25,000

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

*Additional State Matching Funds:*

- 1) Carson Valley Chukar Club: \$2,500
- 2) Nevada Chukar Foundation: \$2,500

*Federal Funds:*

- 1) USGS: \$8,000 for lab work
- 2) USGS In-kind Services: \$49,500

**Total Cost Not Including In-Kind Donations:** \$35,500

**Total Project Cost Including In-Kind Donations (if applicable):** \$85,000

### ***Project Proposal***

#### **I. Purpose of Project and Goals to be Achieved:**

The purpose of this project is to measure glucocorticoid hormone corticosterone (CORT) in sage-grouse from fecal, blood and potentially feather samples to help gauge stress levels in various populations. We are particularly interested in collecting and analyzing CORT samples in the Montana Mountains or north central Nevada to establish baseline levels prior to the establishment of a proposed lithium mine in the Thacker Pass area of Humboldt County. Beyond sample collection here; however, funding for this proposal will also assist with analysis of CORT samples collected from various other study sites in Nevada (see project locations below).

Measurements of CORT can assist with determining sage-grouse physiological response to habitat conditions in a relatively short time scale when compared to vital rate evaluations, thus providing a means to identify at risk populations (Ricklefs and Wikelski 2002). Chronic elevations of basal CORT can lead to reduced fecundity (Greenberg and Wingfield 1987). Post analyses, CORT level parameters can be used as an explanatory variable in population modeling and help better

understand the effects of anthropogenic disturbances such as mines, transmission lines, energy development facilities and roads as well as natural disturbances such as fire.

**II. Project Location (include a map if available):**

The majority of collection work associated with this proposal will take place in the Montana Mountains located in Humboldt County, Nevada. However, funding from this proposal would also assist with the analysis of samples collected from various other sage-grouse study sites across Nevada including the following:

- Virginia Mountains (Washoe County);
- Mount Grant and Desert Creek PMUs within the Bi-State Distinct Population Segment (Lyon and Mineral County);
- Desatoya Mountains (Churchill and Lander County);
- Massacre/Sheldon (Washoe County);
- McGinness Hills (Lander County);
- Monitor Valley (Nye County);
- Montana Mountains (Humboldt County);
- Santa Rosa Range (Humboldt County);
- Tuscarora/Independence Valley (Elko County)

**III. Land Status: Private or Public?**

Study areas are located predominately on public lands managed by the BLM.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):**

The northwestern Nevada monitoring site is managed by the BLM – Susanville District.

The Montana Mountains study site is managed by the BLM – Winnemucca District.

The Toiyabe Range study site is managed by the BLM – Battle Mountain District.

**V. UTM Coordinates if Known:** these project areas are better represented by polygons rather than points.

**VI. Project Approach Including Tasks to be Accomplished:**

Sample collection in the Montana Mountains will begin with the capture and radio-marking of females (approximately 10-20) during the fall of 2019. Blood and feather samples can be collected at this time while fecal samples may be collected from roost piles subsequent to capture. Nighttime locations will be identified and samples collected early the next morning (preferable before full sunlight exposure). Samples will also be collected during winter and spring (lekking/nesting season) and potentially during the brood rearing period depending on survival. Fecal samples from various lek locations within the Montana Mountains will also be collected during the spring of 2019 per the methodology described below.

To assess variation in corticosterone levels within and among populations of sage-grouse across Nevada and California, we will collect fecal samples from 4–6 active leks per field site at multiple times during the lek survey season. Because male sage-grouse are “tied” to leks during early portions of the breeding season their corticosterone levels provide a reliable measure of geographically proximate stressors. That is, we are interested in answering the question, how does the distance to an environmental stressor (i.e. road, geothermal plant, cliff-face, etc) affect

corticosterone levels in male sage-grouse during the lekking season.

For this study, we are collecting fecal samples from males only on leks. These collections can be paired with standard lek counts or the double-triple blind lek-counts and vegetation surveys. For the latter, recover feces from the lek when you are already there, performing habitat surveys. Imperative to this study is that only FRESH feces from the night before, or from the morning of, can be collected. Feces exposed to sunlight and environmental degradation for 16+ hours will provide misleading results, so collected samples MUST be from that morning or the night before. A single sample should consist of a minimum of 5 fecal pellets from roost piles, or single pellets separated by ~ 5m.

## **VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

Monitoring stress levels in sage-grouse can help further our understanding of how the species is responding to certain perturbations on the landscape such as roads, geothermal facilities, mines and wildfire. Over time, thresholds may be able to be determined and potential “early warning signs” could trigger an active or passive management response, depending on habitat condition or activity taking place within proximity to a certain population.

Due to the presence of additional threats to sage-grouse populations on the landscape, we feel it behooves the Nevada Department of Wildlife and interested stakeholders to be as comprehensive as possible with respect to factors affecting the population performance of Greater sage-grouse in Nevada.

## **VIII. Project Schedule:**

*Montana Mountains:*

Fall 2018 –

- Capture and radio-mark 10-20 sage-grouse in the Montana Mountains;
  - Collect feather and blood samples for CORT analysis
- Follow up with fecal sample collection for CORT analysis
- Conduct monthly aerial telemetry survey (October – February)

Spring 2019 –

- Collect fecal samples from lek sites within Montana Mountains
- Collect fecal samples from surviving radio-marked sage-grouse

*Nevada Study Area Populations:*

Fall/Winter

- Analyze samples collected from spring 2019 lekking period

## **IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> 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).

## **X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status: No NEPA compliance is necessary for this particular project.**

## *Project Costs and Funding*

### **XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**XII. Is this Project Going to Continue After FY20?** Yes  No

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:**

We anticipate that approximately \$65,000 is necessary for implementing the four specific activities outlined above each year.

**XV. Would Funds from this Program Be Used for State Matching Purposes?** Yes  No

**XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?** Federal funding for this project would be made available by Pittman-Robertson Sport Fish and Wildlife Restoration. Specifically, the Nevada Department of Wildlife administered grant labeled "Nevada Sage-grouse Conservation Program" would contribute 75% of the funds for this project.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$10,500	
C. Total Personnel Costs	\$ 10,500.00	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		\$ 2,500.00
C. Total Travel Costs	\$ -	\$ 2,500.00
4. Equipment		
A. VHF radio transmitters (20 @ \$225/ea.)	\$4,500	
B.		
C. Total Equipment Costs	\$ 4,500.00	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Cort Analysis	\$8,000	\$ 8,000.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$10,000	\$ 8,000.00
7. In-Kind Services		
A. USGS Personnel Services		\$ 49,500.00
B.		
C. Total In-Kind Services	\$ -	\$ 49,500.00
Subtotals	\$ 25,000.00	\$ 60,000.00
Total Project Costs	\$	85,000.00





## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title:** *Estimating Greater Sage-grouse Vital Rates within Nevada's Most Novel Habitats*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account:** \$22,500

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**  
Nevada Sage-grouse Conservation Program Grant (W-64) – Federal Match (75%): \$67,500

**Total Project Cost Not Including In-Kind Donations:** \$90,000

**Total Project Cost to be Funded by All Sources:** \$112,684

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

Much of the recent research that has been conducted on Greater sage-grouse in Nevada has been in response to some form of anthropogenic structure or disturbance such as the development of utility scale transmission lines, geothermal energy facilities, or mine development and processing. Some of these developments have offered a classic Before, After, Control, Impact (BACI) study design, but many have not. In order to better understand how sage-grouse are responding to anthropogenic disturbances and habitats that are in less than desirable condition, we feel that it is important to gain a more comprehensive knowledge base of demographic parameters and habitat use in areas that are considered in relatively good ecological condition, free from anthropogenic structures (utility scale) and associated noise, and offer contiguous habitat (large, uninterrupted blocks).

This project is intended to determine key demographic parameters and gain a better understanding of habitat utilization and movement patterns within otherwise healthy and un-fragmented sagebrush habitats. Areas that have been selected for research and monitoring generally contain a diverse array of sagebrush species and mountain shrub community with an understory of perennial grasses and forbs. Additionally, little in the way of anthropogenic development has been realized in these areas. Research efforts are expected to lead to the identification of habitat associations and estimation of vital rates over a period of three years. The following describe the objectives and demographic parameters for the project:

1. Capture approximately 25-30 female sage-grouse and place VHF radio transmitters and leg bands on the birds at each study site. At a minimum, maintain that number of radio marked females annually;
2. Capture at least 5 female sage-grouse and place GPS/Satellite transmitters to determine seasonal movement patterns and determine home range at each study site;

This work will assist with determining the following:

- a) determination of survival rates of adults and juveniles (both male and female); and
- b) identification of nest sites and nest initiation rates;
- c) determination of nest survival rates;
- d) examination of nest-site vegetative characteristics and if differences exist between successful and unsuccessful nest sites;
- e) determination of differences of seasonal survival rates; and
- f) understand and map movement patterns, seasonal distribution and key habitats.

**II. Project Location including County (include a map if available):**

This work will take place in central Nevada in northern Monitor Valley and the north-central portion of the Monitor Range including Butler Basin in Nye County.

**III. Land Status: Private or Public?** Public Lands managed by the Bureau of Land Management – Battle Mountain District and U.S. Forest Service – Humboldt-Toiyabe National Forest, Tonopah Ranger District.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):** See item III above.

**V. UTM Coordinates if Known:** The study area cover a fairly broad portion of central Nevada.

**VI. Project Approach Including Tasks to be Accomplished and Target Species:**

Field work for this project will be conducted by the USGS Western Ecological Research Center in Dixon, California. Match funding for this project is being provided by the Nevada Upland Game Stamp program (\$22,500) allowing for the expenditure of \$67,500 of WSFR-PR funds for a total project cost of \$90,000. This will be a multi-year effort (3-5 years) in order to gain enough data from a large enough sample of birds to mitigate the influences of natural variability due to factors such as weather, climate and predation.

*Radio-Telemetry.* We are proposing to capture approximately 20-30 female and up to 10 male sage-grouse annually over a three to five 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. Throughout the nesting and brood-rearing period, researchers will attempt 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%). 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 will visually determine 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.

*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 broods sites. Canopy cover is measured along three 25 m transects, which extended from the brood location every  $120^\circ$  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.

### **Predator Monitoring**

*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.

## **VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

Over the course of this monitoring effort we will be able to estimate sage-grouse vital rates (e.g. nest initiation rates, nest survival rates, male and female survival rates, adult and juvenile survival rates, and brood survival rates) as well as determine important seasonal use areas, movement corridors, and potential connectivity with other adjacent sage-grouse populations within Nevada's most undisturbed and intact sagebrush landscapes. These data can be used for comparison purposes for other ongoing research projects that are currently investigating various forms of anthropogenic disturbance or development such as utility scale transmission lines, geothermal energy development and mining activities/associated infrastructure.

## **VIII. Project Schedule:**

Capture and radio-marking efforts for this project will take place during the spring of each year from early March through April beginning in 2016. Follow-up work will extend from this period through August of each year. Monthly flights to locate radio marked individuals will occur from November through February.

## **IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> Edition of the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (2004).

- X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:** N/A - This is a research and monitoring project.

*Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

- XII. Is this Project Going to Continue After FY20?** Yes  No

- XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

This research and monitoring project is scheduled to take place over an eight year period from FY16 through FY23.

- XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project's Lifespan:**

This project is expected to cost approximately \$90,000 per year to implement.

- XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes  No

- XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?**

Federal funding would be made available through the Pittman-Robertson Sport Fish and Wildlife Restoration grant program. More specifically, this project would be 75% funded by the Nevada Sage-grouse Conservation Grant.

- XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):** A current sub-grant exists with the Great Basin Bird Observatory to fund research technicians crews to conduct capture and field monitoring.

- XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates.**

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$13,687.00	\$ 41,063.00
C. Total Personnel Costs	\$ 13,687.00	\$ 41,063.00
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ 625.00	\$ 1,875.00
4. Equipment		
A. VHF transmitters (30 units @ \$225/ea.)	\$ 1,688.00	5,062.00
B. Radio receivers/antennas		
C. Total Equipment Costs	\$ 1,688.00	\$ 5,062.00
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Field Housing	\$500	\$1,500.00
B. Vehicles (4WD truck lease: 2 @ \$10,500/ea.)	\$ 5,250.00	\$ 15,750.00
C. ATVs (1 ATV @ \$2,000 ea.)	\$ 500.00	\$ 1,500.00
D. ATV Fuel and Vehicle Maintenance	\$ 250.00	\$ 750.00
E. Total Miscellaneous Costs	\$6,500	\$ 19,500.00
7. In-Kind Services		
A. USGS Research Wildlife Biologist (Permanent, 0.2 FTE)		\$ 12,834.00
B. USGS Wildlife Biologist (Term, 0.2 FTE)		\$ 9,850.00
C. Total In-Kind Services	\$ -	\$ 22,684.00
Subtotals	\$ 22,500.00	\$ 90,184.00
Total Project Costs	\$	112,684.00



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title:** *Effects of Conventional Raven Control and Wildfire on Greater Sage-grouse Vital Rates within the Virginia Mountains of Northwestern Nevada*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account:** \$22,500

**Funds to be Used from Other Funding Sources (please list by source):**

Nevada Sage-grouse Conservation Grant (W-64) – Federal Match (75%): \$67,500

**Total Project Cost not including In-Kind Donations:** \$90,000

**Total Project Cost Including In-Kind Donations (if applicable):** \$101,342

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

Over the past eight years, The Nevada Department of Wildlife (NDOW), U.S. Geological Survey (USGS), and Idaho State University (ISU) have collaborated on an intensive effort to monitor and conduct research on a population of Greater Sage-grouse (hereafter sage-grouse) in the Virginia Mountains of southern Washoe County. This effort was implemented primarily to determine movement patterns, use areas and demographic parameters as baseline monitoring prior to the construction of a proposed utility scale renewable energy (wind) development. At this point in time, it does not appear that this project is going to move forward at the initially proposed site. Results of this research and monitoring work has indicated that ravens are a causal factor contributing to low nest survival rates in the Virginia Mountains (Lockyer et al. 2012). Thus, we decided to conduct intensive raven control work using USDA Wildlife Services and placement of corvidicide injected eggs at strategic locations for three years to determine its effectiveness. Further, a major wildfire burned approximately 60,000 acres during the summer of 2016 and greatly impacted available suitable habitat for sage-grouse in the Virginia Mountains. We feel it is important to continue monitoring sage-grouse in this study area to determine the response to this fire.

Research conducted by Lockyer et al. (2012) found that the cumulative nest survival for the Virginia Mountain population (22.4%) was substantially lower than other published results within the Great Basin of 36% (Rebholz et al. 2009) and 42% (Coates and Delehanty 2010). Vital rates for other life

stages of this population have not been analyzed, but such low nest survival could limit potential population size. Nest survival rates are highly variable across sage-grouse populations (Taylor et al. 2011), and such a low nest survival rate for a small population such as the Virginia Mountains is of considerable concern.

To identify predators responsible for nest failure, continuous digital video-recording systems were deployed at a subset of sage-grouse nests. Common ravens (*Corvus corax*) were the most frequent sage-grouse nest predator identified and accounted for 46.7% of nest depredations. Raven population size, density, and distribution has increased substantially across the western United States as a result of habitat conversion and human activities that act to subsidize ravens with food and nesting opportunities (Sauer et al. 2004, Kristan and Boarman 2007, Bui et al. 2010, Howe 2012). Historically the sagebrush-steppe ecosystem likely had relatively low raven population densities (Leu et al. 2008). However, this ecosystem currently supports higher numbers of ravens because of increased vertical perching and nesting substrates (e.g., electrical power line towers and other structures), as well as human-related food sources such as road kill and refuse (Boarman 1993 and Sauer et al. 2004). This is an important change because sage-grouse rely on visual concealment for nesting while ravens rely on visual detection for hunting (Gregg et al. 1994, Conover et al. 2010).

The most explanatory nest site selection models identified low occurrence of cheatgrass (*Bromus tectorum*), low occurrence of ravens, increased shrub canopy cover (%), and high elevation as explanatory variables for nest site selection. Increased shrub canopy at local spatial scales was the most explanatory selection factor for sage-grouse nest survival.

Raven control (both lethal and non-lethal e.g. nest removal) may be an appropriate tool to utilize as a conservation action to increase nest success and ultimately, recruitment. This situation offers an opportunity to research the effects of raven control within the context of a classic Before, After Control Impact (BACI) experimental project design to determine the effects on various sage-grouse vital rates and attempt to determine ultimate effects to recruitment of individuals into the adult population.

Aside from monitoring the effects of raven control, the occurrence of the fire in 2016 allows us to collect data on demographic parameters post-fire and compare these figures to the already collected pre-fire data. Other studies are currently ongoing to determine the effects of wildfire on sage-grouse populations including the Buffalo Hills (Rush Fire) in California and the Trout Creek Mountains in Oregon. Data collected from the Virginia Mountains will contribute nicely to these other datasets.

This project is intended to better understand the effects of raven control on a localized sage-grouse population where the extant habitat condition has been compromised by wildfire (1999 & 2016). We intend to fulfill the following objectives through the implementation of this project:

- 1) Radio-mark a minimum of 20 sage-grouse hens annually to determine habitat utilization, nest site selection, nest initiation rates and nest survival rates;
- 2) Conduct lek counts on at least two leks within the study area to help determine population trend;
- 3) Place at least six to eight cameras at nest sites to determine type of predator and predation rates;

- 4) Determine recruitment rates through follow-up brood surveys;
- 5) Place corvidicide laced chicken-egg baits within identified nesting habitat to reduce raven numbers (this task is covered under a Nevada Predator Management Plan project).

This project may have greater application range-wide to serve as guidance as to when raven control is appropriate and the overall effectiveness of its application.

## **II. Project Location including County (include a map if available):**

This site is located in the Virginia Mountains located in southern Washoe County just west of Pyramid Lake. This area includes the Virginia portion of the Virginia/Pah Rah Population Management Unit. More specifically, the study area includes the Spanish Flat/Tule Ridge and the Sheep Springs/Vinegar Peak regions of the mountain range.

## **III. Land Status: Private or Public?**

The study area encompasses mostly public lands; however, some private and tribal lands are also within the study area.

## **IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):**

The majority of the study area is managed by the Carson City District of the BLM.

## **V. UTM Coordinates if Known:**

The study area covers a rather broad area that is better represented by a polygon.

## **VI. Project Approach Including Tasks to be Accomplished and Target Species:**

Sage grouse movement, survivorship, and reproduction have been and will continue to 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 (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.

If a grouse is found at the same location during the nesting period, researchers will visually determine 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. In addition to monitoring nests with radio-telemetry, camouflaged

micro-cameras are installed with time-elased digital video recorders (DVR). The primary purpose of cameras is to identify nests predators. Another purpose is to identify factors that influence patterns of incubation. Cameras are placed about 0.5 m from the nest bowl, which aided in unambiguous identification of animal encounters and grouse behavior. Cameras and video recorders are uninstalled immediately following nest depredation, abandonment, or hatch. Researchers reduce human scent by wearing rubberized gloves and using spray designed to mask scent.

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 compared 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.

### Predator Monitoring and Control

*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.

*Raven videography:* Because ravens are known to be an effective sage grouse nest predator, additional observational data is collected on raven nests using videography within the study area. Objectives for using videography included: (1) investigate links between raven foraging activities with sage-grouse incubation patterns, (2) estimate feeding frequencies, and (3) identify components of nestling diet. Researchers plan to investigate differences between nests in anthropogenic and natural nesting substrates. Information might lead to management implications in the future on how to properly manage raven and sage-grouse interactions, especially in areas with increasing energy development.

*Badger Surveys:* Following each nest fate, American badgers (*Taxidea taxus*; hereafter, badgers) surveys are conducted by walking in a bowtie pattern with the nest bowl at the center for a total length of 680 m. An area 4 m on each side of the survey line is actively searched for badger sign. Specifically, fresh intact holes, collapsed holes, small digs or scrapes, and scat or tracks encountered along the survey line are recorded. Surveys are conducted at random points generated for each nest.

*Predator Control:* Raven control work will be conducted by USDA – Wildlife Services located in Reno, NV. Raven control work will take place from March through May within the study area through the use of chicken egg baits treated with DRC-1339, a corvidicide used to control avian species (Spencer 2002). USDA-WS will place 2 egg baits every 250 m along identified raven removal routes every 7 days. Egg bait fate will be recorded within 72 hours of placement, and non-depredated eggs will be disposed. During the spring, nearby transmission lines will be surveyed for active raven nests. If located, nests will either be removed or eggs will be oiled to decrease viability while still maintaining the territorial pair at the site.

## **VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Describe Your Monitoring Plan:**

This project has provided the Nevada Department of Wildlife with a substantial amount of data relative to sage-grouse habitat selection, adult survival rates, nest initiation rates and success, and nest predator identification in an area that had been impacted by fire in 1999. A journal article

entitled “Greater Sage-grouse Nest Predators in the Virginia Mountains of Northwestern Nevada” was published in the Journal of Fish and Wildlife Management in 2013 (Lockyer et al. 2013) and a subsequent article, “Nest Site Selection and Reproductive Success of Greater sage-grouse in Fire Impacted Habitats in Northwestern Nevada” was published in the Journal of Wildlife Management in 2015 (Lockyer et al. 2015).

This area provides a good opportunity to monitor the ultimate outcome of proposed raven control work including the use of DRC-1339 corvidicide and non-lethal means of control. We are proposing to conduct intensive raven control work in the Virginia Mountains over the next three year period and monitor sage-grouse and raven population response. Additionally, some habitat enhancement work is expected to occur over the next couple of years within the Virginia Mountains including sagebrush planting in areas affected by wildfire within the Spanish Flat/Vinegar Peak area. Continued monitoring of this population would help determine the effects of certain habitat enhancement efforts.

**VIII. Project Schedule (including start and end dates and major milestones):**

Raven control will be extended into State Fiscal Year 2017 to provide three full years of comprehensive raven control efforts using the deployment of corvidicide injected eggs at strategic locations. We hope to continue monitoring the local sage-grouse population in the Virginia Mountains for another three years after raven control efforts have ceased in order to understand the longer term impacts of raven control on the sage-grouse population and whether or not there are lasting effects.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> Edition of the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (2004). The project also helps monitor a project identified within the Nevada Department of Wildlife’s Predator Management Plan (Project 21).

**X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:**

*Project Costs and Funding*

**XI. Cost Summary (briefly describe the project’s major types of spending):**

**XII. Is this Project Going to Continue After FY20?** Yes \_\_\_ No X

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes \_\_\_ No X

**XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project’s Lifespan:**

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**  
Yes X No \_\_\_

**XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?**

Federal funds for this project are being provided by the Pittman-Robertson Wildlife Restoration program administered by the USFWS. Specifically, funding will be provided by the Nevada Greater Sage-grouse Conservation Program grant.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

A sub-grant will be necessary to continue this work for FY2020. A sub-grant is in place with Great Basin Bird Observatory to provide field research crews working under the supervision of the U.S. Geological Survey's Western Ecological Research Center in Dixon, CA. so it is possible that this work would be covered under an amendment to the existing sub-grant.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

See above.

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$ 15,312.50	\$ 45,937.50
C. Total Personnel Costs	\$ 15,312.50	\$ 45,937.50
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. VHF Radio Transmitters (30 units @ \$225/ea.)	\$ 1,687.50	\$ 5,062.50
B. Vehicles (2 @ \$10,500 per 6 month field season)	\$ 5,250.00	\$ 15,750.00
C. Total Equipment Costs	\$ 6,937.50	\$ 20,812.50
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Field Housing	\$ 250.00	\$ 750.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 250.00	\$ 750.00
7. In-Kind Services		
A. USGS Research Wildlife Biologist (Permanent, 0.1 FTE)		\$ 6,417.00
B. USGS Wildlife Biologist (Term, 0.1 FTE)		\$ 4,925.00
C. Total In-Kind Services	\$ -	\$ 11,342.00
Subtotals	\$ 22,500.00	\$ 78,842.00
Total Project Costs	\$	101,342.00



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### ***Project Summary***

**Project Title:** *Monitoring Greater Sage-grouse and Habitat Post Martin Fire*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account:** \$25,000

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

Nevada Chukar Foundation: \$25,000

Carson Valley Chukar Club: \$5,000

BLM – Small Grant Provision: \$5,000

**Total Project Cost Not Including In-Kind Donations:** \$90,540

**Total Project Cost Including In-Kind Donations (if applicable):** \$90,540

### ***Project Proposal***

#### **I. Purpose of Project and Goals to be Achieved**

This project is intended to determine key demographic parameters and gain a better understanding of habitat utilization and movement patterns after the 2018 Martin Fire. Pre-fire data was collected from 2016-2018 within this study area as it served as a representative control site within the Great Basin that exhibited characteristics of quality sage-grouse habitat free from moderate to significant anthropogenic disturbances. Further monitoring at this study sites provides a great opportunity to determine the effects of fire on sage-grouse population and also help determine the recovery of habitat under varying treatment scenarios (e.g. herbicide/fallow/seed, seed only, and natural recovery). The following describe the objectives and demographic parameters for the project:

1. Capture approximately 25-30 female sage-grouse and place VHF radio transmitters and leg bands on the birds at each study site. At a minimum, maintain that number of radio marked females annually;
2. Capture at least 5 female sage-grouse and place GPS/Satellite transmitters to determine seasonal movement patterns and determine home range at each study site;

This work will assist with determining the following:

- a) determination of survival rates of adults and juveniles (both male and female); and

- b) identification of nest sites and nest initiation rates;
- c) determination of nest survival rates;
- d) examination of nest-site vegetative characteristics and if differences exist between successful and unsuccessful nest sites;
- e) determination of differences of seasonal survival rates; and
- f) understand and map movement patterns, seasonal distribution and key habitats.

**II. Project Location including County (include a map if available):**

The study site is located in the Santa Rosa Population Management Unit (PMU) on the east side of the Santa Rosa Range in Humboldt County as it transitions into the Owyhee Desert lying to the east.

**III. Land Status: Private or Public?**

Much of the study area is public land.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)**

A majority of these lands are managed by the Bureau of Land Management – Winnemucca District; however, some land in the study area is also managed by the U.S. Forest Service, Humboldt-Toiyabe National Forest - Santa Rosa Ranger District.

**V. UTM Coordinates if Known:** the study area is better represented by a polygon rather than a point.

**VI. Project Approach Including Tasks to be Accomplished and Target Species. Also Include Acres to be Treated or Restored or Any Other Measurable Factors:**

Field work for this project will be conducted by the USGS Western Ecological Research Center in Dixon, California.

**Radio-Telemetry**

We are proposing to capture approximately 20-30 female and up to 10 male sage-grouse annually over a three 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  $90^\circ$ . 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.

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 broods sites. Canopy cover is measured along three 25 m transects, which extended from the brood location every  $120^\circ$  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.

## **Predator Monitoring**

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.

## **VII. Describe the Beneficial Effects of the Project, How they Will be Measured and Describe Your Monitoring Plan:**

Over the course of this monitoring effort, we will be able to estimate sage-grouse vital rates (e.g. nest initiation rates, nest survival rates, male and female survival rates, adult and juvenile survival rates, and brood survival rates) in response to the Martin Fire. These data can be used for comparison purposes for other ongoing research projects that are currently investigating sage-grouse and habitat response to mega-fires.

## **VIII. Project Schedule (including start and end dates and major milestones):**

Capture and radio-marking efforts for this project will take place during the spring of each year from early March through April beginning in 2016. Follow-up work will extend from this period through August of each year. Monthly flights to locate radio marked individuals will occur from November through February.

## **IX. 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).

## **X. NEPA Compliance, Archeological Clearances, or other Authorizations that are Needed Before this Project Can be Completed and Their Status: None**

## *Project Costs, Funding and Contracting*

**XI. Cost Summary (briefly describe the project's major types of spending):**

The upland game stamp program and Nevada Chukar Foundation will provide a majority of funding with the Carson Valley Chukar Club and perhaps Nevada Bighorns Unlimited also contributing. Other sources of funding could also include the Ruby Pipeline Mitigation Fee or other sources to make up the remaining \$30,000 needed for this project for FY20.

**XII. Is this Project Going to Continue After FY20?** Yes  No

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project's Lifespan:**

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**  
Yes  No

**XVI. If Yes, Which Federal Grant Would the Matching Funds Be Used For?**

These funds would have been used as match for Wildlife and Sport Fish Restoration funding; however, there is a reduced amount of federal aid funding available currently.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

A sub-grant agreement would need to be developed.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

## Project Cost Breakdown

Please provide a breakdown of the project's *total costs over the life of the project* in the table below. If your project is a multi-year project, define the total to be spent during each fiscal year in your response to question XIV on the previous page. Only include in-kind contributions under item 7 in the table below. Any NDOW personnel or travel expenses should be covered by funding sources other than the Special Reserve Accounts.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel*		
B. Other Personnel	\$ 15,687.00	\$ 37,603.00
C. Total Personnel Costs	\$ 15,687.00	\$ 37,603.00
3. Travel Costs*		
A. Per Diem		
B. Mileage	\$ 625.00	\$ 1,875.00
C. Total Travel Costs	\$ 625.00	\$ 1,875.00
4. Equipment		
A. VHF transmitters (30 units @ \$225 ea.)	\$ 1,688.00	\$ 5,062.00
B.		
C. Total Equipment Costs	\$ 1,688.00	\$ 5,062.00
5. Materials		
A. Trapping supplies	\$ 500.00	\$ 1,500.00
B.		
C.		
D. Total Materials Costs	\$ 500.00	\$ 1,500.00
6. Miscellaneous Costs		
A. Field Housing	\$500	\$1,500
B. Vehicles (4WD truck lease: 2 @ \$10,500/ea.)	\$ 5,250.00	\$ 15,750.00
C. ATV (1 ATV @ \$2,000 ea)	\$ 500.00	\$ 1,500.00
D. ATV Fuel and Maintenance	\$ 250.00	\$ 750.00
F. Total Miscellaneous Costs	\$ 6,500.00	\$ 19,500.00
7. In-Kind Contributions		
A.		
B.		
C. Total In-Kind Contributions	\$ -	\$ -
Subtotals	\$ 25,000.00	\$ 65,540.00
Total Project Costs	\$	90,540.00



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### ***Project Summary***

**Project Title:** *Bi-State Sage-grouse Coordinator*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from Each Special Reserve Account:** \$5,000

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

U.S. Forest Service = \$5,000

Bureau of Land Management = \$5,000

Intermountain West Joint Venture = \$52,775

**Total Project Cost Not Including In-Kind Donations:** \$67,775 each year for 3 years

**Total Project Cost Including In-Kind Donations (if applicable):** \$67,775 each year for 3 years

### ***Project Proposal***

#### **I. Purpose of Project and Goals to be Achieved:**

Creating and filling a Bi-State Communication and Data Coordinator position will increase our effectiveness and efficiency in meeting reporting and accountability requirements. It will allow us to broaden our outreach to more of our community, and it will free up precious time for our professionals allowing them to focus on their primary job of getting conservation done on the ground. Also, because much of this work is happening across agency, private and nonprofit ownership boundaries, having a person who is not tied to a specific agency would help improve the seamlessness of the communication effort.

#### **II. Project Location including County (include a map if available):**

The Bi-State covers an area approximately 170-miles long and up to 60 miles wide. It includes portions of five counties in western Nevada: Douglas, Lyon, Carson City, Mineral, and Esmeralda; and three counties in eastern California: Alpine, Mono, and Inyo.

#### **III. Land Status: Private or Public?**

Lands within the Bi-State sage-grouse conservation area include public, private and military managed lands.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)**

The Bi-State Sage-grouse Conservation Area includes lands managed by the following BLM Districts:

- Carson City
- Bishop Field Office

The area also includes lands managed by the following U.S. Forest Service Ranger Districts:

- Humboldt-Toiyabe
- Inyo

**V. UTM Coordinates in Known:**

This is a fairly broad area covering portion of west-central Nevada and east-central California east of the Sierra Nevada Mountains.

**VI. Project Approach Including Tasks to be Accomplished and Targe Species:**

Base of operation: Bishop, CA, but frequent travel throughout the Bi-State and to Reno

*Duties, responsibilities and type of work to be performed*

The Bi-State Sage-grouse Executive Oversight Committee has agreed that the communication and outreach coordinator could be responsible for the following duties:

- Development and completion of annual and 5 year accomplishment reports;
  - Develop template for reports;
  - Compile information and data from LAWG members, and write and editing of reports;
  - Coordinate the annual data call;
  - QA/QC of data
- Facilitate and schedule LAWG meetings and Conferences (e.g. conifer workshop, Traditional Ecological Knowledge (TEK) Forum);
- Create and manage files related to the Bi-State such as meeting notes, agendas, research, news etc.
- Manage the Bi-State Website
- Communicate to LAWG and public about BSSG accomplishments and ongoing work
  - Website posts and updates;
  - Newsletter/mailchimp for relevant projects;
  - Leading and coordinating volunteer projects and field trips;
  - Writing success stories and developing outreach products (brochures, videos, merchandise, posters, giveaways, etc.);
  - Giving or scheduling for others presentations about sage-grouse/sagebrush systems
  - Staffing booths at local events such as Earth Day;
  - Photographic projects, events and gatherings.

The position would facilitate the reporting on all the actions identified in the Bi-State Action Plan (BSAP) and through reducing these outreach and communication tasks for agency staff, would increase completion of on the ground accomplishments. Specific actions this position would help achieve in the action plan are:

- Action CIA1-1: Implement a “Sage-Grouse Service Team” approach to support sage-grouse conservation and management in Bi-State area. Provide cross-jurisdictional staff support to facilitate coordinated interagency effort to conserve Bi-State DPS and its habitat.
- Action CIA1-2: Provide multi-jurisdictional funding to support sage-grouse conservation and management in Bi-State area. Establish process to identify and support cross-jurisdictional funding opportunities to facilitate coordinated interagency effort to conserve Bi-State DPS and its habitat.
- Action CIA1-3: Annually engage Bi-State Local Area Working Group (LAWG) via Technical Advisory Committee (TAC) to develop proposed program of work for upcoming calendar year based on available staff and funding. Proposed annual program of work should be completed by January 31 each calendar year.
- Action MSI1-3: Conduct Bi-State LAWG planning meetings on semi-annual basis to review status of greater sage-grouse populations and habitats in Bi-State area and to identify, prioritize, and coordinate implementation of annual conservation actions. Continue University of NV Cooperative Extension facilitation of Bi-State LAWG meeting.
- Action MSI2-1: Conduct workshops to provide information about programs available to assist ranchers/ private landowners that may be interested in implementation of sage-grouse conservation projects and to explore opportunities for cooperative conservation of sage-grouse in Bi-State area.
- Action MSI2-2: Develop and publish a Bi-State LAWG sage-grouse conservation newsletter.
- Action MSI2-3: Develop and implement a publically accessible Bi-State LAWG Sage-Grouse Conservation webpage to facilitate the sharing and distribution of information specific to greater sage-grouse conservation efforts in Bi-State area.

**VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Describe Your Monitoring Plan:**

Up to now, we have had remarkable support for scheduling and running our meetings from our UNCE facilitator, Steve Lewis, who will be moving out of the area in June 2018. The LAWG will need to find someone to replace the duties he has been doing which include facilitating at least 2-4 meetings or field trips a year for the LAWG, keeping the email list, sending emails about meetings, action items, and important Bi-State news, and keeping meeting notes and agendas.

Annual reporting and record keeping and is currently completed by agency biologists. The Bi-State has its own project database which requires yearly data entry and analysis. Every partner in the LAWG with work to report currently enters data into this database. Having one person who is dedicated to managing this database would improve data quality and consistency. The Bi-State completes yearly accomplishment reports and is working on a 5-year accomplishment report for 2018. Taking the information from the project database and using it to more effectively communicate the accomplishments of the LAWG would improve accountability for the funding that is received in the Bi-State and help more effectively tell the conservation success story. Additionally, staffing this position would allow agency biologists more time to design rehabilitation projects and monitor treatment results and management actions.

Despite a decade of success in conservation work, the LAWG finds that many people in the communities near Bi-State sage-grouse habitat remain unaware of the LAWG’s efforts and the importance of the sagebrush ecosystem. Communication and outreach duties fall to members of the LAWG who lack both the time and expertise to do a good job. A new communications and

outreach coordinator would allow all LAWG members and staff to use their skills more effectively to contribute to conservation success. The coordinator would improve internal and external communication. This work includes updating the Bi-State website, developing success stories, leading field trips and volunteer events, and coordinating among partners about current projects. Also, at every LAWG meeting in the last 2 years, there have been new people attending who are interested in the Bi-State and have a lot of questions. These new potential partners need an orientation to the LAWG to ensure that they understand the purpose of the group and then can hopefully become invested in this work.

Improved communication about the Bi-State sage-grouse and the sagebrush ecosystem (both outside and inside the LAWG) would lead to more community support, a better appreciation for the sagebrush ecosystem, and more on the ground accomplishments. The importance of accountability to ourselves and to our supporting agencies cannot be overstated. Regular reporting to the LAWG, the public, and state and federal agencies on grant spending, future budgeting, and monitoring results for effectiveness and implementation takes more time than one would think, but is imperative for the long-term conservation of the Bi-State sage-grouse.

**VIII. Project Schedule:**

Initially, this is expected to be a 3-year position; the duration of this position after 3 years will be dependent upon the availability of funding.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> 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).

- X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:** No NEPA compliance is necessary for this particular project.

*Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

- XII. Is this Project Going to Continue After FY20?** Yes  X  No

- XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes  X  No

- XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:** We anticipate funding this project for up to 5 years at the current rate of \$5,000 per year.

- XV. Would Funds from this Program Be Used for State Matching Purposes?** Yes  X  No

- XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?** Federal funding for this project is being made available through the Intermountain West Joint Venture.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

A sub-grant agreement would need to be developed to provide funding to the Eastern Sierra Interpretive Association which houses the position.

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$5,000	\$ 58,138.00
C. Total Personnel Costs	\$ 5,000.00	\$ 58,138.00
3. Travel Costs		
A. Per Diem		\$ 3,887.00
B. Mileage		
C. Total Travel Costs	\$ -	\$ 3,887.00
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Training		\$ 750.00
B.		
C.		
D.		
F. Total Miscellaneous Costs		\$ 750.00
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 5,000.00	\$ 62,775.00
Total Project Costs	\$	67,775.00



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### ***Project Summary***

**Project Title:** *Columbian Sharp-tailed Grouse Restoration Project – Population Modeling and Publications*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Funds Requested from the Wildlife Reserve Account(s):** \$22,250

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

The following are possibilities that are subject to review and approval by each entity. Contributions would reduce the match requirement from Nevada Upland Game Stamp funds:

- 1) Carson Valley Chukar Club: \$2,500
- 2) Nevada Chukar Foundation: \$5,000

USGS In-kind services: \$62,250

**Total Project Cost not Including In-Kind Donations:** \$29,750

**Total Project Cost Including In-Kind Donations:** \$92,000

### ***Project Proposal***

#### **I. Purpose of Project and Goals to be Achieved:**

During a five-year period from 2013-2017, the Nevada Department of Wildlife (NDOW) translocated 212 Columbian sharp-tailed grouse (CSTG) from southeastern Idaho into the Bull Run Basin located in Elko County, Nevada. During this restoration effort into historically occupied habitat, NDOW partnered with the U.S. Geological Survey (USGS) Western Ecological Research Center in Dixon, California to monitor the success of the project. A significant amount of data was collected during the project from which publications can be developed to help inform future conservation efforts for the species and improve translocation techniques.

There are four main products associated with this project that have been identified including:

- 1) Development of an integrated population model for the translocated population;
- 2) A manuscript on the effectiveness of artificial insemination techniques used during the original translocation project;

- 3) A manuscript on habitat selection by Columbian sharp-tailed grouse during the nesting phase and factors that affect nest site selection and success;
- 4) A manuscript on the performance of translocated

To date, an integrated population model has been established which suggested that the translocation project was a success. However, the South Sugarloaf fire that burned during the summer of 2018 affected approximately half or more of the species habitat and the long-term sustainability of the population is in jeopardy. The continued development and official publication of the latter three products will assist in future translocation efforts here and elsewhere across the species range.

**II. Project Location (include a map if available):** (See Figure 1 at end of document)

*Columbia Basin Release Site:* Located between the Bull Run and Independence Mountains, this release site is characterized by rolling hills with considerable forb cover. A mixture of shrub-steppe and mountain-shrub communities are interspersed throughout the area. This release site is approximately 67 km<sup>2</sup> or 6700 hectares.

**III. Land Status: Private or Public?**

Columbian sharp-tailed grouse were released on a fairly extensive piece of private land within the Bull Run Basin in Elko County, NV. However, birds use adjacent lands managed by the U.S. Forest Service and Bureau of Land Management as well.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):**

U.S. Forest Service – Humboldt-Toiyabe National Forest Service, Mountain City Ranger District  
Bureau of Land Management – Elko District

**V. UTM Coordinates if Known:** The project area is best described by a polygon as the grouse have used a fairly broad area.

**VI. Project Approach Including Tasks to be Accomplished:**

- 1) Develop an integrated population model (IPM) for CSTG at the translocation site;
  - a. Integrate the following demographic parameters into the IPM:
    - i. Nest propensity;
    - ii. Clutch size;
    - iii. Nest survival;
    - iv. Hatchability;
    - v. Chick survival;
    - vi. Juvenile survival
  - b. Summarize or explain the results in an associated discussion
- 2) Develop a manuscript on the effectiveness of artificial insemination techniques used during the translocation effort;
  - a. Further analyze the results of parentage through genetic analysis of eggshells from individual nests to determine effectiveness of artificial insemination;
- 3) Develop a manuscript on performance of translocated CSTG during the nesting stage and factors that affect selection and success;

- a. Estimate the effects of habitat characteristics and predator abundance on nest survival rates;
  - b. Develop a resource selection function model based on habitat use by radio-marked grouse and vegetative information collected during the nesting phases;
    - i. Conduct multi-scale habitat selection analysis using random and used points;
    - ii. Calculate the kernel home-ranges of male and female grouse during the nesting season;
    - iii. Measure the habitat characteristics (field and GIS) at random points that are spatially dependent and independent from the nest site;
  - c. Use morphometric measurements to develop a body condition index and relate those results to survival;
    - i. Determine the effects of grouse age (adult vs. yearling) on nest survival rates
- 4) Develop a manuscript on performance of translocated CSTG during the brood rearing stage and factors influencing brood survival;
- a. Summarize habitat measurements (field and GIS) from subsample of brood locations during day and night and dependent random locations for each 10-day interval;
  - b. Develop and compare brood survival models that include vegetation characteristics as covariates to identify the effects of vegetation factors;
  - c. Develop a resource selection function model based on habitat use by radio-marked grouse and vegetative information collected during the brood rearing phases;
    - i. Conduct multi-scale habitat selection analysis using random and used points;
    - ii. Calculate the kernel home-ranges of male and female grouse during the nesting season;
    - iii. Measure the habitat characteristics (field and GIS) at random points that are spatially dependent and independent from the nest site;
      1. Summarize results in an associated discussion.

**VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

Publication of the results of this project into formal wildlife management journals memorializes these efforts and helps ensure that future work can be more successful given the results of this project.

**VIII. Project Schedule:**

- 1) Development of an Integrated Population Model for translocated Columbian sharp-tailed grouse – June 30, 2019;
- 2) Submission of artificial insemination manuscript (final) – September 30, 2019;
- 3) Submission of nest site selection (associated resource selection function model) and survival of translocated female Columbian sharp-tailed grouse manuscript (draft) – December 31, 2019;
- 4) Submission of brood site selection (associated resource selection function model) and survival by translocated female Columbian sharp-tailed grouse – June 30, 2020;

**IX. Relationship to NDOW Plans, Policies and Programs:**

The following documents were used while developing this proposal:

- Nevada Upland Game Species Management Plan (2008);
- Upland Game Release Plan for FY2016-17;

- NDOW's W-48 Federal Assistance Grants (Pittman-Robertson);
- Data Summary of a Columbian Sharp-tailed Grouse Habitat Suitability Examination between Idaho and Nevada (Coates et al. 2011).
- Guidelines for the Management of Columbian Sharp-tailed Grouse Populations and Their Habitats (Hoffman et al. 2015).

**X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:** This project is primarily taking place on private lands. However, a U.S. Forest Service Categorical Exclusion was obtained for this project to address an additional release site and the potential for the translocated birds to use Forest Service administered lands.

### *Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**XII. Is this Project Going to Continue After FY20?** Yes \_\_\_ No X

FY 2020 is likely going to be the last year of the project until we can further determine the success or failure of the project within the Bull Run Basin. Given current fire suppression efforts and priorities of federal land management agencies, future translocations of the species may not be cost or resource effective.

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes \_\_\_ No X

**XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:**

**XV. Would Funds from this Program Be Used for State Matching Purposes?** Yes X No \_\_\_

**XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?** Pittman-Robertson Sport Fish and Wildlife Restoration – Game Management Grant.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

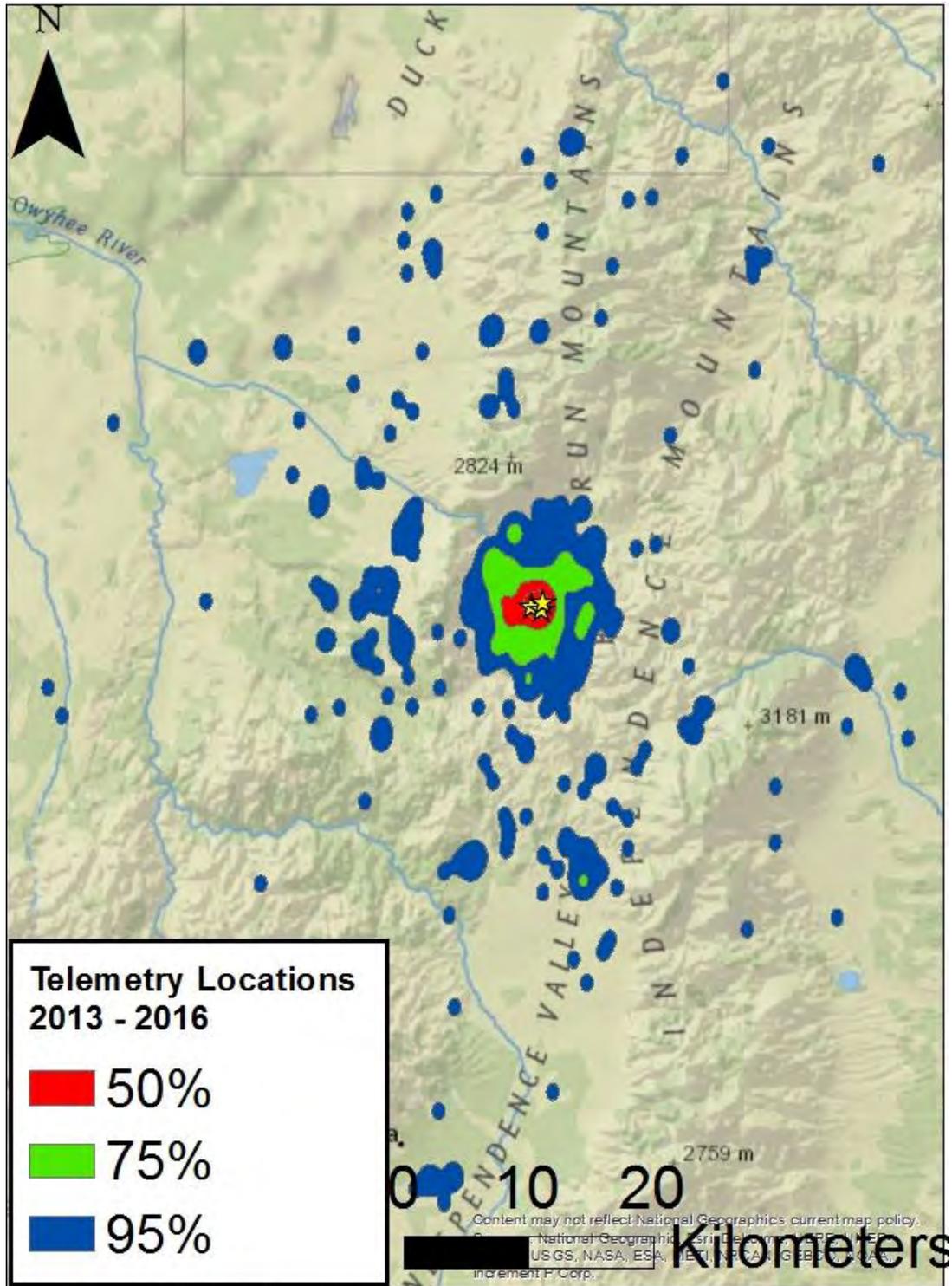
**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

### Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. VHF Transmitters (30@\$225/unit)		
B. Handheld GPS (2 @ \$250/ea.)		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Additional Costs (workshop presentations, publication and printing fees, etc. )	\$ 1,500.00	\$ 7,500.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 1,500.00	\$ 7,500.00
7. In-Kind Services		
A. Research Wildlife Biologist (Permanent, 0.2 FTE)		\$ 62,250.00
B.		
C.		\$ -
Total In-Kind Services	\$ -	\$ 62,250.00
Subtotals	\$ 22,250.00	\$ 69,750.00
Total Project Costs	\$	92,000.00

\*Note: if you are proposing to use more than one NDOW Special Reserve Account to pay for this project, or plan to use more than one other type of funding source, please describe in this location which specific sources will pay for the cost components included in the table above:



**Figure 1.** Utilization distribution of translocated Columbian sharp-tailed grouse within the Independence and Bull Run Mountains of Elko County from 2013-2016. Ninety-five percent of all telemetry locations are within the blue area. The majority of birds remain concentrated around the release area which is indicated by the yellow stars.



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title: Response of Greater Sage-grouse to Vegetation Treatments in South Cave, Hamlin and Steptoe Valleys**

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp

**NDOW Project Manager (PM):** Shawn Espinosa

**Total Funds Requested from the Wildlife Reserve Account(s):** \$7,500

**Total Cash to be Used from Other Funding Sources (please list by source):**  
Nevada Sage-grouse Conservation Grant (W-64) – Federal Match (75%): \$17,500

**Total In-Kind Donations by Source (please list by source):** N/A

**Total Project Cost to be Funded by All Sources:** \$25,000

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

The Nevada Department of Wildlife (NDOW) and the Bureau of Land Management – Ely District (BLM) are partnering on a Greater Sage-grouse (hereafter referred to as “sage-grouse”) monitoring project to determine general habitat use, identification of key areas during certain seasons and the efficacy of various vegetative treatments, particularly pinyon and juniper removal, on local sage-grouse populations within portions of Lincoln (Hamlin Valley) and southern White Pine County (South Steptoe and Cave Valley). Baruch-Murdo et al. (2013) suggests that population level impacts to sage-grouse can occur at very low levels of conifer encroachment, whereas no sage-grouse leks remained active when conifer canopy exceeded 4%. The BLM and NDOW, along with various other partners, including private landowners, are working to address this issue throughout Sage-grouse Management Zone III within south-central Nevada and southern Utah.

Information gained from this project will not only identify important seasonal use areas, movement and potential connectivity corridors to other adjacent populations of sage-grouse within southeastern Nevada and southwestern Utah, but also help understand the response to various treatments or management actions including pinyon/juniper removal, meadow enhancement and other management actions. Sage-grouse monitoring work is currently ongoing in southern Utah in the Skutumpah, Dog Valley and Hamlin Valley (Utah) areas by Dr. Nicki Frey with Utah State University. This project expands upon her ongoing efforts and includes study sites in Lincoln and

southern White Pine Counties. Some of Dr. Frey's monitoring work in southern Utah has actually trickled into this portion of Nevada because sage-grouse are using habitats in both states. This work will help to further evaluate the effectiveness of pinyon and juniper removal and other conservation actions on sage-grouse habitat use and potentially, population response. This monitoring effort is expected to span a five year period beginning in State Fiscal Year 2016 and conclude in 2020.

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 areas of southeastern Nevada and southwestern Utah where conifer removal treatments are being conducted to improve habitat conditions for sage-grouse. Objectives include the following:

1. Determine habitat use and specific vital rates of female grouse during the nesting period, especially in relation to those areas that have been treated through conifer removal efforts;
2. Identify specific use areas during the brood-rearing period and estimate brood survival, especially with respect to conifer treatment areas or proximity to those areas;
3. Estimate differences between male and female (with broods) departure dates to wintering areas;
  - a) Identify wintering grounds and attempt to develop a winter seasonal habitat map;
4. Calculate Brownian bridge movement path models to identify corridors between seasonal use areas;
5. Calculate seasonal and annual survival rates and identify differences between sexes;
6. Determine habitat characteristics of used versus random points, especially with respect to treated areas.

**II. Project Location (include a map if available):**

This work will take place within South Cave and Hamlin Valley in Lincoln County and south Steptoe Valley in White Pine County. Other areas could be included based upon bird use of adjacent habitats.

**III. Land Status: Private or Public?**

This project is taking place on public lands.

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS):**

Bureau of Land Management – Ely District

**V. UTM Coordinated if Known:**

**VI. Project Approach Including Tasks to be Accomplished:**

This work will take place within South Cave and Hamlin Valleys in Lincoln County and south Steptoe Valley in White Pine County, Nevada, but could include overlap into other adjacent valleys or mountain ranges based upon bird movement. This work is expected to involve one principal investigator and one field technician plus associated travel and lodging expenses.

- 1) Sage-grouse Monitoring:

- a. Capture and GPS satellite Platform Transmitter Terminal (PTT) mark up to 15 female sage-grouse initially at each study site and maintain that approximate sample size over the course of the 5-year study;
- b. Dropped transmitters will be refurbished (if possible) and redeployed during the second and third breeding season.
- c. Capture and band any male sage-grouse encountered during trapping efforts;
- d. Periodically download and categorize data obtained from GPS satellite PTT transmitters;
  - i. Determine approximate nest initiation dates of female grouse;
  - ii. Identify movement patterns during the nesting season;
  - iii. Determine nest fate of female grouse and estimate daily nest survival probabilities;
  - iv. Estimate the effects of environmental characteristics on nest survival rates;
  - v. Calculate kernel home-ranges of female grouse during the nesting season;
  - vi. Identify specific use areas during the brooding period;
  - vii. Conduct brood counts every 10-d interval through the brood-rearing period to document brood success. Broods with no chicks will be scored unsuccessful and confirmed within 48-hours;
  - viii. Calculate 10-day interval brood survival rate;
  - ix. Identify late-fall feeding area for congregated broods;
  - x. Estimate differences between male and female (with broods) departure dates to wintering areas;
  - xi. Identify wintering grounds and attempt to develop a winter seasonal habitat map;
  - xii. Calculate Brownian bridge movement path models to identify corridors between seasonal use areas;
  - xiii. Calculate seasonal and annual survival rates and identify differences between sexes.

## 2) Habitat Measurements and Analyses

- a. Within 48 hours of nest fate, measure multiple microhabitat characteristics at each nest site, including total shrub cover, sagebrush cover, perennial and annual grasses, perennial and annual forbs, vertical cover, and horizontal cover (measured at 5, 10, 25, 50, 100 m from nest site);
  - i. Place four perpendicular transects centered at the nest and record the percent shrub cover for each meter along the transect at scales of 5, 10, 25 m;
  - ii. In addition, place two 20 X 50 cm Daubenmire plots along each transect and one at the nest center where percent cover is estimated and all plants are measured and keyed as annual or perennial;
  - iii. Use three methods, including Jones cover, board to estimate vertical and horizontal cover at each point of subplots and at the nest bowl;
- b. Conduct multiple measurements to quantify the amount of conifers within the nesting area (Monitor study site);
- c. Use maps of vegetation types derived from remote sensing data in a Geographical Information System (GIS) to measure habitat characteristics at larger spatial scales;
- d. Measure the habitat characteristics (field and GIS) at random points that are spatially dependent and independent from the nest site;

- e. Develop a cover class layer of conifers using 1-m resolution NAIP and NDVI data (Monitor study site);
- f. Conduct multi-scale habitat selection analysis using random and used points;
- g. Estimate the effects of grouse age and body condition on nest survival rates;
- h. Conduct habitat measurements (field and GIS) at a subsample of brood locations dependent random locations for each 10-day interval;
- i. Develop and compare brood survival models that include vegetation characteristics as covariates to identify the effects of vegetation factors;

These approaches are subject to change based on improved data collection techniques and improved technologies.

**VII. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

Over the course of this monitoring effort (3 years), we will be able to determine certain population characteristics such as:

- a) Seasonal use areas and seasonal habitat maps;
- b) Important movement corridors calculated through Brownian bridge movement pathways, which could subsequently lead to the identification of treatment areas (conifer removal);
- c) Potential connectivity with other adjacent sage-grouse populations not only in Nevada, but between Nevada and Utah;
- d) In addition, we will be able to estimate vital rates among individual birds such as nest initiation rates, nest survival, adult and juvenile survival rates, brood survival rates and potential differences in mortality between seasons. Below normal rates for any of these periods may indicate a potential management action change or habitat restoration or enhancement project.

These data, collected before, during and after implementation of several projects, and in the NEPA planning stages, will serve as one mechanism to monitor the overall effectiveness of the proposed habitat enhancement projects.

**VIII. Project Schedule:**

This project was initiated in State Fiscal Year 2016 and will continue through State Fiscal Year 2020. Year One – Year Five: (SFY 2016 - 2020) Capture and radio or GPS mark individuals. Conduct follow-up and habitat measurements. Develop data summary and progress report.

Year Five (SFY 2020): Develop publications (pertinent journal articles)

**IX. Relationship to NDOW Plans, Policies and Programs:**

This project fits within the 1<sup>st</sup> Edition of the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (2004).

**X. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:**

National Environmental Policy Act compliance for sage-grouse monitoring has been addressed in NDOW's Sage-grouse Conservation Project grant program. Habitat improvement projects taking

place on public lands within the project area have been documented through the BLM Ely District Office.

### *Project Costs and Funding*

**XI. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**XII. Is this Project Going to Continue After FY20?** Yes \_\_\_\_ No X

**XIII. If Yes, is this Going to be an Annual, Recurring Project?** Yes \_\_\_\_ No X

**XIV. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:**

**XV. Would Funds from this Program Be Used for State Matching Purposes?** Yes X No \_\_\_\_

**XVI. If Yes, Which Federal Grant Would the Matching Funds be Used For?**

Federal funding for this project will be made available through the Pittman-Robertson Sport Fish and Wildlife Restoration Program. Specifically, the federal match (75%) will be made available through the Nevada Department of Wildlife administered "Nevada Sage-grouse Conservation Program" grant.

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exist (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

A sub-grant agreement is currently in place with Utah State University to complete this research and monitoring project.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

A sub-grant agreement is currently in place with Utah State University to complete this research and monitoring project.

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$6,250	\$ 7,250.00
C. Total Personnel Costs	\$ 6,250.00	\$ 7,250.00
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. GPS Transmitters		\$ 7,000.00
B. Vehicles	\$ 1,000.00	\$ 2,500.00
C. Total Equipment Costs	\$ 1,000.00	\$ 9,500.00
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Field Housing	\$ 250.00	\$ 750.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 250.00	\$ 750.00
7. In-Kind Services		
A.		
B.		
C. Travel (Per-diem)		
D. Additional equipment (radio receivers, antennas, capture and banding supplies, etc)		
Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 7,500.00	\$ 17,500.00
Total Project Costs	\$	25,000.00



## Fiscal Year 2020 Wildlife Reserve Account Project Proposal

### *Project Summary*

**Project Title:** *Wildfire and Geomorphology Effects on Riparian Habitats and Related Restoration Implications*

**Wildlife Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp and Habitat Conservation Fee

**NDOW Project Manager (PM):** Jasmine Kleiber

**Total Funds Requested from the Wildlife Reserve Account(s):**

\$10,000.00 – Upland Game Bird Stamp account

\$10,000.00 – Habitat Conservation Fee account

**Total Cash to be Used from Other Funding Sources (please list by source):**

N/A

**Total In-Kind Donations by Source (please list by source):** \$30,000 in-kind services from USDA Agricultural Research Station in Reno

**Total Project Cost to be Funded by All Sources:** \$50,000

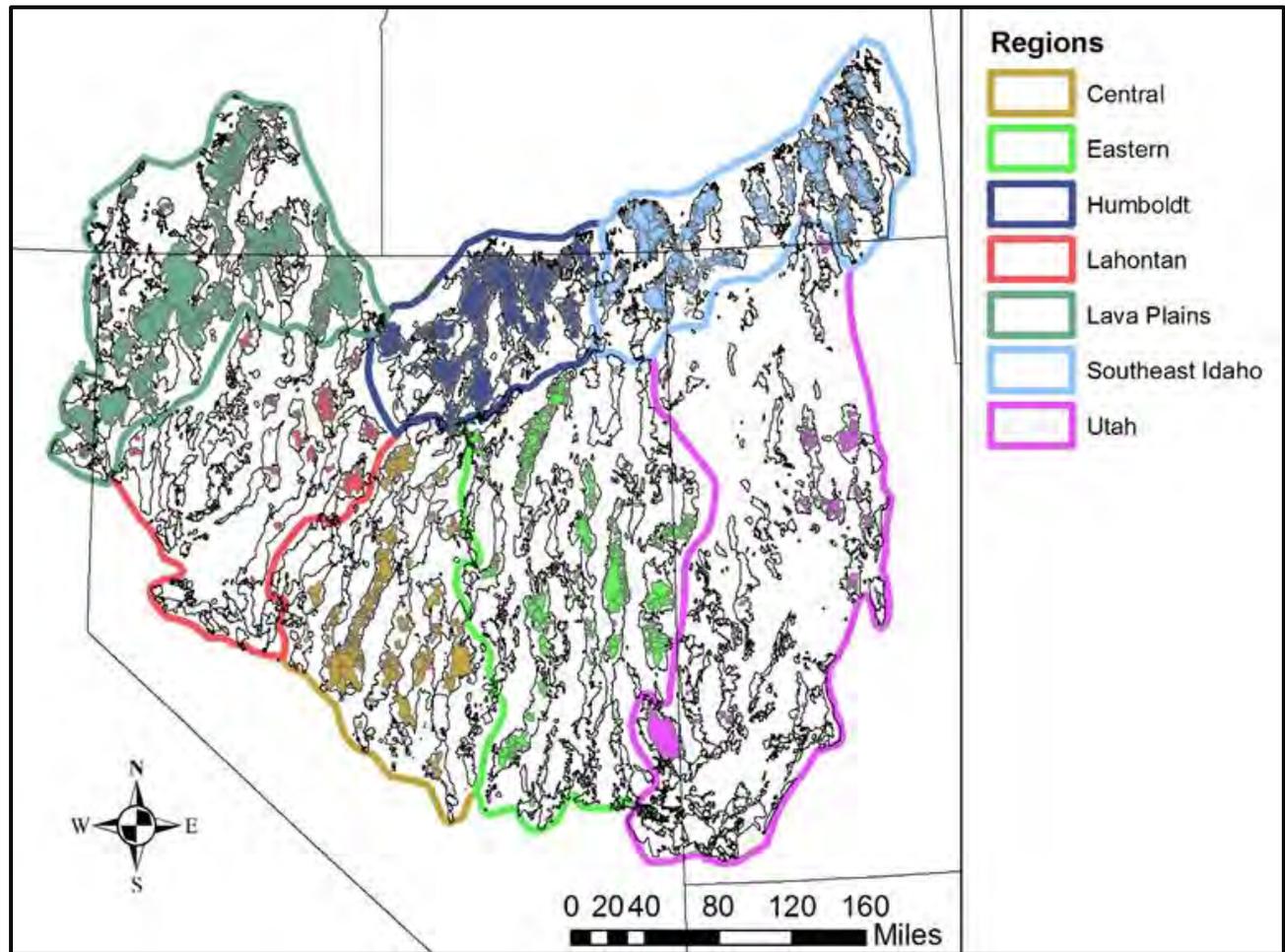
### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

Considerable attention has been devoted in recent years to the management of wet meadow ecosystems that serve as important riparian habitats within upland basins of the Great Basin. Where they do exist, they tend to be severely degraded by incision or gully erosion, over-use, wildfire, or invasive annual plant species, and they can be difficult to restore once degraded. These habitats, within basins that exhibit a low degree of connectivity and high sediment storage-to-transport ratios on hillslopes, may be more responsive to management activities because of the reduced threats of channel incision and, presumably, a larger supply of groundwater flow to the meadows created by an extensive network of recharge sites. Importantly, human activities that lead to an increase in basin connectivity can negatively impact downstream meadows through a decrease in groundwater recharge and an increase in stream dynamics, although these activities may be physically separated from the wet meadow areas. This project aims to provide a better approach to understanding geomorphology in a given watershed, and how the geomorphology affects watersheds, wet meadows, and riparian areas specifically in response to wildfire.

**II. Project Location (include a map if available):** See the figure below.

The project covers all of the mountain ranges with watersheds that have perennial stream systems in Nevada and the majority of the floristic Great Basin. This project will focus on Nevada.



**III. Project Approach Including Tasks to be Accomplished:**

This project will tie into the work currently underway for developing a strategic, multi-scale framework for assessing resource values, climate vulnerability, and other threats to Great Basin riparian and meadow ecosystems using resilience science.

Products will provide the capacity to (1) prioritize riparian ecosystems for management based on watershed and riparian ecosystem characteristics and sensitivity to disturbance, primarily that of wildfire, and (2) determine effective management strategies based on ecosystem resilience and resource values.

Prior funding has been used to develop data collection protocols, collect data, develop a database, and analyze and categorizing watershed and riparian meadow characteristics. Additional funding is needed to finalize the analyses and develop the necessary tools for managers to effectively use this information in targeting areas for management and determining appropriate conservation and restoration strategies. Additional project aims include:

1. Assessment of Watershed, Meadow, and Riparian Ecosystem Sensitivity to Disturbance, primarily that of wildfire. Data will be collected on the geomorphological processes that determine meadow ecosystem resilience to disturbance for several focal systems in the central Great Basin. The types of watersheds, meadows, and riparian areas are being categorized according to their hydrogeologic setting, hydrology, vegetation, and stream connections.
2. Incorporation of this data into the workbook/field guide developed for evaluating (1) the differences in meadow responses to disturbance and the causes of those differences and (2) the process of collecting and interpreting the necessary data to describe meadow resilience to disturbance. Selecting appropriate management strategies based on the relative resilience of the systems will be discussed.

#### **IV. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

This project is being conducted in collaboration with a diverse management and research group with knowledge of Nevada watersheds and conservation issues to ensure that it will have strong utility for management. Stakeholders/project participants include the Great Basin Landscape Conservation Cooperative (John Tull), Bureau of Land Management (Karen Prentice, Sarah Peterson), National Forest Systems (R4 and Humboldt-Toiyabe National Forest; Mark Muir), US Fish and Wildlife Service (Chad Mellison), Nevada Division of Wildlife (Jasmine Kleiber and Shawn Espinosa), and The Nature Conservancy (Laurel Saito). Research partners include Rocky Mountain Research Station (Jeanne Chambers, David Board), Western Carolina University (Jerry Miller, Mark Lord), University of Nevada, Reno (Peter Weisberg, Tom Dilts, Anna Knight), Desert Research Institute (Rosemary Carroll), Agricultural Research Service (Kierith Snyder), UC Davis (Erica Fleishman), and USGS (Jason Dunham). The project has face-to-face meetings twice a year in addition to routine (every 4-6 weeks) calls and webexs. In January 2018, we organized a symposium on the results and management applications of the project that was held at the Society for Range Management meeting in Reno, Nevada, and we plan to look for similar opportunities in the future. In July 2017, we held a field tour of the study watersheds and meadows and held a second field tour in summer 2019. Also, on-going development of educational materials and a workshop for managers on using the tools we are developing for assessing watershed and meadow ecosystem resilience. Specific products will include:

- A management-friendly manuscript describing the differences in baseflows for watersheds with different characteristics and projected future changes (Desert Research Institute – Rosemary Carroll; ARS – Keirith Snyder)
- A General Technical Report (GTR) that describes the differences among watersheds across the region and provides implications for climate change and management (RMRS – Jeanne Chambers and David Board).
- A field guide designed to provide an understanding of differences in watershed resilience to disturbance and that steps managers through the process of assessing resilience to disturbance and determining management strategies (Western Carolina University – Jerry Miller; RMRS – Jeanne Chambers; University of Nevada, Reno – Peter Weisberg).
- A similar field guide to the one for the watersheds for meadow ecosystems (Western Carolina University – Mark Lord and Jerry Miller; RMRS – Jeanne Chambers).

#### **V. Project Schedule:**

Summer-Fall 2019/	Compile GIS datasets; conduct initial categorizations of
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Winter 2020	watersheds; develop models of watershed resilience
Spring/Summer 2020	Field visits to evaluate watershed categorizations and resilience models and develop sampling protocols Finalize datasets; finalize watershed categorizations and conduct geomorphological analyses
Summer/Fall 2020	Complete management field guides on determining watershed and meadow resilience and developing management strategies; write manuscripts; hold second field tour
Fall/Winter 2020/2021	Hold workshop on resilience assessment; Complete project

**VI. Relationship to NDOW Plans, Policies and Programs:**

NDOW strives to work with multiple stakeholders to assess key habitats and species likely to be affected by varying stressors, including habitat degradation and/or loss, and to develop effective strategies and plans for managing Nevada’s wildlife resources. This project aims to continue development of a strategic, multi-scale framework for assessing resource values and threats to Great Basin riparian and meadow ecosystems using resilience science that includes capacity to (1) prioritize riparian ecosystems for management based on ecosystem characteristics and sensitivity to disturbance, and (2) determine effective management strategies based on ecosystem resilience and resource values. Focal species identification is guided by the State Wildlife Action Plan, with benefits to species managed within NDOW Upland Game, Big Game, Diversity and Fisheries programs. Outcomes from this work will benefit and help guide the Nevada Partners for Conservation and Development program’s restoration activities on riparian and meadow systems.

**VII. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status:**

No NEPA compliance is necessary.

*Project Costs and Funding*

**VIII. Cost Summary**

Please provide a breakdown of the project’s costs in the attached table.

**IX. Is this Project Going to Continue After FY20?** Yes  No

**X. If Yes, is this Going to be an Annual, Recurring Project?** Yes  No

**XI. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:** This project will conclude at the end of State Fiscal Year 2021.

**XII. Would Funds from this Program Be Used for State Matching Purposes?** Yes  No

**XIII. If Yes, Which Federal Grant Would the Matching Funds be Used For?** No

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$ 20,000.00	
C. Total Personnel Costs	\$ 20,000.00	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. VHF Radio Transmitters (30 units @ \$225/ea.)		
B. Vehicles (2 @ \$10,500 per 6 month field season)		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Field Housing		
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ -	\$ -
7. In-Kind Services		
A. ARS Researcher (2)		\$30,000
B.		
C. Total In-Kind Services	\$ -	\$ 30,000.00
Subtotals	\$ 20,000.00	\$ 30,000.00
Total Project Costs	\$	50,000.00





## Fiscal Year 2020 Wildlife Reserve Account Project Proposal

### *Project Summary*

**Project Title:** *A Framework for Restoring and Conserving Great Basin Wet Meadows and Riparian Ecosystems*

**Special Reserve Account(s) that Would Fund this Project:** Upland Game Bird Stamp and Habitat Conservation Fee

**NDOW Project Manager (PM):** Jasmine Kleiber

**Total Funds Requested from the Wildlife Reserve Account(s):**

\$10,000.00 – Upland Game Bird Stamp account

\$10,000.00 – Habitat Conservation Fee account

**Total Cash to be Used from Other Funding Sources (please list by source):**

Previously awarded NDOW funds - HCF - (\$40,000)

Great Basin Landscape Conservation Cooperative (\$100,000)

Bureau of Land Management (\$60,000)

**Total In-Kind Donations by Source (please list by source):** N/A

**Total Project Cost to be Funded by All Sources:** \$220,000

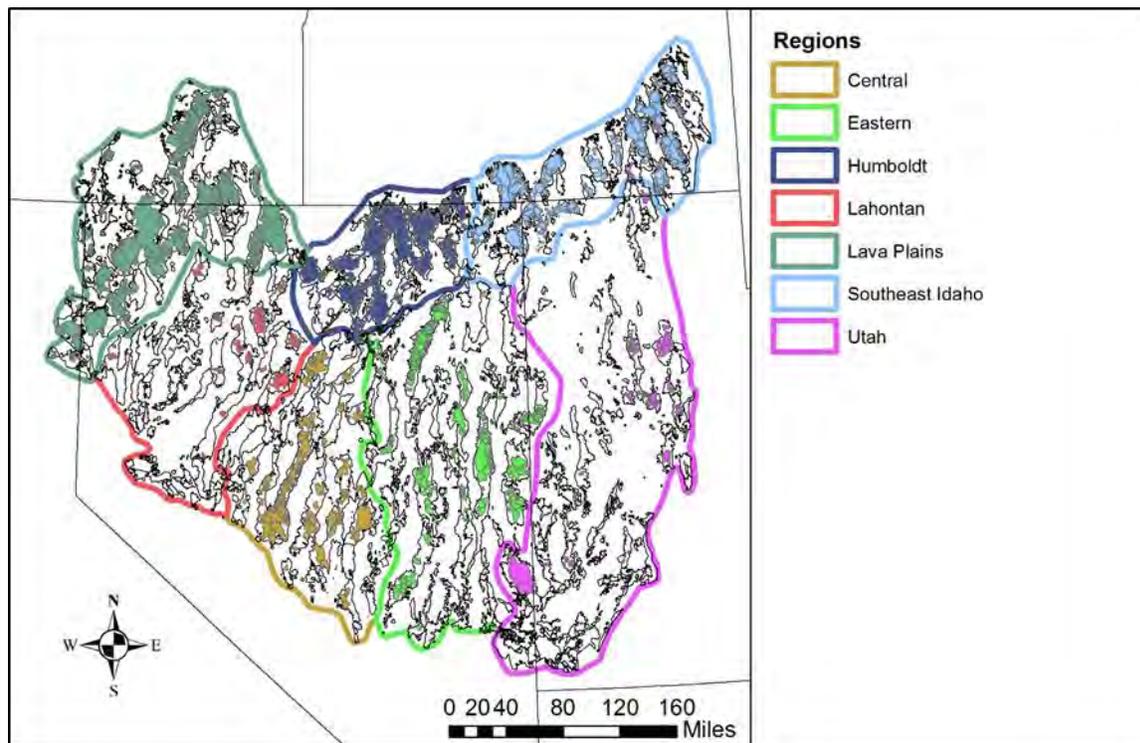
### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved:**

Riparian and wet meadow ecosystems provide critical habitats for both terrestrial and aquatic wildlife in the semiarid Great Basin. Many of these ecosystems have been degraded by various anthropogenic activities and are further threatened by climate warming. Successful restoration and conservation requires prioritizing areas for management and determining the best management strategies. This ongoing, collaborative project is developing a strategic approach for conservation of wet meadows and riparian ecosystems and the species they support for mountain watersheds with perennial streams in the Great Basin. The analyses focus on threats caused by natural and anthropogenic disturbance, including climate change, on wet meadow and riparian ecosystems and their resilience to disturbances, such as wildfires and climate change at watershed and meadow or riparian ecosystem scales. Products include a web-based GIS that will allow managers to visualize, subset, and extract a wide range of geomorphic, hydrologic, and climatic data, along with range maps and habitat models for species of

conservation concern. Field guides will step managers through the process of evaluating watershed, stream system, and riparian ecosystem and meadow resilience to natural and anthropogenic disturbance and then determining the most appropriate management strategies. Educational materials and a field workshop will be developed for managers to facilitate use of the tools. All products will be made available on Forest Service webpage and linked to NDOW and other agency websites.

## II. Project Location (include a map if available):



**Figure 1.** Map of the study area showing the regions included, the mountain ranges, and the focal watersheds.

## III. Project Approach Including Tasks to be Accomplished:

This ongoing project is developing a strategic, multi-scale framework for assessing resource values, climate vulnerability, and other threats to Great Basin riparian and meadow ecosystems using resilience science. Products will provide the capacity to (1) prioritize riparian ecosystems for management based on watershed and riparian ecosystem characteristics and sensitivity to disturbance, and (2) determine effective management strategies based on ecosystem resilience and resource values. Prior funding has been used to develop data collection protocols, collect data, develop a database, and analyze and categorizing watershed and riparian meadow characteristics. Additional funding is needed to finalize the analyses and develop the necessary tools for managers to effectively use this information in targeting areas for management and determining appropriate conservation and restoration strategies. The remaining analyses and tools to be developed include:

**(1) Web Product and Data Archive.** A database of geomorphic, hydrologic, and climatic characteristics (Germanoski et al. 2004, Miller et al. 2011, Engelhardt et al. 2012), threats, and range maps and habitat models for species of conservation concern is being developed for most upland watersheds with third order or greater streams in the Great Basin (see Figure 1, Table 1).

Projected changes in baseflow for the watersheds based on geomorphic, hydrologic and climatic characteristics will also be included. The web-based product and data archive are in the final stages of development. These will allow users to (1) select one or more focal watersheds within the assessment area for analysis, and (2) subset and extract data from the watersheds in order to prioritize them for management based on their geomorphic characteristics, current and future baseflows, dominant threats, and at-risk species. The intent is for this large-scale assessment to be followed by field assessments of resilience to disturbance and determinations of the appropriate management strategies using the field guides described below. The additional funding will be used to help develop Forest Service Web Pages that explain and provide links to the databases, publications, and field guides and tools being provided by the project.

**(2) *Assessment of Watershed and Riparian Ecosystem Sensitivity to Disturbance.*** A process-based classification of the watersheds has been developed based on their resilience to disturbance. The classification builds on our prior work (Germanoski et al. 2004, Miller et al. 2011, Engelhardt et al. 2011), is based on the geomorphic and hydrologic characteristics of the watersheds and stream systems, and was verified during field visits in summer 2017. It considers the watershed type, the dominant processes within the watershed, and the relative tendency of stream channels to remain stable, avulse (move outside of their channel) or incise (downcut) (Table 2, Figure 2). A field guide is being developed that describes (1) the differences in watershed responses to disturbance and the causes of those differences, (2) the linkages between the watershed geomorphic and hydrologic characteristics and reach-scale response(s), (3) the linkages between the geomorphic and hydrologic characteristics and vegetation characteristics, and (4) the process of collecting and interpreting the necessary data to describe watershed and riparian ecosystem resilience to disturbance. Selecting appropriate management strategies based on the relative resilience of the systems will be emphasized. Additional funding will be used to offset the publication costs for the field guides and to host a field tour in 2020.

**(3) *Assessment of Meadow Ecosystem Sensitivity to Disturbance.*** Data are being collected on the processes that determine meadow ecosystem resilience to disturbance for 56 focal systems in the central Great Basin described in Trowbridge et al. (2011). The types of meadows are being categorized according to their hydrogeologic setting, hydrology, vegetation, and stream connections. A field guide is being developed for evaluating (1) the differences in meadow responses to disturbance and the causes of those differences and (2) the process of collecting and interpreting the necessary data to describe meadow resilience to disturbance. Selecting appropriate management strategies based on the relative resilience of the systems will be discussed. Additional funding will be used to offset the publication costs for the field guides and to host a field tour in 2020.

#### **IV. Describe the Beneficial Effects of the Project and How they Will be Measured and Monitored:**

This project is being conducted in collaboration with a diverse management and research group with knowledge of Nevada watersheds and conservation issues to ensure that it will have strong utility for management. Stakeholders/project participants include the Great Basin Landscape Conservation Cooperative (John Tull), Bureau of Land Management (Karen Prentice, Sarah Peterson), National Forest Systems (R4 and Humboldt-Toiyabe National Forest; Mark Muir and John McCann), US Fish and Wildlife Service (Chad Mellison), Nevada Division of Wildlife (Shawn Espinosa), and The Nature Conservancy (Laurel Saito). Research partners include Rocky Mountain Research Station (Jeanne Chambers, David Board), Western Carolina

University (Jerry Miller, Mark Lord), University of Nevada, Reno (Peter Weisberg, Tom Dilts, Anna Knight), Desert Research Institute (Rosemary Carroll), Agricultural Research Service (Kierith Snyder), UC Davis (Erica Fleishman), and USGS (Jason Dunham). The project has face-to-face meetings once a year in addition to monthly calls and webexs. In January 2018, we organized a symposium on the results and management applications of the project that was held at the Society for Range Management meeting in Reno, Nevada, and we plan to look for similar opportunities in the future. In July 2017, we held a field tour of the study watersheds and meadows and we will hold a second field tour in spring/summer 2020. Also, we will develop educational materials and hold a workshop for managers on using the tools we are developing for assessing watershed and meadow ecosystem resilience in 2020. Specific products from additional funding will include:

- A web-based GIS that allows managers to visualize and download all available data for the watersheds and that has tutorials describing how to use the data and maps (University of Nevada, Reno – Tom Dilts, Anna Knight and Peter Weisberg).
- A field guide designed to provide an understanding of differences in watershed resilience to disturbance and that steps managers through the process of assessing resilience to disturbance and determining management strategies (Western Carolina University – Jerry Miller; RMRS – Jeanne Chambers; University of Nevada, Reno – Peter Weisberg).
- A similar field guide to the one for the watersheds for meadow ecosystems (Western Carolina University – Mark Lord and Jerry Miller; RMRS – Jeanne Chambers).
- A Forest Service Web Page that explains and provides the databases, field guides and tools being provided by the project.

**V. Project Schedule:**

Spring/Summer 2019	Complete web-based GIS datasets and tool
Summer/Fall 2019	Complete management field guides on determining watershed and meadow resilience and developing management strategies
Fall/Winter 2019/2020	Develop Forest Service Web Pages and manager tutorials
Spring/Summer 2020	Hold field workshop; complete project.

**VI. Relationship to NDOW Plans, Policies and Programs:**

NDOW strives to work with multiple stakeholders to assess key habitats and species likely to be affected by varying stressors, including habitat degradation and/or loss, and to develop effective strategies and plans for managing Nevada’s wildlife resources. This project aims to finalize development of a strategic, multi-scale framework for assessing resource values and threats to Great Basin riparian and meadow ecosystems using resilience science that includes capacity to (1) prioritize riparian ecosystems for management based on ecosystem characteristics and sensitivity to disturbance, and (2) determine effective management strategies based on ecosystem resilience and resource values. Focal species identification is guided by the State Wildlife Action Plan, with benefits to species managed within NDOW Upland Game, Big Game, Diversity and Fisheries programs. Outcomes from this work will benefit and help guide the Nevada Partners for Conservation and Development program’s restoration activities on riparian and meadow systems.

**VII. NEPA Compliance or other Activities that Need to be Accomplished Before this Project Can be Completed and their Status: N/A**

*Project Costs and Funding*

**VIII. Cost Summary**

Please provide a breakdown of the project's costs in the attached table.

**IX. Is this Project Going to Continue After FY20?** Yes \_\_\_ No X

**X. If Yes, is this Going to be an Annual, Recurring Project?** Yes \_\_\_ No X

**XI. If it is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year:**

**XII. Would Funds from this Program Be Used for State Matching Purposes?** Yes \_\_\_ No X

**XIII. If Yes, Which Federal Grant Would the Matching Funds be Used For?**

## Project Cost Breakdown

Please provide a breakdown of the project's costs over the life of the project in the table below. Define the total to be spent during each fiscal year in your response to question XI. Only include in-kind services under item 7. While NDOW personnel and travel expenses may be included in your cost estimate, you should use alternative funding sources to cover these types of costs as much as possible.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)*</i>	<i>Costs to be Paid by Other Sources*</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel	\$ 20,000.00	\$ 200,000.00
C. Total Personnel Costs	\$ 20,000.00	\$ 200,000.00
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. VHF Radio Transmitters (30 units @ \$225/ea.)		
B. Vehicles (2 @ \$10,500 per 6 month field season)		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A.		
B.		
C.		
D. Total Materials Costs	\$ -	\$ -
6. Miscellaneous		
A. Field Housing		
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ -	\$ -
7. In-Kind Services		
A. USGS Research Wildlife Biologist (Permanent, 0.1 FTE)		
B. USGS Wildlife Biologist (Term, 0.1 FTE)		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 20,000.00	\$ 200,000.00
Total Project Costs	\$	220,000.00

## List of Relevant References:

- Chambers, J. C. and J. R. Miller, eds. 2004. Great Basin Riparian Ecosystems - Ecology, Management and Restoration. Island Press, Covelo, CA. 303 pages.
- Chambers, J. C. and J. R. Miller, eds. 2011. Geomorphology, hydrology, and ecology of Great Basin meadow complexes—implications for management and restoration. Gen. Tech. Rep. RMRS-GTR-258.
- Chambers, J. C., J. R. Miller, D. Germanoski, D. A. Weixelman. 2004. Process based approaches for managing and restoring riparian ecosystems. Pages 196-231 in J. C. Chambers, J. R. Miller (eds). Great Basin Riparian Ecosystems - Ecology, Management and Restoration. Island Press, Covelo, CA.
- Engelhardt, B. M., P. J. Weisberg and J. C. Chambers. 2012. Influences of watershed geomorphology on extent and composition of riparian vegetation. J. Veg. Sci. DOI: 10.1111/j.1654-1103.2011.01328.
- Germanoski, D., J. R. Miller. 2004. Basin sensitivity to channel response to natural and anthropogenic disturbance. Pages 88-123. in J. C. Chambers, J. R. Miller (eds). Great Basin Riparian Ecosystems - Ecology, Management and Restoration. Island Press, Covelo, CA.
- Lord, M. L., D. W. Jewett, J. R. Miller, et al. 2011. Hydrologic processes affecting meadow ecosystems. in: J. C. Chambers and J. R. Miller (eds). Geomorphology, Hydrology and Ecology of Great Basin Meadow Complexes: Implications for Management and Restoration. Gen. Tech. Rep. RMRS-GTR-258 Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 44-66.
- Trowbridge, W., J. C. Chambers, D. Germanoski, M. L. Lord, J. R. Miller and D. W. Jewett. 2011. Classification of meadow ecosystems based on watershed and valley segment/reach characteristics. in: J. C. Chambers and J. R. Miller (eds). Geomorphology, Hydrology and Ecology of Great Basin Meadow Complexes: Implications for Management and Restoration. Gen. Tech. Rep. RMRS-GTR-258 Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 95-112.



## **Fiscal Year 2020 Wildlife Reserve Account Project Proposal**

### *Project Summary*

**Project Title: Eastern WMA Complex Weed Control**

**Special Reserve Account(s) that Would Fund this Project:** Habitat Conservation Fee, Duck Stamp, Upland Game Bird Stamp

**NDOW Project Manager (PM):** Adam Henriod

**Funds Requested from Each Special Reserve Account:** \$10,000 Habitat Conservation Fee, \$10,000 Duck Stamp, \$10,000 Upland Game Bird Stamp

**Funds to be Used from Other Funding Sources (please itemize the amount by source):**

A Nevada Department of Agriculture (NDA) grant awarded to Tri-County Weed Control: This grant will be used on the Steptoe Valley WMA and will match 50:50 all (in-kind included) dollars spent on weed control at Steptoe Valley WMA. It is estimated this grant will contribute close to \$25,000 towards weed removal.

**Total Project Cost Not Including In-Kind Donations:** \$55,000

**Total Project Cost Including In-Kind Donations (if applicable):** \$55,000

### *Project Proposal*

#### **I. Purpose of Project and Goals to be Achieved**

NDOW is mandated by state law to control listed noxious weeds found on its property. Removal of noxious and undesirable weeds improves appearance, public access, limits the spread of these weeds to other areas and enhances wildlife habitat. The goal of this project is to remove noxious/invasive weeds such as Russian knapweed, hoary cress, perennial pepperweed, phragmites and Canada thistle found on the Steptoe Valley, Wayne E. Kirch and Key Pittman WMAs. This will be accomplished through the application of herbicides to noxious and other invasive weeds in upland areas, riparian areas, parking lots and right of ways.

WMA staff has engaged heavily in efforts to eradicate invasive vegetation on these properties; however, the magnitude of weed infestations currently exceeds the staff's ability to provide the treatments needed to have a long-term impact. This project seeks reserve account funding for additional resources needed to apply herbicide on the Kirch, Key Pittman and Steptoe Valley WMAs.

**II. Project Location including County (include a map if available):**

The Steptoe Valley WMA is located in White Pine County. It is composed of 12,806 acres. Comins Lake and 13 seasonal ponds are located on the property. Wayne E. Kirch Wildlife Management Area is located in the White River Valley in northeastern Nye County. The Kirch WMA is composed of a total of 14,815 acres, including five reservoirs and five wetland impoundments. Key Pittman WMA is located in Lincoln County with two reservoirs and two wetland impoundments within the 1,332 acres managed by NDOW.

**III. Land Status: Private or Public?**

Public

**IV. If Public, Which Agency Manages the Land? (Name the District if Managed by the BLM or USFS)**

State of Nevada

**V. UTM Coordinates if Known:**

N/A

**VI. Project Approach Including Tasks to be Accomplished and Target Species. Also Include Acres to be Treated or Restored or Any Other Measurable Factors:**

Awarded funds will be used to purchase herbicides and hire contract labor to maintain and enhance current weed control efforts on NDOW-managed WMAs. In order to address increasing issues with weeds, and given the substantial duties of NDOW staff related to tasks other than fighting weeds, we are in need of additional monies to contract out additional weed spraying to improve the effectiveness of weed control efforts. Tri-County Weed Control is most likely to be contracted to conduct the spraying.

Examples of specific tasks to be accomplished by this project are provided below.

A. Perennial pepperweed (*Lepidium lotifolium*), and hoary cress (*Cardaria draba*) will be treated in the spring and summer of 2020 by applying appropriate herbicides from ATV, truck, and backpack sprayers. The chemicals chosen for control of these species will be determined by the characteristics of the site and the life stage of the plant; all chemicals are applied according to their labels.

B. Ditches, water control structures, boating access points, parking lots and rights-of-way will be treated, as needed, in the summer of 2020 by applying glyphosate herbicide from ATV, truck, and backpack sprayers. Control of undesirable vegetation in ditches and water control structures is essential for water delivery to reservoirs, wetland impoundments, and irrigation of food plots.

C. Russian knapweed (*Acroptilon repens*), and Canada thistle (*Cirsium arvense*) will be treated in the fall of 2019 and spring of 2020 by applying appropriate herbicides from ATV, truck, and backpack sprayers.

D. Vegetation on wetland impoundments and reservoirs will be treated, as needed, with aquatic-approved herbicides. Primary focus will be on phragmites (*Phragmites australis*) removal on the Key Pittman WMA. Treatments on reservoirs will be completed using a boat-mounted sprayer; wetland impoundments will be treated with an ATV sprayer. Treatment of emergent vegetation in these areas will improve feeding, resting, nesting, and brood-rearing habitat for waterfowl.

**VII. Describe the Beneficial Effects of the Project, How They Will be Measured and Describe Your Monitoring Plan:**

There will be a major reduction in noxious and other types of invasive weed species at the treated areas, thus improving the quality of wildlife habitats.

Monitoring through yearly inspections will determine the effectiveness of treatments. Treated sites will be evaluated after application of herbicides to determine the effectiveness of the timing, method and chemicals chosen for the treatment. Effective treatments will show a significant die-off of targeted vegetation after treatment and reduced regrowth the following growing season. The vegetation control will improve habitat values and public access.

**VIII. Project Schedule (including start and end dates and major milestones):**

This project is an ongoing, yearly habitat management activity. Herbicide treatments to vegetation on the WMAs will primarily occur in the late summer and fall of 2019 and the spring and summer of 2020. Please see the proposed tasks above for the timing of treatment for each type of targeted vegetation.

**IX. Relationship to NDOW Plans, Policies and Programs:**

This program certainly falls within NDOW's general goal of maintaining and enhancing wildlife habitats. More specifically, the Conceptual Management Plans for the WMAs all contain goals and objectives such as the following: "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 (WMAs) by applying good science and best management practices through implementation of Comprehensive Management Plans."

**X. NEPA Compliance, Archeological Clearances, or other Authorizations that are Needed Before this Project Can be Completed and Their Status:**

None

*Project Costs, Funding and Contracting*

**XI. Cost Summary (briefly describe the project's major types of spending):**

All funds will be used to purchase herbicide and to contract for weed spraying with Tri-County Weed Control.

**XII. Is this Project Going to Continue After FY20? Yes  No**

**XIII. If Yes, is this Going to be an Annual, Recurring Project? Yes  No**

**XIV. If the Project is Going to Continue After FY20, Define the Total Dollars to be Spent During Each Fiscal Year of the Project's Lifespan:**

This project will seek \$30,000 every fiscal year until weed treatment on the Key Pittman, Wayne E. Kirch and Steptoe Valley WMAs can be adequately handled by WMA staff.

**XV. Would Funds from this Program Be Used as State Match for Federal Grant Funding?**

Yes  No

**XVI. If Yes, Which Federal Grant Would the Matching Funds Be Used For?**

NDOW's WMA Federal Grant

**XVII. Describe What Type of Contract(s) Will be Needed or Currently Exists (if any) to Complete Work Under this Project (Independent Contract, Sub-grant Agreement, Inter-local Agreement or Good of the State Contract):**

Inter-local Agreement #19-06 is currently in place and will used to complete this project.

**XVIII. If a Contract Exists, or is Needed, Define the Contract Amount, Contractor/Sub-grantee, and Start and End Dates**

The current contract with Tri-County Weed Control was approved in October 2018 and will expire on June 30, 2020. The total cost of the contract was not to exceed \$120,000. Approximately \$92,000 will be available on the contract at the close of the current fiscal year.

## Project Cost Breakdown

Please provide a breakdown of the project's *total costs over the life of the project* in the table below. If your project is a multi-year project, define the total to be spent during each fiscal year in your response to question XIV on the previous page. Only include in-kind contributions under item 7 in the table below. Any NDOW personnel or travel expenses should be covered by funding sources other than the Wildlife Reserve Accounts.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel*		
B. Other Personnel		
C. Total Personnel Costs	\$ -	\$ -
3. Travel Costs*		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A. Herbicide	\$ 4,000.00	
B.		
C.		
D. Total Materials Costs	\$ 4,000.00	\$ -
6. Miscellaneous Costs		
A. Tri-County Weed Control contract for weed spraying	\$ 26,000.00	\$ 25,000.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 26,000.00	\$ 25,000.00
7. In-Kind Contributions		
A.		
B.		
C. Total In-Kind Contributions	\$ -	\$ -
Subtotals	\$ 30,000.00	\$ 25,000.00
Total Project Costs	\$	55,000.00





## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Post-Fire Upland Habitat Restoration - Tule Springs  
 Project Manager: Anthony Miller Phone: 702-280-1177 Email ajmiller@ndow.org  
 Project Monitor: Matt Flores Start Date: 11/1/2019  
 Implementation Lead Nevada Department of Wildlife End Date: 12/31/2020  
 Partners: Bureau of Land Management, Nevada Department of Wildlife  
 Project Category: Habitat Restoration  
 Project Category: Upland Habitat Improvement  
 Project Actions: Seedling planting  
 Priority Resource: Small game  
 Priority Species: Quail  
 County Location: Lincoln  
 General Location: Southeastern Nevada in Lincoln County

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
Bureau of Land Management	\$235,000		
NDOW Habitat Conservation Fee	\$12,500		
NDOW Upland Game Stamp	\$12,500		
<b>Project Totals:</b>	<b>\$260,000</b>		

### *Project Proposal*

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

The purpose of this project is to restore wildlife habitat at guzzlers within burned areas. The restoration work will use native cover plants that benefit wildlife using nearby guzzlers. It is anticipated that wildlife usage will increase at the guzzlers near the restoration sites. The primary species that will benefit include Gambel's quail, chukar, mourning dove, desert cottontail, and multiple other wildlife species dependent on free water.

#### *2. Project Approach and Tasks*

To reduce wildfire potential, BLM will be creating fuel breaks by treating brome grasses with herbicide along roads and subsequently seeding for green stripping. The roadways will include access roads leading to area guzzlers. During implementation of the project NDOW will subsequently plant perennial native vegetation at or adjacent to described small game water developments. Plantings will be protected from herbivores and monitoring of the planting sites will be necessary to ensure the survival of new plants and viability of wildlife habitat.

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

Restoration of strategically located islands of habitat, and connectivity of intact habitats. Establishing and maintaining habitat corridors is key for plants and wildlife. An increase in wildlife usage at the guzzlers located near the restoration sites.

### *4. Project Schedule*

Fall 2019 - BLM application of herbicide for fuel break.

Fall/Winter 2019- BLM seeding for restoration.

Spring 2020 – NDOW habitat restoration planting.

Fall 2020 - NDOW habitat restoration planting.

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

The BLM Ely District Office has prepared a Determination of NEPA Adequacy (DNA) document for the above described federal actions and include NDOW's restoration objectives at selected sites on BLM-managed lands

### *6. Monitoring Plan*

Regular site assessment of plant health and size, water requirements, and cages to protect plants from herbivores. Presence of wildlife and targeted species will be assessed in relationship to habitat enhancements.

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

This project is consistent with NDOW Habitat Division's program emphasis: 1) Protect, enhance, and rehabilitate wildlife habitats throughout the State; 2) Enhance water deficient habitat for wildlife through the effective development and maintenance of water sources; 3) Develop positive communication with partner governmental agencies having land management or wildlife habitat responsibilities.

**Special Reserve Account Project Cost Estimate Table**

**Post-Fire Upland Habitat Restoration -**

**Name of Proposed Project:** Tule Springs  
**Name of Proposed Project Manager:** Anthony Miller  
**Project ID:** 444

Please provide a breakdown of your project's costs in the table below. Only include costs for the upcoming fiscal year for which you are applying. Only include in-kind services under item 7. NDOW personnel and travel expenses may not be covered by any of our Special Reserve Accounts - you must use alternative funding sources to cover these types of costs.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDF Personnel	\$ 7,000.00	
B. GBI Personnel	\$ 8,000.00	
C. Total Personnel Costs	\$ 15,000.00	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A. Plants	\$ 5,000.00	
B. Plant Cage material	\$ 4,000.00	
C.		
D. Total Materials Costs	\$ 9,000.00	\$ -
6. Miscellaneous		
A. BLM fuelbreaks and seeding		\$ 235,000.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 1,000.00	\$ 235,000.00
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 25,000.00	\$ 235,000.00
Total Project Costs	\$	260,000.00





## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Post-Fire Upland Habitat Restoration - Kane Springs  
 Project Manager: Anthony Miller Phone: 702-280-1177 Email ajmiller@ndow.org  
 Project Monitor: Matt Flores Start Date: 3/2/2020  
 Implementation Lead Nevada Department of Wildlife End Date: 5/3/2021  
 Partners: Nevada Department of Wildlife, Bureau of Land Management  
 Project Category: Habitat Restoration  
 Project Category: Upland Habitat Improvement  
 Project Actions: Seedling planting  
 Priority Resource: Small game  
 Priority Species: Quail  
 County Location: Lincoln  
 General Location: Southern Lincoln County, Nevada

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
Bureau of Land Management	\$237,000		
NDOW Habitat Conservation Fee	\$12,500		
NDOW Upland Game Stamp	\$12,500		
<b>Project Totals:</b>	<b>\$262,000</b>		

### *Project Proposal*

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

The purpose of this project is to restore wildlife habitat at guzzlers within burned areas. The restoration work will use native cover plants that benefit wildlife using nearby guzzlers. It is anticipated that wildlife usage will increase at the guzzlers near the restoration sites. The primary species that will benefit include Gambel's quail, chukar, mourning dove, desert cottontail, and multiple other wildlife species dependent on free water.

#### *2. Project Approach and Tasks*

To reduce wildfire potential, BLM will be creating fuel breaks by treating brome grasses with herbicide along roads and subsequently seeding for green stripping. The roadways will include access roads leading to area guzzlers. During implementation of the project NDOW will subsequently plant perennial native vegetation at or adjacent to described small game water developments. Plantings will be protected from herbivores and monitoring of the planting sites will be necessary to ensure the survival of new plants and viability of wildlife habitat.

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

Restoration of strategically located islands of habitat, and connectivity of intact habitats. Establishing and maintaining habitat corridors is key for plants and wildlife. An increase in wildlife usage at the guzzlers located near the restoration sites.

### *4. Project Schedule*

Fall 2019 - BLM application of herbicide for fuel break.

Fall/Winter 2019- BLM seeding for restoration.

Winter 2019/Spring 2020 – NDOW habitat restoration planting.

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

The BLM Ely District Office has prepared a Determination of NEPA Adequacy (DNA) document for the above described federal actions and include NDOW's restoration objectives at selected sites on BLM-managed lands

### *6. Monitoring Plan*

Regular site assessment of plant health and size, water requirements, and herbivore protection cages. Presence of wildlife and targeted species will be assessed in relationship to habitat enhancements.

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

This project is consistent with NDOW Habitat Division's program emphasis: 1) Protect, enhance, and rehabilitate wildlife habitats throughout the State; 2) Enhance water deficient habitat for wildlife through the effective development and maintenance of water sources; 3) Develop positive communication with partner governmental agencies having land management or wildlife habitat responsibilities.

**Special Reserve Account Project Cost Estimate Table**

**Post-Fire Upland Habitat Restoration -**

**Name of Proposed Project:** Kane Springs  
**Name of Proposed Project Manager:** Anthony Miller  
**Project ID:** 445

Please provide a breakdown of your project's costs in the table below. Only include costs for the upcoming fiscal year for which you are applying. Only include in-kind services under item 7. NDOW personnel and travel expenses may not be covered by any of our Special Reserve Accounts - you must use alternative funding sources to cover these types of costs.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDF Personnel	\$ 8,000.00	
B. Other Personnel	\$ 8,000.00	
C. Total Personnel Costs	\$ 16,000.00	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A. Hand and Power tools		\$ 2,000.00
B.		
C. Total Equipment Costs	\$ -	\$ 2,000.00
5. Materials		
A. Plant Cage Materials	\$ 4,000.00	
B. Plants	\$ 4,000.00	
C.		
D. Total Materials Costs	\$ 8,000.00	\$ -
6. Miscellaneous		
A. BLM fuelbreaks and seeding		\$ 235,000.00
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 1,000.00	\$ 235,000.00
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 25,000.00	\$ 237,000.00
Total Project Costs	\$	262,000.00





## Wildlife Reserve Account Project Proposal

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### *Project Summary*

Project Name: Quinn River Valley Habitat Enhancement - Vanderhoek Property  
 Project Manager: Bobby Jones Phone: 775-688-1444 Email bsjones@ndow.org  
 Project Monitor: Mark Freese Start Date: 10/7/2019  
 Implementation Lead Nevada Department of Wildlife End Date: 11/30/2020  
 Partners: Nevada Department of Wildlife  
 Project Category: Habitat Restoration  
 Project Category: Upland Habitat Improvement  
 Project Actions: Drill seeding, Herbicide application  
 Priority Resource: Small game  
 Priority Species: Quail  
 County Location: Humboldt  
 General Location: Quinn River Valley ~ 7 miles NW of Orovada

### *Project Funding Request*

Funding Source	Amount Requested	Existing Budget Approval	In Kind Contribution
NDOW Upland Game Stamp	\$10,000		
<b>Project Totals:</b>	<b>\$10,000</b>		

### *Project Proposal*

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

This project's goal is to create 50 acres of cover and nesting habitat for quail and pheasant on private land. This would be accomplished by treating 50 acres of pivot corners cropland with a pre-emergent herbicide during the fall of 2019 and subsequently drill seeding desirable species in the fall of 2020.

The total potential area that we can operate within is approximately 70 acres but since we want to allow for buffer zones for equipment access to pivots, and to allow for pest control (ground squirrels) for the private landowner, we are proposing to enhance 50 acres of habitat for upland game species.

#### *2. Project Approach and Tasks*

In 2017 this site was drill seeded with Canadian wildrye (*Elymus canadensis*) and Blue Flax (*Linum lewisii*) at 10 lbs PLS (pure live seed) per. acre. as per USDA plants database recommendations (see:

[https://plants.usda.gov/plantguide/pdf/pg\\_elca4.pdf](https://plants.usda.gov/plantguide/pdf/pg_elca4.pdf)). Unfortunately, in 2018 we did not see a significant amount of Canada wildrye or Blue flax emergence. The over-winter precipitation was below average with most of the precipitation received in the form of rain in spring 2018. The spring precipitation also helped to fuel competition from weedy species that was much higher than we anticipated. We are hopeful for increased establishment of the drill seeded desirable species in 2019. Oftentimes establishment after two growing seasons is a much better indicator of success compared to determinations being made after only one growing season. Although we anticipate increased establishment of desirable species we don't expect these species will be able to outcompete the weedy species on-site long term without additional intervention. That is why we are proposing to apply a pre-emergent herbicide this fall subsequently followed by drill seeding the following year.

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

Quail and pheasant populations have been on the decline for several years in this valley and that decline has been attributed to a lack of necessary resources. The two most limited and critically important resources being cover and water. This project was identified to take advantage of an area with a good water resource that currently lacks the necessary cover.

By restoring cover and nesting habitat in the Quinn River Valley on pivot corners in the Quinn River Valley we would increase the carrying capacity for upland game bird species to persist in the valley in greater numbers than they do today. Cover and nesting habitat is limited and without coming up with new methods to increase habitat availability we cannot expect the populations to rebound. Long-term the goal is to identify how to establish desirable vegetation on pivot corners and to replicate that many times over.

### *4. Project Schedule*

Fall 2019 - Pre-emergent Herbicide Treatment  
Fall 2020 - Drill seeding desirable species

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

Not applicable; this project is on private property.

### *6. Monitoring Plan*

Monitoring would consist of vegetation monitoring through multiple years, and photo points. We want to measure the success of the pre-emergent herbicide treatment, and quantify the establishment of drill seeded species.

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

This project is consistent with NDOW's mission and charter:

- 1) "To protect, preserve, manage and restore wildlife and its habitat..."
- 2) "To the maintenance and enhancement of Nevada's diverse wildlife habitats."
- 3) "To the maintenance and enhancement of Nevada's wildlife diversity."
- 4) "To a management program which is carefully designed to result in healthy wildlife populations throughout the state."
- 5) "To a leadership role in the conservation and management of the state's wildlife resources."
- 6) "Work with state, federal and local agencies, as well as, private landowners, industry and conservation organizations through the Nevada Partners for Conservation and Development to preserve and protect quality habitats and enhance deficient habitats."
- 7) "Strategically employ and leverage special reserve account revenues to acquire, protect, treat and restore wildlife habitats."

**Special Reserve Account Project Cost Estimate Table**

**Vanderhoek Habitat Enhancement -**

**Name of Proposed Project:** Quinn River Valley  
**Name of Proposed Project Manager:** Bobby Jones  
**Project ID:** 446

Please provide a breakdown of your project's costs in the table below. Only include costs for the upcoming fiscal year for which you are applying. Only include in-kind services under item 7. NDOW personnel and travel expenses may not be covered by any of our Special Reserve Accounts - you must use alternative funding sources to cover these types of costs.

<i>Project Components</i>	<i>Costs to be Paid by NDOW Special Reserve Account(s)</i>	<i>Costs to be Paid by Other Sources</i>
1. Land Acquisitions		
2. Personnel Costs		
A. NDOW Personnel		
B. Other Personnel		
C. Total Personnel Costs	\$ -	\$ -
3. Travel Costs		
A. Per Diem		
B. Mileage		
C. Total Travel Costs	\$ -	\$ -
4. Equipment		
A.		
B.		
C. Total Equipment Costs	\$ -	\$ -
5. Materials		
A. Seed	\$7,000.00	
B. Herbicide	\$ 500.00	
C.		
D. Total Materials Costs	\$ 7,500.00	\$ -
6. Miscellaneous		
A. Herbicide Application	\$ 2,500.00	
B.		
C.		
D.		
F. Total Miscellaneous Costs	\$ 2,500.00	\$ -
7. In-Kind Services		
A.		
B.		
C. Total In-Kind Services	\$ -	\$ -
Subtotals	\$ 10,000.00	\$ -
Total Project Costs	\$	\$ 10,000.00



## Churchill County Agenda Report

**Date Submitted:** June 11, 2019

**Agenda Item #:** Appointments -  
**Meeting Date Requested:** June 19,  
2019

**To:** Advisory Board to Manage Wildlife

**From:**

**Subject Title:** Consideration and possible action re: Commission Regulation 18-12, Amendment 2, 2018-2019 Upland Game and Furbearer Seasons and Bag Limits..

**Type of Action Requested:** Accept

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** motion to approve Commission Regulation 18-12, Amendment 2, for the 2018-2019 Upland Game and Furbearer Seasons and Bag Limits as submitted.

**Discussion:** The Nevada Board of Wildlife Commissioners will consider and vote to amend regulations for upland game birds and mammals, as well as furbearers, for the 2019 season. This regulation will also include fall wild turkey seasons for 2019 and spring wild turkey seasons for 2020.

**Alternatives:** Not approve the recommendations and make other suggestions.

**Fiscal Impact:** N/A

**Explanation of Impact:** N/A

**Funding Source:** N/A

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

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Pamela D. Moore, Deputy Clerk to the Board

Date: June 12, 2019

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



# Churchill County Agenda Report

*Peggy A. Hughes*

Date: June 12, 2019

\_\_\_\_\_  
Peggy A. Hughes, Member

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

- 1) None  
2) None

Aye: 0  
Nay: 0

*Patricia J. Moore*

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



## STATE OF NEVADA

## DEPARTMENT OF WILDLIFE

## Game Division

6980 Sierra Center Parkway, Ste 120 • Reno, Nevada 89511  
 (775) 688-1500 Fax (775) 688-1987

## MEMORANDUM

May 28, 2019

**To:** Nevada Board of Wildlife Commissioners, County Advisory Boards to Manage Wildlife, and Interested Publics

**From:** Brian Wakeling, Administrator, Game Division *BFW*

**Title:** **Commission Regulation 18 - 12, Amendment 2, 2018–2019 Upland Game and Furbearer Seasons and Bag Limits – For Possible Action**

**Description:** The Commission will consider and may vote to amend regulations for upland game birds and mammals as well as furbearers for the 2019 season. This regulation will also include fall wild turkey seasons for 2019 and spring wild turkey seasons for 2020.

**Presenter:** Wildlife Staff Specialist Shawn Espinosa

Summary:*Upland game*

Amendments that are recommended in this Commission Regulation deal with sage-grouse and turkey seasons that address local variations in populations, recruitment, and access. *Hunting season recommendations for Greater Sage-grouse follow guidelines established by the Western Association of Fish and Wildlife Agencies as well as the "Nevada Sage-grouse Hunting Season Strategies" developed in 2018.* A summary of recommendations includes:

*Greater Sage-grouse Hunting Season Recommended Amendments:*

- Unit 141 in Eureka County – reduce season length from 9 days to 2 days;
- Unit 061 in Elko County – close due to South Sugarloaf Fire;
- Units 104 and 121 in Elko County – reduce season length from 16 days to 9 days;
- Unit 143 in Eureka County – reduce season length from 16 days to 9 days;
- Unit 154 in Lander County – reduce season length from 16 days to 9 days;

- Units, or portions of Units, 104, 108, 111–113, 121, 131, 144, 221, and 222 in White Pine County – reduce season length from 16 days to 9 days;
- Units 221 and 222 in White Pine County – close (Lincoln County portions of these units have been closed for several years); and
- Sheldon Special Sage-grouse Hunt – recommend reducing the number of reservations in each season from 75 to 45.

*Junior Wild Turkey 2020 Spring Turkey Hunt*

- Lincoln County – recommend increasing the number of available tags from 2 to 4.

*Limited Entry 2020 Spring Turkey Hunt*

- Units 102 and 065 in Elko County – recommend reducing the number of available tags from 12 to 10;
- Unit 154 in Lander County – recommend opening this hunt unit with a quota of 3 tags;
- Lincoln County – recommend increasing the number of available tags from 8 to 12;
- Mason Valley Wildlife Management Area – recommend reducing the number of available tags in all 3 seasons from 6 to 5; and
- Pershing County – recommend reducing the number of available tags in both seasons from 12 to 10.

Recommendation:

The Department recommends that the Commission **VOTE TO APPROVE COMMISSION REGULATION 18 – 12 AMENDMENT 2, 2019 UPLAND GAME AND FURBEARER SEASONS AND BAG LIMITS AS PRESENTED.**

# STATE OF NEVADA BOARD OF WILDLIFE COMMISSIONERS

The Board of Wildlife Commissioners under the authority of Section 501.181, 503.090, 503.140 and 503.245 of the Nevada Revised Statutes, does hereby adopt the following regulations for the management of game birds, small game, and furbearing mammals.

## CR 18-12 Amendment #2 2019-2020

**SEASONS, BAG LIMITS, AND SPECIAL REGULATIONS FOR UPLAND GAME BIRDS, RABBITS, WILD TURKEY, FURBEARERS, AMERICAN CROW, MOURNING AND WHITE-WINGED DOVE, AND FALCONRY SEASONS FOR UPLAND GAME BIRDS AND RABBITS.**

**THIS AMENDMENT MODIFIES GREATER SAGE-GROUSE SEASONS FOR CERTAIN HUNT UNITS AND QUOTAS FOR WILD TURKEY.**

EXPLANATION – Matter in *blue italics* is new; matter in red brackets [~~omitted material~~] is material to be omitted.

### **UPLAND GAME** *(Units referenced are Game Management Units)*

<b>SAGE-GROUSE</b>	
OPEN AREAS:	<p>That portion of Unit 184 in Churchill and Lander Counties</p> <p>Unit 031 of Humboldt County</p> <p><i>Unit 141 of Eureka County</i></p>
SEASON DATES:	First Saturday and Sunday in October
LIMITS:	Daily bag limit 2. Possession limit 4.
SHOOTING HOURS:	Sunrise to sunset daily.
SPECIAL REGULATIONS:	<b>Closed to nonresidents.</b>

<b>SAGE-GROUSE</b>	
OPEN AREAS:	Hunt Units, or those portions of hunt units, <b>061, 062, 064, 065, 067, 071-077, 081, 101-104 103, 109, and 124</b> in Elko County
	Hunt Units, or those portions of hunt units <b>143, 155, 162 and 163</b> in Eureka County
	Hunt Units, or those portions of hunt units, <b>154, 155, 161, 162, 172 and 173</b> in Lander County
	Hunt Units, or those portions of hunt units, <b>161-163, 172, and 173</b> in Nye County
	<del>Hunt Units, or those portions of hunt units, <b>104, 108, 111-113, 121, 131, 144, 221 and 222</b> in White Pine County</del>
SEASON DATES:	September 28 – October 13, 2019
LIMITS:	Daily bag limit 2. Possession limit 4.
SHOOTING HOURS:	Sunrise to sunset daily.
SPECIAL REGULATIONS:	<b>Closed to nonresidents.</b>

<b>SAGE-GROUSE</b>	
OPEN AREAS:	Hunt Units, or those portions of hunt units <b>012</b> in Humboldt County
	Hunt Units, or those portions of hunt units, <b>141, 143, 144 and 145</b> in Eureka County
	<i>Hunt Unit 154 of Lander County</i>
	Hunt Units, or those portions of hunt units, <b>011-015</b> in Washoe County
	<i>Hunt Units 104 and 121 in Elko County</i>
	<i>Hunt Units, or those portions of hunt units, <b>104, 108, 111-113, 121, 131, 144</b> in White Pine County</i>
SEASON DATES:	September 28 – October 6, 2019
LIMITS:	Daily bag limit 2. Possession limit 4.
SHOOTING HOURS:	Sunrise to sunset daily.
SPECIAL REGULATIONS:	<b>Closed to nonresidents.</b>

<b>SHELDON NATIONAL WILDLIFE REFUGE SPECIAL SAGE-GROUSE HUNT</b>	
OPEN AREAS:	<b>Unit 033 of Washoe and Humboldt Counties (Sheldon National Wildlife Refuge) excluding the Little Sheldon and other areas as posted.</b>
<b>HUNT PERIOD</b>	
SEASON DATES:	September 21-22, 2019
LIMITS:	Daily bag limit 2. Possession limit 4.
SHOOTING HOURS:	Sunrise to sunset daily.
SPECIAL REGULATIONS:	<p><b>Open to nonresidents.</b></p> <p>Limited to <b>75 45 reservations</b> awarded through random draw.</p> <p>Unless his or her privilege is limited or revoked pursuant to law, any resident or nonresident is eligible to apply once for the Sheldon Special Sage Grouse Hunt in a year.</p> <p>Up to 4 applicants may apply as a party. Parties may be comprised of a combination of residents and nonresidents.</p> <p>Sheldon Special Sage-grouse Hunt applications must be submitted online through <a href="http://www.ndowlicensing.com">www.ndowlicensing.com</a>. Paper applications will not be accepted. Applications will be accepted until 11:00 p.m. the first Friday in August. Successful applicants will be notified via e-mail.</p>

<b>SHELDON NATIONAL WILDLIFE REFUGE SPECIAL SAGE-GROUSE HUNT</b>	
OPEN AREAS:	<b>Unit 033 of Washoe and Humboldt Counties (Sheldon National Wildlife Refuge) excluding the Little Sheldon and other areas as posted.</b>
<b>HUNT PERIOD</b>	
SEASON DATES:	September 28 – 29, 2019
LIMITS:	Daily bag limit 2. Possession limit 4.
SHOOTING HOURS:	Sunrise to sunset daily.
SPECIAL REGULATIONS:	<p><b>Open to nonresidents.</b></p> <p>Limited to <b>75 45 reservations</b> awarded through random draw.</p> <p>Unless his or her privilege is limited or revoked pursuant to law, any resident or nonresident is eligible to apply once for the Sheldon Special Sage Grouse Hunt in a year.</p> <p>Up to 4 applicants may apply as a party. Parties may be comprised of a combination of residents and nonresidents.</p> <p>Sheldon Special Sage-grouse Hunt applications must be submitted online through <a href="http://www.ndowlicensing.com">www.ndowlicensing.com</a>. Paper applications will not be accepted. Applications will be accepted until 11:00 p.m. the first Friday in August. Successful applicants will be notified via e-mail.</p>

*\*except per NAC 504.340*

## WILD TURKEY

<b>JUNIOR WILD TURKEY 2020 SPRING - HUNT 0138</b>		
PHYSICAL CHARACTERISTICS:	Bearded Wild Turkey	
LIMIT:	1 by tag only.	
SHOOTING HOURS:	One half hour before sunrise to sunset daily	
SPECIAL REGULATIONS:	<p><b>Youth must be 12 prior to the opening of the hunt season indicated and not attain their 18<sup>th</sup> birthday until after the last day of the hunt season indicated, pursuant to NAC 502.063.</b></p> <p><b>Applications for these tags or bonus points will only be accepted during the draw application periods. Remaining tags will not be issued.</b></p> <p><b>Closed to nonresidents.</b></p>	
OPEN AREAS:	<b>Season Dates</b>	<b>Quota</b>
<b>Mason Valley Wildlife Management Area</b>	Last Saturday in March through first Sunday in May	3
<b>Moapa Valley of Clark County*</b>	Last Saturday in March through second Friday in April	3
<b>Unit 115 within White Pine County**</b>	Last Saturday in March through second Sunday in April	2
<b>Unit 115 within White Pine County**</b>	Third Saturday in April through first Sunday in May	2
<b>Pershing County*</b>	Last Saturday in March through second Sunday in April	2
<b>Pershing County*</b>	Third Saturday in April through first Sunday in May	2
<b>Unit 152 of Lander County*</b>	Last Saturday in march through first Sunday in May	1
<b>Lincoln County</b>	Last Saturday in March through first Sunday in May	<del>2</del> 4
<p><i>* Applicants are advised that a significant portion of the turkey population occurs on private lands and permission should be obtained from a landowner before applying for this hunt.</i></p> <p><i>** Applicants are advised that a significant portion of the turkey population occurs on Great Basin National Park lands. Hunting is not permitted within park boundaries.</i></p>		

<b>WILD TURKEY 2020 SPRING – LIMITED ENTRY – HUNTS 0131 &amp; 0132</b>			
PHYSICAL CHARACTERISTICS:	Bearded Wild Turkey		
LIMIT:	1 by tag only		
SHOOTING HOURS:	One half hour before sunrise to sunset daily		
<b>UNIT 101 of ELKO COUNTY*</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March – first Sunday in May	5	-
<b>UNITS 102 &amp; 065 of ELKO COUNTY*</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March – first Sunday in May	<del>12</del> 10	1
<b>UNITS 151 and 152 of LANDER COUNTY*</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March – first Sunday in May	3	-
<b>UNIT 154 of LANDER COUNTY</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	<i>Last Saturday in March – first Sunday in May</i>	<b>3</b>	-
<b>LINCOLN COUNTY</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March – first Sunday in May	<del>8</del> 12	-
<b>MASON VALLEY WILDLIFE MANAGEMENT AREA ONLY OF UNIT 203</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March through first Sunday in April	<del>6</del> 5	-
	Second Saturday in April through third Sunday in April	<del>6</del> 5	1
	Fourth Saturday in April through first Sunday in May	<del>6</del> 5	-
<i>*Applicants are advised that a significant portion of the turkey population occurs on private lands and permission should be obtained from a landowner before applying for this hunt.</i>			

<b>WILD TURKEY 2019 &amp; 2020 SPRING – LIMITED ENTRY – HUNTS 0131 &amp; 0132</b>			
PHYSICAL CHARACTERISTICS:	Bearded Wild Turkey		
LIMIT:	1 by tag only		
SHOOTING HOURS:	One half hour before sunrise to sunset daily		
<b>MOAPA VALLEY PORTION OF CLARK COUNTY*</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	March 23 – March 29, 2019	3	-
	March 30 – April 5, 2019	3	1
	April 6 – April 12, 2019	3	-
	March 21 – March 27, 2020	3	-
	March 28 – April 3, 2020	3	-
	April 4 – April 10, 2020	3	1
<b>PERSHING COUNTY*</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March through second Sunday in April	<del>12</del> 10	1
	Third Saturday in April through first Sunday in May	<del>12</del> 10	1
<b>UNIT 115 OF WHITE PINE COUNTY**</b>			
	Seasons	Tag Quota	
		Resident Hunt 0131	Nonresident Hunt 0132
Hunt Periods:	Last Saturday in March through second Sunday in April	15	2
	Third Saturday in April through first Sunday in May	15	2
<p><i>*Applicants are advised that a significant portion of the turkey population occurs on private lands and permission should be obtained from a landowner before applying for this hunt.</i></p> <p><i>**Applicants are advised that a significant portion of the turkey population occurs on Great Basin National Park lands. Hunting is not permitted within park boundaries.</i></p>			



## Churchill County Agenda Report

**Date Submitted:** June 11, 2019

**Agenda Item #:** Appointments -  
**Meeting Date Requested:** June 19,  
2019

**To:** Advisory Board to Manage Wildlife

**From:**

**Subject Title:** Consideration and possible action re: Biennial Upland Game Release Plan for Fiscal Years 2020 and 2021..

**Type of Action Requested:** Accept

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** motion to support the Biennial Upland Game Release Plan for Fiscal Years 2020 and 2021.

**Discussion:** The Nevada Board of Wildlife Commissioners will review and may take action to approve the proposed Biennial Upland Game Release Plan for Fiscal Years 2020 and 2021.

**Alternatives:** Not approve the recommendation and make other suggestions.

**Fiscal Impact:** N/A

**Explanation of Impact:** N/A

**Funding Source:** N/A

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

Date: June 12, 2019

\_\_\_\_\_  
Peggy A. Hughes, Member

Date: June 12, 2019

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



# Churchill County Agenda Report

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None

Aye: 0

2) None

Nay: 0

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



DEPARTMENT OF WILDLIFE  
Game Division

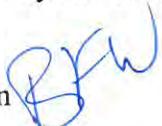
6980 Sierra Center Parkway, Ste 120 • Reno, Nevada 89511  
(775) 688-1500 Fax (775) 688-1987

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MEMORANDUM

May 28, 2019

**To:** Nevada Board of Wildlife Commissioners, County Advisory Boards to Manage Wildlife, and Interested Publics

**From:** Brian Wakeling, Administrator, Game Division 

**Title:** **Biennial Upland Game Release Plan for Fiscal Years 2020 and 2021 – For Possible Action**

**Description:** The Commission will review and may take action to approve the Department's proposed biennial upland game release plan for fiscal years 2020 and 2021.

**Presenter:** Wildlife Staff Specialist Shawn Espinosa

---

Summary:

The Department has prepared the Upland Game Biennial Release Plan for Fiscal Years 2020 and 2021 for review and approval by the Nevada Board of Wildlife Commissioners. This plan summarizes releases conducted during the past biennium (FY2018 and 2019) and identifies release areas for 2020 and 2021.

This release plan contains recommendations for each of the following:

*California quail*

Statewide

- For release of sub-urban California quail into suitable habitats in northern Nevada. For augmentation or introduction purposes within range of the species.

*Mountain quail*

Lincoln County

- Two release sites in the Clover Mountains to establish a population in this region of the State;

White Pine County

- Hendry's Creek in the Snake Range. This is an augmentation to the 2018 release.

*Rio Grande Turkey*

Lincoln County

- Two separate release sites. One in the Delamar Mountains and one in the Wilson Creek Range.

Lyon County

- Mason Valley Wildlife Management Area. In place to potentially receive turkeys from the Battle Mountain area along the Humboldt River.

*Merriam's Turkey*

White Pine County

- Negro Creek or Hendry's Creek in the Snake Range.

Elko County

- South Ruby Mountains (XJ Ranch).

*Ruffed Grouse*

Humboldt County

- Boyd Basin in the Pine Forest Range to augment the existing population. Depends on source stock availability in the Santa Rosa Range.

Elko County

- Bull Run Mountains and the South Tuscarora Range. Release would augment existing populations, especially within the Bull Run Mountains where ruffed grouse habitats were significantly impacted by the South Sugarloaf fire. Depends on source stock availability within Bruneau River drainage or Santa Rosa Range.

*American Beaver*

Statewide

- For release of American Beaver into suitable waters for restoration purposes.

Recommendation:

The Department recommends that the Commission **VOTE TO APPROVE THE BIENNIAL UPLAND GAME RELEASE PLAN FOR FISCAL YEARS 2020 AND 2021 AS PRESENTED.**

# **Nevada Department of Wildlife**

## **Small Game Release Plan**

**For**

**State Fiscal Years 2020 & 2021**



*Mountain quail seeking cover in Hendry's Creek – photo by Heath Korell (NDOW)*

**June 2019**

# STATE OF NEVADA

Steve Sisolak, Governor

## DEPARTMENT OF WILDLIFE

Tony Wasley, Director

### GAME DIVISION

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#### Staff

Shawn Espinosa, Upland Game Staff Specialist

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#### Southern Region

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Pat Cummings  
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Clint Garrett  
Sara Hale  
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Matt Jeffress  
Kody Menghini  
Tyler Nall  
Scott Roberts

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US Fish and Wildlife Service  
Division of Federal Assistance  
4401 North Fairfax Drive, Mailstop: MBSP-4020  
Arlington, VA 22203

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

Individuals with hearing impairments may contact the Department via telecommunications device at our Headquarters at 775-688-1500, or teletype to following State Relay number at 1-800-326-6868.

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# Nevada Department of Wildlife

## Small Game Release Plan Summary

For

Fiscal Years 2020 and 2021

<b>SUMMARY OF PROPOSED PROJECTS</b>		
<b>Species</b>	<b># Proposed Introductions</b>	<b># Proposed Augmentations</b>
California quail	TBD	TBD
Mountain Quail	2	1
Rio Grande Turkey	-	3
Merriam's Turkey	1	1
Chukar Partridge	TBD	TBD
Ruffed Grouse	-	2
American Beaver	-	TBD
<b>Total:</b>	<b>3</b>	<b>7</b>

# NEVADA DEPARTMENT OF WILDLIFE

## Small Game Release Plan

### Fiscal Years 2020 & 2021

The Nevada Department of Wildlife (NDOW) prepares an Upland Game Release Plan every two years (biennium) that serves several purposes. First and foremost, the plan prioritizes release sites for select species and allows the Department to focus its efforts on those priorities. Second, the plan provides an avenue for the County Advisory Boards to Manage Wildlife and the Nevada Board of Wildlife Commissioners to provide input and thoughts for consideration. Lastly, the plan also provides transparency and acts as a mechanism for information dissemination regarding the upland game translocation program.

NDOW is pleased to present the following Upland Game Biennial Release Plan for fiscal years 2020 and 2021 (July 1, 2019 through June 30, 2021) for consideration and approval. In addition to approval by the CABMWs and NBWC, approval must also be obtained from the appropriate federal land management agency prior to being implemented, provided the release occurs on federally managed lands. Some releases occur on private lands in close coordination with landowners where habitat is deemed appropriate for a given species.

### SUMMARY OF ACCOMPLISHMENTS (FY2018 & 2019)

Translocation of certain upland game species remains an important component of annual work plans for NDOW's Game Division. A rich history of upland game releases have provided sportsmen and wildlife viewers with a diverse array of opportunities within Nevada, a state largely known as being the driest in the U.S.

The Nevada Upland Game Species Management Plan (2008) identifies goals and objectives for the Game Division to strive for while the Biennial Upland Game Release Plan provides a planned and coordinated approach to short-term future work. The release plan also summarizes work accomplished during the prior two fiscal years and provides a public outlet for those accomplishments. This following is a brief summary of releases accomplished during State Fiscal Years 2018 and 2019:

- **MOUNTAIN QUAIL (N=251 TOTAL)**
  - **FISH CREEK MOUNTAINS, LANDER CO. (N=146)**
  - **SNAKE RANGE, WHITE PINE CO. (N=105)**
- **RIO GRANDE TURKEY (N=82 TOTAL)**
  - **CLOVER MOUNTAINS, LINCOLN CO. (N=47);**
  - **WHITE ROCK MOUNTAINS, LINCOLN CO. (N=35);**
- **MERRIAM'S TURKEY (N=99 TOTAL)**
  - **TOIYABE RANGE, LANDER CO. (N=17 IN SFY18; N=82 IN SFY19)**

## EASTERN REGION

### Mountain Quail

#### *Fish Creek Mountains – Lander County*

During the winter of 2017-2018, additional releases of mountain quail were made into the Fish Creek Mountains south of Battle Mountain, Nevada. One hundred mountain quail were obtained from the Myrtle Creek, Oregon area in November of 2017 and subsequently transported to and held at the Mason Valley Wildlife Management Area for approximately three months. In the meantime, an additional 55 birds were also obtained from Oregon and quickly released into Jersey Canyon in the Fish Creek Mountains on January 12, 2018. Due to the persistent lack of snow during the remainder of January, the remaining birds from Mason Valley were liberated on February 6, 2018. This release consisted of 91 birds.

These releases followed a release of 88 birds into Jersey Canyon during mid-March of 2017. In total, 234 mountain quail were released in the Fish Creek Mountains over a two-year period. Follow-up monitoring will consist of quail call routes during May and June of each year to determine the efficacy of these releases.

#### *Snake Range – White Pine County*

The Snake Range in White Pine County, especially the eastern portion of the range, offers some potentially unique opportunities for mountain quail in Nevada in that the area transitions into a desert environment where snow accumulations are minimal to moderate with shorter durations than other interior and northern Nevada mountain ranges. Hendry's Creek offers quality habitat in the form of various cover types (figure 1) and sustainable perennial water from the lower to upper reaches of the watershed.

In November of 2018, 105 mountain quail were released into the Hendry's Creek watershed. This release will be followed up with an additional release in 2019 or 2020 depending on availability from Oregon. Monitoring will consist of mountain quail call routes along the drainage during May and June of each year for 3-5 years following the release to determine the efficacy of the release.

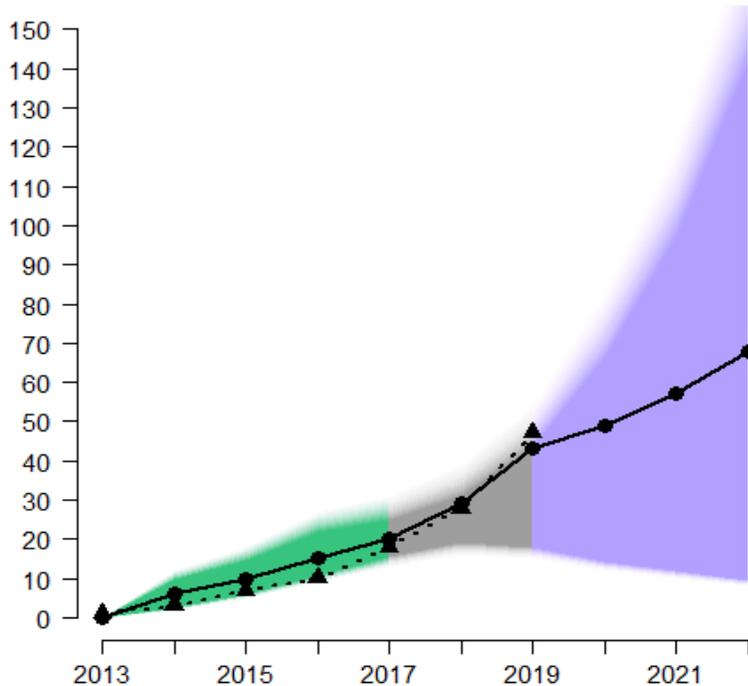


**Figure 1. Hendry's Creek release site in the northern Snake Range in White Pine County.**

### **Columbian Sharp-tailed Grouse - Update**

During the summer of 2018, the South Sugarloaf Fire consumed approximately 220,000 acres of quality habitat in the Bull Run Mountains. Unfortunately, much of this habitat was also home to a recently (2013-2017) translocated population of Columbian sharp-tailed grouse (CSTG). The fire was thought to have consumed as much as 50-60% of the birds habitat and there were significant concerns that seasonal habitat (deciduous shrubs and trees) would be severely limited for birds to sustain themselves during the winter months of 2018-2019.

Prior to the South Sugarloaf fire, preliminary analysis conducted by the USGS – Western Ecological Research Center, using integrated population modeling incorporating flush counts of CSTG males and demographic data, suggested the potential for stable population trends to 2021 (figure 2). Recent monitoring of the three known leks near the release site indicated as many as 34 males associated with these leks. Additionally, a fourth, previously unknown lek was discovered in late April of 2019 with 15 males in attendance. The fact that 49 males persevered through the winter and have distributed themselves more broadly is encouraging. This information, coupled with the early successional recovery of the habitat in native perennial grassland with little cheatgrass, also provides for a hopeful outlook. Sharp-tailed grouse should do well in the coming years at this site.



**Figure 2. Expected number (solid line) and observed flush count (dashed line) of male CSTG at the Bull Run release site. Green shading represents years in which demographic data were collected, gray shading represents years where no demographic data were collected and blue shading represents future estimates. These are preliminary data and not for distribution.**

## Merriam's Turkey

Merriam's turkey population establishment efforts in the northern Toiyabe Range continued during State Fiscal Year 2018. Eighty-two Merriam's turkeys were released on four separate occasions during January and early February of 2018. The releases consisted of 30 adults hens, 21 juvenile hens (yearlings) and 31 jakes. These releases constituted the second year of releases into the northern Toiyabe Range into the drainages on the west side of Mount Callaghan. During the winter of 2017, 17 birds were released into this area. Birds were captured by the Colville Confederated Tribe on their lands in eastern Washington.

In order to monitor the success of the release and the distribution of the birds post-translocations, 12 hens were radio-marked with VHF necklaces. Funding for these transmitters was provided by the Carson Valley Chukar Club. Five follow-up flights using fixed wing aircraft provided locations of birds through the remainder of 2018 and a portion of 2019 (figure 3). To date, four birds remain active, four are confirmed dead, one is missing and three are questionable (transmitter battery life may be extinguished). However, the information obtained to date has indicated distribution of birds on both sides of the range just north of Mount Callaghan. The core of the population seems to be established within the Boone Creek/Bernd Canyon area on the west side of the range. At this time, this population appears to be self-sustaining and a spring hunt with low quotas may be recommended as early as 2020.

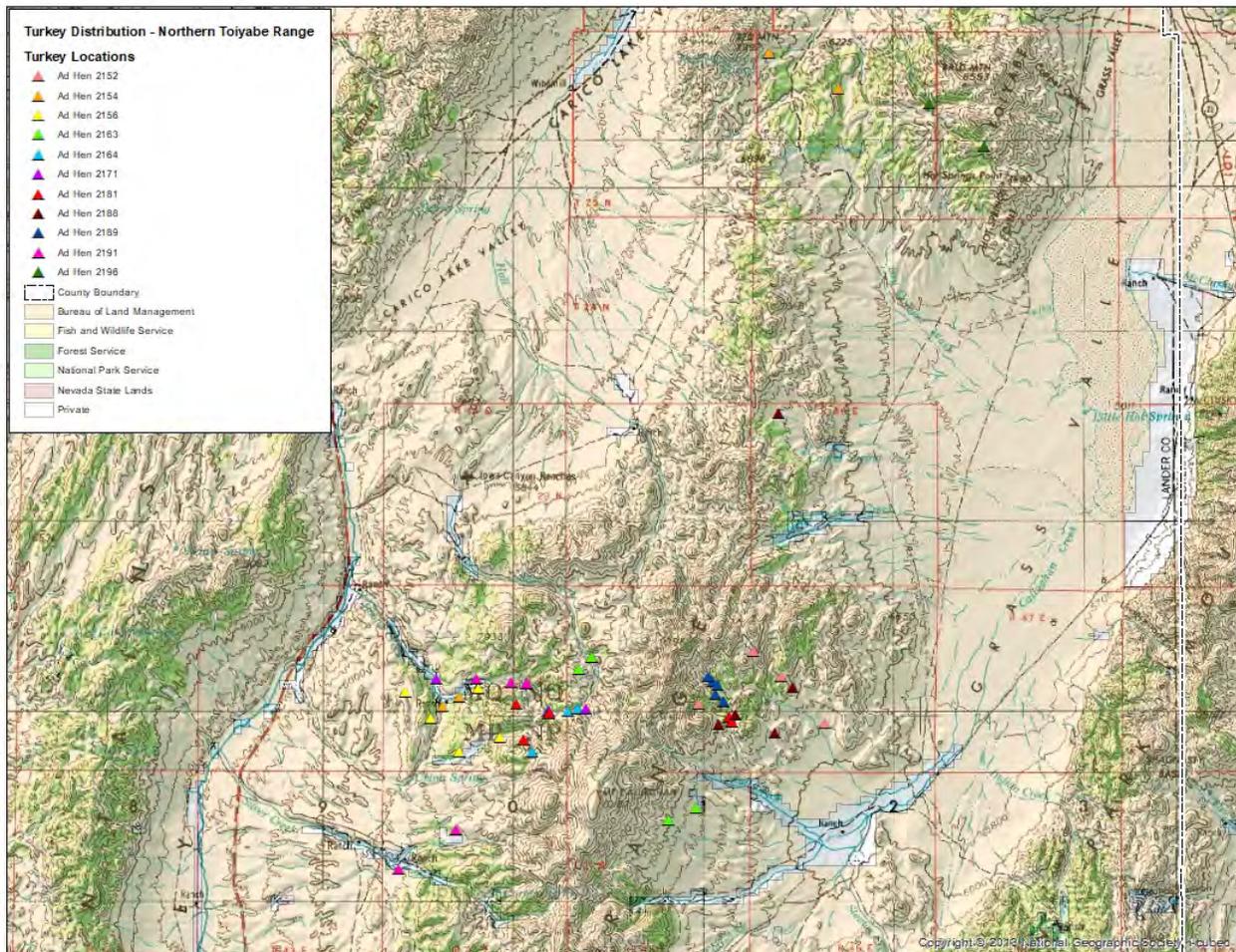


Figure 3. Distribution of radio-marked turkeys in the northern Toiyabe Range (2018- early 2019)

## SOUTHERN REGION

### Rio Grande Turkey

In a continuing effort to establish self-sustaining populations of turkeys in Lincoln County, NDOW has continued to work with the Utah Division of Wildlife Resources to translocate birds from southern Utah. During January of 2018, 47 turkeys consisting of 27 toms and jakes and 20 females were released into the Doc's Pass area of the Clover Mountains. This site is characterized by an older wildfire that has regenerated with plentiful perennial grasses, forbs and scrub oak, while the surrounding areas have mature Ponderosa pines, pinyon pines, Gambel's oak and deciduous shrubs.



In addition to this release in January of 2018, another 35 birds consisting of 18 toms and jakes and 27 hens were released into the Deer Lodge area of the White Rock mountains. This release was considered an augmentation of the existing population in this area and will allow for future recreational opportunity for wildlife watchers and hunters alike.

Since spring hunts were re-established in Lincoln County in 2017 after a respite since 2012, hunt success has been rather encouraging. The table below shows the number of tags allocated and bird maturity since 2017.

Year	Quota	Return Cards	Did Not Hunt	Number Successful	Tom	Jake
2017	7	6	1	5	5	-
2018	7	6	1	4	3	1
2019	10	3		3	3	
Totals:	24	15	2	12	11	1

## 2018 & 2019 NEVADA UPLAND GAME RELEASE PLAN

### SUMMARY OF ACCOMPLISHMENTS

Species	FY	Location	Co.	Type	# Released
<b>Mountain Quail</b>	18	Fish Creek Mountains (Hunt Unit 153)	LA	A	146
	19	Snake Range (Hunt Unit 114)	WP	I	105
	<b>TOTAL:</b>				<b>251</b>
<b>Merriam's Turkey</b>	18	Toiyabe Range (Hunt Unit 154)	LA	I	82
	19	No releases conducted	LA	-	-
	<b>TOTAL:</b>				<b>82</b>
<b>Rio Grande Turkey</b>	18	Clover Mountains (Hunt Unit 242)	LN	A	47
	18	White Rock Mountains (Hunt Unit 231)	LA	A	35
	19	No releases conducted	-	-	-
	<b>TOTAL:</b>				<b>82</b>

Proposed Releases  
**California Quail**

Location	Type
Western Region	A
Eastern Region	A & I
Southern Region	A

*Release sites are not specified – releases depend upon availability of depredating quail trapped from urban areas along Carson Front.*



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/15/19

Region: HQ

Name: Shawn Espinosa

Office: HQ

**Species or Subspecies:** California Quail

Introduction:  or Augmentation:

**Fiscal Year of Planned Release:** 2020 & 2021

**Release Site Site Name:** All Regions

**County:** Churchill

**Legal Description:** not specific

**Transplant Stock:** Depredating quail will be trapped from the Carson Range front including suburban areas around Carson City, Gardnerville and Reno/Sparks.

**Cooperating Land Management Agencies:** BLM

**Land Management Agency Approval Document:** CATEX

### **Other Documents and their Status:**

Nevada Upland Game Species Management Plan (2008). Western Quail Management Plan (Zornes and Bishop 2009).

### **Notification of User Groups (include methods and dates):**

Cooperators will be notified prior to each release and will be provided with a post-release narrative.

### **Habitat Evaluation:**

Releases will augment existing populations occupying suitable habitat (augmentation) or will take place in unoccupied suitable habitat (introduction).

### **Predator Evaluation:**

No predator control is recommended.

### **Comments:**

California quail releases are occasionally used to address short-term declines attributed to unfavorable habitat conditions which may be due to events like extreme drought to winters with elevated snowpack and cold temperatures.

Proposed Releases  
**Mountain Quail**

Location	Co.	Type
<b>Introductions – priority for first available donor stock</b>		
Cottonwood Canyon – Clover Mountains**	LN	I
Rainbow Canyon – Clover Mountains**	LN	I
<b>Augmentations – priority after introductions</b>		
Snake Range – Hendry’s Creek	LA	A



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/17/19

Region: SR

Name: Cooper Munson

Office: Panaca

Species or Subspecies: Mountain Quail

Introduction:  or Augmentation:

Fiscal Year of Planned Release: FY 2020 and/or 2021

Release Site

Site Name: Cottonwood Canyon

County: Lincoln

Legal Description:

Transplant Stock: Eastern California or west-central Nevada

Cooperating Land Management Agencies: BLM

Land Management Agency Approval Document: CATEX

Other Documents and their Status:

Nevada Upland Game Species Management Plan

Notification of User Groups (include methods and dates):

Will notify user groups when a suitable and reliable source stock is obtained, then again prior to release.

Habitat Evaluation:

Suitable habitat throughout the county. This area would provided ample cover, forage, water, and selective terrain.

Predator Evaluation:

Predators in fairly natural state with some areas reduced predator concentrations due to surrounding agricultural areas. Local predators include, fox, coyote, bobcat, mt. lion, and avian predators.

Comments:

Source stock unknown at this time. Options include western Nevada and southeastern CA.



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/17/19

Region: SR

Name: Cooper Munson

Office: Panaca

Species or Subspecies: Mountain Quail

Introduction:  or Augmentation:

Fiscal Year of Planned Release: FY2020 and 2021

Release Site

Site Name: Rainbow Canyon

County: Lincoln

Legal Description:

Transplant Stock: Eastern California or west-central Nevada

Cooperating Land Management Agencies: BLM

Land Management Agency Approval Document: Unnecessary (Private)

Other Documents and their Status:

No other documents in cue for this proposal.

Notification of User Groups (include methods and dates):

Notification will be made via email to all user groups and other interested parties.

Habitat Evaluation:

Suitable habitat throughout the county. This area would provided plenty of cover, forage, water, and selective terrain.

Predator Evaluation:

Predators in fairly natural state with some areas reduced predator concentrations due to surrounding agricultural areas. Local predators include, fox, coyote, bobcat, mt. lion, and avian predators.

Comments:

Source stock not known at this time. China lake has been suggested but uncertain if birds will be available. Avian predation may be higher in this area.



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/17/19

Region: ER

Name: Kody Menghini

Office: Ely

Species or Subspecies: Mountain Quail

Introduction:  or Augmentation:

Fiscal Year of Planned Release: FY20

Release Site Site Name: Mount Moriah

County: White Pine

Legal Description: T18S R68E, Sec. 16, T19S R69E Sec. 15, or T18S R70E, Sec. 35

Transplant Stock: Unknown

Cooperating Land Management Agencies: USFS

Land Management Agency Approval Document:

Other Documents and their Status:

The USFS has not been contacted about this potential project. It would likely be a CATEX. There may be potential to release mountain quail on private property as well.

Notification of User Groups (include methods and dates):

None at this time.

Habitat Evaluation:

There are several large drainages on Mount Moriah, including Hendry's Creek, Silver Creek, and Negro Creek, that have long and diverse riparian corridors for seasonal migration and habitat. A diverse upland shrub community is present throughout the area. Most areas have intermixed conifers and pinion-juniper woodlands. High elevation aspen stands intermixed with mountain shrub communities are available for summer habitat. Adequate dense cover and steep, rocky topography is available for security. The climate of in this area tends to be mild in the winter and does not hold heavy snow levels for long periods of times. All of the drainages have steep south facing slopes that usually loose snow cover during winter that would be beneficial to mountain quail.

Predator Evaluation:

Predators are present, but no predator removal project is recommended at this time.

Comments:

## Proposed Releases

# Rio Grande Turkey

Location	Co.	Type
<b>Introductions – priority for first available donor stock</b>		
No introduction of Rio Grande turkey are scheduled for FY18 & 19		
<b>Augmentations – priority after introductions</b>		
Delamar Mountains (Lincoln County)	LN	A
Wilson Creek Range (Lincoln County)	LN	A
Mason Valley Wildlife Management Area of Lyon County	LY	A



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/28/19

Region: SR

Name: Cooper Munson

Office: Panaca

**Species or Subspecies:** Wild Turkey

Introduction:  or Augmentation:

**Fiscal Year of Planned Release:** FY 2020 and/or 2021

**Release Site**      **Site Name:** Delamar Mountains  
**County:** Lincoln  
**Legal Description:**  
**Transplant Stock:** New Harmony, UT Utah DWR

**Cooperating Land Management Agencies:** BLM

**Land Management Agency Approval Document:** Unnecessary (Private)

**Other Documents and their Status:**

**Notification of User Groups (include methods and dates):**

User groups will be notified via email one week prior to the scheduled capture. The Lincoln County Advisory Board to Manage Wildlife will be notified for volunteer assistance.

**Habitat Evaluation:**

Suitable habitat throughout the county. This area would provided plenty of cover, forage, water and selective terrain.

**Predator Evaluation:**

Predators in fairly natural state with some areas reduced predator concentrations due to surrounding agricultural areas and local fur trappers. Local predators include, fox, coyote, bobcat, mt. lion, and avian predators.

**Comments:**

Birds would likely come from southern Utah where NDOW has received birds for augmentations in the past.



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/28/19

Region: SR

Name: Cooper Munson

Office: Panaca

Species or Subspecies: Wild Turkey

Introduction:  or Augmentation:

Fiscal Year of Planned Release: FY 2020 and/or 2021

Release Site      **Site Name:** Wilson Creek Watershed  
**County:** Lincoln  
**Legal Description:**  
**Transplant Stock:** New Harmony, UT Utah DWR

Cooperating Land Management Agencies: BLM

Land Management Agency Approval Document: CATEx

**Other Documents and their Status:**

No other documents in cue for this release proposal.

**Notification of User Groups (include methods and dates):**

User groups will be notified via email one week prior to the capture date when scheduled. Release generally occurs the same day or the following.

**Habitat Evaluation:**

Suitable habitat throughout the county. This area would provided plenty of cover, forage, water and selective terrain.

**Predator Evaluation:**

Predators in fairly natural state with some areas reduced predator concentrations due to surrounding agricultural areas. Local predators include, fox, coyote, bobcat, mt. lion, and avian predators.

**Comments:**

Birds would come from southern Utah. NDOW has received birds for augmentations in the past.



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/28/19

Region: WR

Name: Jason Salisbury

Office: Fallon

Species or Subspecies: Wild Turkey

Introduction:  or Augmentation:

Fiscal Year of Planned Release: 2020 and/or 2021

**Release Site**      **Site Name:** Mason Valley Wildlife Management Area  
**County:** Lyon  
**Legal Description:** State owned WMA  
**Transplant Stock:** Liking Ranch near Battle Mountain, NV or other

**Cooperating Land Management Agencies:** Private Landowner

**Land Management Agency Approval Document:** Unnecessary (Private)

**Other Documents and their Status:**

Nevada Department of Wildlife's Wild Turkey Species Management Plan

**Notification of User Groups (include methods and dates):**

**Habitat Evaluation:**

Rio Grande turkeys have persisted on the Mason Valley Wildlife Management Area (WMA) since 1987. Habitat conditions on the WMA provide suitable cover, forage (especially from ample buffalo berry shrubs) and ample roosting habitat in the form of Fremont cottonwoods.

**Predator Evaluation:**

Some predator control may be necessary as the WMA acts as a sink for many meso-carnivores within Mason Valley including skunks, raccoons, coyotes and bobcats.

**Comments:**

Proposed Releases  
**Merriam's Turkey**

Location	Co.	Type
<b>Introductions – priority for first available donor stock</b>		
Snake Range – Mount Moriah (Hunt Unit 114)	WP	I
<b>Augmentations – priority after introductions</b>		
XJ Ranch – Ruby Mountains (Hunt Unit 103)	WP	A



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/17/19

Region: ER

Name: Kody Menghini

Office: Ely

Species or Subspecies: Wild Turkey

Introduction:  or Augmentation:

Fiscal Year of Planned Release: FY20 and FY20

Release Site Site Name: Mount Moriah

County: White Pine

Legal Description: T18S R68E, Sec. 16, T19S R69E Sec. 15, or T18S R70E Sec. 35

Transplant Stock: Colville Confederated Tribe or Utah Division of Wildlife Resources

Cooperating Land Management Agencies: USFS

Land Management Agency Approval Document: CATEX

### Other Documents and their Status:

A letter of approval needs to be obtained from U.S. Forest Service. There is also possibility to release turkeys on private property, but permission still needs to be obtained from the landowner.

### Notification of User Groups (include methods and dates):

Local residents would be informed and possibly used as volunteers to trap, transport, and/or release turkeys.

### Habitat Evaluation:

Habitat in the Snake Mountain Range is suitable for Merriam's wild turkeys, as is evident by the robust Merriam's turkey population in the south Snake Mountain Range. Upland habitat ranges from lower elevation pinyon juniper woodlands to high elevation fir, pine, and aspen stands, with plentiful forage from pine nuts, juniper berries, berries from various mountain shrubs species, native grasses, forbs, and insects. Numerous and expansive riparian areas offer a diversity of berries, forbs, and grasses, along with a diversity of insects available for forage. Dense riparian vegetation allows for adequate cover and escapement from predators. Numerous cottonwood trees and Ponderosa Pines are available for roosting trees.

### Predator Evaluation:

No predator control efforts are recommended at this time.

### Comments:

There is local support to increase turkey populations and hunting opportunities. This release would have minimal if any impact or competition on native fauna.



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/17/19

Region: ER

Name: Scott Roberts

Office: Elko

Species or Subspecies: Wild Turkey

Introduction:  or Augmentation:

Fiscal Year of Planned Release: 2020 or 2021

Release Site      Site Name: XJ Ranch  
County: White Pine  
Legal Description: T25N., R55E., Section 1  
Transplant Stock: Washington State or Colville Tribe

Cooperating Land Management Agencies: Private Landowner

Land Management Agency Approval Document:

Other Documents and their Status:

Notification of User Groups (include methods and dates):

The local chapters of the NWTF will be notified. Potential news outlets will include the local radio stations, the local NBC affiliate, and the Department's website.

Habitat Evaluation:

The release area is located within a drainage with a riparian corridor comprised of willows and rose, abundant roosting trees (mostly pinyon trees), and ample escape cover for turkeys.

Predator Evaluation:

Wildlife Services routinely controls predators on the flats west of the Ruby Mountains due to an active domestic sheep trailing route. The area surrounding the release site is also popular with sport hunters and trappers. No additional predator control is advised at this time.

Comments:

The recent implementation of the Overland Pass Habitat Enhancement Project has treated over 10,000 acres of Pinyon/Juniper forest in the area surrounding the release site. This project will ensure that there will be a mosaic of feeding, roosting, and nesting habitat available for the transplanted turkeys to expand into.

Proposed Releases

# Chukar Partridge

Location	Co.	Type
Southern Region	NY, ES, CL, LN	A



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/15/19

Region: HQ

Name: Shawn Espinosa

Office: HQ

**Species or Subspecies:** Chukar Partridge

Introduction:  or Augmentation:

**Fiscal Year of Planned Release:** 2020 & 2021

**Release Site**

**Site Name:** Southern Region

**County:** Clark

**Legal Description:** not specific

**Transplant Stock:** Chukar may be trapped from in or out of state sources and transplanted in Nevada for augmentation purposes.

**Cooperating Land Management Agencies:** BLM

**Land Management Agency Approval Document:** CATEX

**Other Documents and their Status:**

Nevada Upland Game Species Management Plan (2008); WAFWA Partridge Management Plan (in Draft)

**Notification of User Groups (include methods and dates):**

Cooperators will be notified prior to each release and will be provided with a post-release narrative.

**Habitat Evaluation:**

Releases will augment existing populations occupying suitable habitat.

**Predator Evaluation:**

No predator control is recommended.

**Comments:**

Chukar releases are occasionally used to address short-term declines attributed to prevailing habitat conditions which may be negatively effecting populations (e.g. extreme drought).

## Proposed Releases

# Ruffed Grouse

Location	Co.	Type
<b>Introductions – Priority for first available donor stock</b>		
No introductions of ruffed grouse are scheduled for Fiscal Year's 18 & 19		
<b>Augmentations – priority after introductions</b>		
Bull Run and South Tuscarora Range (Elko County)	EL	A
Pine Forest Range – Boyd Basin (Humboldt County)	HU	A



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/18/19

Region: WR

Name: Ed Partee

Office: Winnemucca

Species or Subspecies: Ruffed Grouse

Introduction:  or Augmentation:

Fiscal Year of Planned Release: 2020 and 2021

Release Site      **Site Name:** Pine Forest Range, Boyd Basin  
**County:** Humboldt  
**Legal Description:** T45N R30E Section 31  
**Transplant Stock:** Oregon, Idaho, or other in-state opportunities

Cooperating Land Management Agencies: Private Landowner

Land Management Agency Approval Document: Unnecessary (Private)

### Other Documents and their Status:

Augmentation will take place near original releases on private ground

### Notification of User Groups (include methods and dates):

Private landowner, Humboldt County Wildlife Advisory Board and other interested parties

### Habitat Evaluation:

There is approximately 10,000 acres of aspen habitat in this range. Forage and drumming areas are available within most of these aspen and fir stands. Elderberry, snowberry, chokecherry and serviceberry is available as well as limited amounts of wild rose near riparian areas. All forage species are in excellent shape in the area. Aspen stands are multi-age classed with plenty of herbaceous understory for cover.

### Predator Evaluation:

Other upland game bird populations have increased in recent years in this area and are following normal cycles suggesting that there are no abnormal numbers of predators or a need for predator control in the area at this time.

### Comments:

This release is expected to expand hunting opportunity and to firmly establish a population of ruffed grouse in the Pine Forest. Follow-up surveys will be conducted to assess the success of ruffed grouse in expected brooding areas.



# Small Game Release Site Planning and Approval Summary

4-2017

Date: 5/28/19

Region: ER

Name: Mathew Jeffress

Office: Elko

Species or Subspecies: Ruffed Grouse

Introduction:  or Augmentation:

Fiscal Year of Planned Release: FY2020 and/or 2021

Release Site      **Site Name:** Bull Run Mountains and South Tuscarora Range  
**County:** Elko  
**Legal Description:**  
**Transplant Stock:** Santa Rosa Range or Bruneau River Drainage

Cooperating Land Management Agencies: USFS

Land Management Agency Approval Document: CATEX

**Other Documents and their Status:**

Nevada Upland Game Species Management Plan.

**Notification of User Groups (include methods and dates):**

Elko County Advisory Board to Manage Wildlife and Non-Governmental Organization such as Carson Valley Chukar Club and Nevada Chukar Foundation. A press release and facebook will be used to advertise the release. Private landowners where birds will be released.

**Habitat Evaluation:**

These releases will take advantage of early successional responses to the South Sugarloaf and other wildfires that have affected ruffed grouse habitat in these mountain ranges. Aspen responses should be favorable for ruffed grouse, especially within the Bull Run Mountains.

**Predator Evaluation:**

No additional control efforts are warranted at this time as predator communities have also been affected by the 223,000 acre South Sugarloaf Fire.

**Comments:**

Ruffed grouse populations have been negatively affected by several wildfires in northern Elko Co.

## Proposed Releases

# American Beaver

Location	Co.	Type
<b>Introductions – Priority for first available donor stock</b>		
No introductions of American Beaver are scheduled for FY2020 & 2021		
<b>Augmentations – priority after introductions</b>		
USFS or BLM managed lands as deemed appropriate	NV	A



# Small Game Release Site Planning and Approval Summary

Date:  Region:   
Name:  Office:   
Species or Subspecies:   
Introduction:  or Augmentation:  Fiscal Year of Planned Release:

Release Site Site Name:   
County:   
Legal Description:   
Transplant Stock:

**Cooperating Land Management Agencies:**

**Land Management Agency Approval Document:**

**Other Documents and their Status:**

**Notification of User Groups (include methods and dates):**

**Habitat Evaluation:**

**Predator Evaluation:**

**Comments:**



## Churchill County Agenda Report

**Date Submitted:** June 11, 2019

**Agenda Item #:** Informational  
Items - A

**Meeting Date Requested:** June 19,  
2019

**To:** Board of Churchill County Commissioners

**From:**

**Subject Title:** Consideration and possible action re: Presentation of Fallon Naval Air Station Community Plans.

**Type of Action Requested:** None; Informational Only

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** None; informational only.

**Discussion:** The Nevada Board of Wildlife Commissioners will hear a presentation from Rob Rule related to Fallon Naval Air Station Community Plans.

**Alternatives:** N/A

**Fiscal Impact:** N/A

**Explanation of Impact:** N/A

**Funding Source:** N/A

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

Date: June 12, 2019

\_\_\_\_\_  
Peggy A. Hughes, Member

Date: June 12, 2019

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



# Churchill County Agenda Report

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None Aye: 0  
2) None Nay: 0

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



# FALLON RANGE TRAINING COMPLEX MODERNIZATION

## NINETY DAYS TO COMBAT

### INTRODUCTION

The Fallon Range Training Complex is the Navy's premier aviation training range, supporting aviation and ground training, including live-fire training. The Navy trains 100 percent of deploying naval aviation and naval special warfare tactical ground mobility units at the Fallon Ranges. The training conducted here is critical for defending and securing the United States and its interests abroad.

To evaluate the Navy's ability to counter evolving current and future threats worldwide, the Naval Aviation Warfighting Development Center, naval aviation's warfare authority, initiated a study to evaluate the effectiveness of existing aviation training requirements and assess the need to reconfigure the Fallon Ranges.

This study, called the *Ninety Days to Combat Required Training Capabilities Study*, identified significant gaps in aviation weapons training. At the same time, the Naval Special Warfare Command (Navy SEALs) identified similar gaps and actions needed to support ground mobility training on the Fallon Ranges. The analysis showed that the current size of the Fallon Ranges severely restricts the extent to which the Navy can use its various weapons systems to train. As a result, aircrews and special operations forces are unable to train in sufficiently-realistic conditions, which compromises their safety and success in combat.

The purpose of this fact sheet is to explain the current gaps in the Navy's ability to train realistically at the Fallon Ranges, both in the air and on the ground, and how the Navy's proposed modernization would reduce those gaps. The Ninety Days to Combat study is available on the Fallon Modernization website at [www.FRTCMmodernization.com](http://www.FRTCMmodernization.com).



# NINETY DAYS TO COMBAT AT THE FALLON RANGE TRAINING COMPLEX

## LEARNING FROM THE PAST

To reduce the potential for the substantial loss of lives of U.S. service men and service women in combat, the Navy continuously analyzes what occurred during past conflicts and makes the changes necessary to improve future warfighting tactics. For example, in 1991, 27 aircraft were lost over a 40-day period during Desert Storm due to heavy anti-aircraft gunfire and missile threats.

Because of these heavy losses, the Navy adjusted its aircraft tactics to fight a “high war” by flying higher and releasing bombs from farther away. New weapons technologies, such as Joint Direct Attack Munitions, have helped improve survivability and resulted in combat success.



## CURRENT VERSUS HISTORIC TRAINING SPACE NEEDS

Current aircraft and weapons require a far greater amount of training space than previous aircraft and weapons required (Figure 1). Historically, older aircraft flew at lower altitudes (10,000 feet from the target), approached targets from close distances (4 to 5 miles away), and required a smaller impact area for weapons. Now, modern aircraft fly at higher altitudes (30,000 feet from the target), release weapons from 10 to 12 miles away, and require a larger impact area during training for weapons safety and containment. Over the years, however, the Fallon Ranges have remained relatively static, while naval aviation, aircraft capabilities, and weapons have significantly improved.

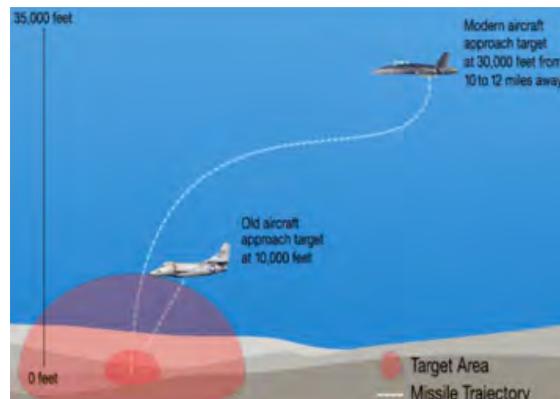


Figure 1. Current and historic training space needs.

## ADDRESSING CURRENT TRAINING CAPABILITY GAPS

Experts at the Naval Aviation Warfighting Development Center continuously evaluate the capabilities of adversaries and update warfighting doctrine in the form of Tactics, Techniques, and Procedures, which form the basis for the requirements Navy personnel must master prior to deployment.

The Navy evaluated the gaps in both air and ground training capabilities against the real-world physical constraints of expanding the Fallon Ranges to meet the full Tactics, Training, and Procedures. The evaluation allowed for the development of revised requirements, called “tactically acceptable parameters,” that could support suitable training while considering these constraints. Tactically acceptable parameters do not represent the full capability recommended in the Ninety Days to Combat study, but have been deemed acceptable by the Navy for training purposes.

Figure 2 depicts what the Bravo-17 bombing range would need to look like if training were to be conducted so as to allow for realistic training in accordance with the full implementation of Tactics, Techniques, and Procedures. In this scenario, the weapons danger zones (see box for definition) at Bravo-17 would extend significantly beyond the current controlled range property. To ensure public safety, the Navy therefore currently trains at less than maximum capabilities.

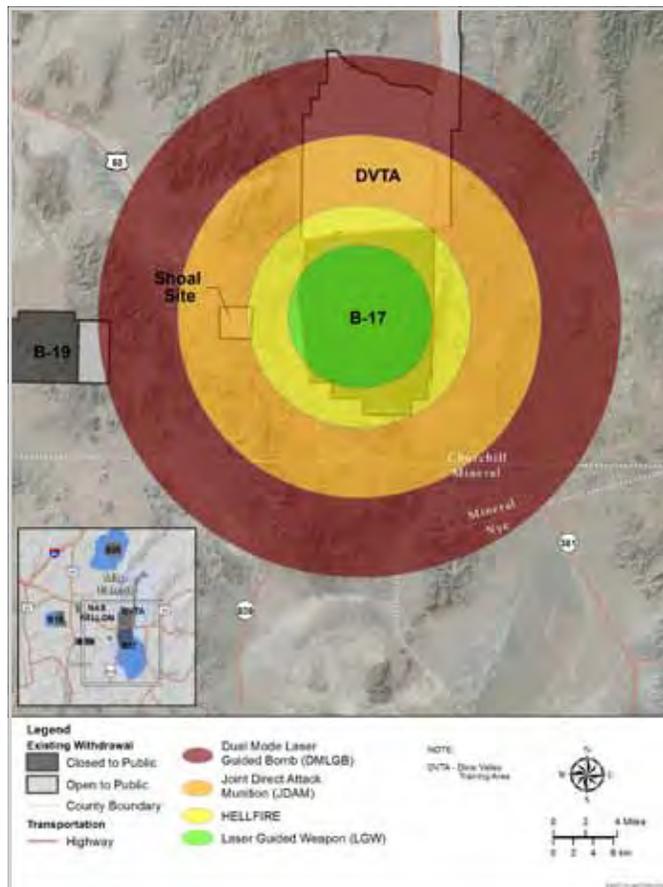


Figure 2. Current Bravo-17 bombing range and weapons danger zones reflecting full training capabilities.



**Newer-generation aircraft and weapons have outpaced the current capabilities of the Fallon Ranges. Training is hindered by inadequate land and airspace, leaving aircrews unable to train as they would fight in the real world.**

**SAFETY REQUIREMENTS**

Weapons danger zones and surface danger zones represent the minimum safety requirements for aviation and ground weapons training to protect public health and safety. The sizes of the respective danger zones reflect how much land is needed to ensure safety. The public is not authorized to be within danger zones due to potentially hazardous ordnance activities.

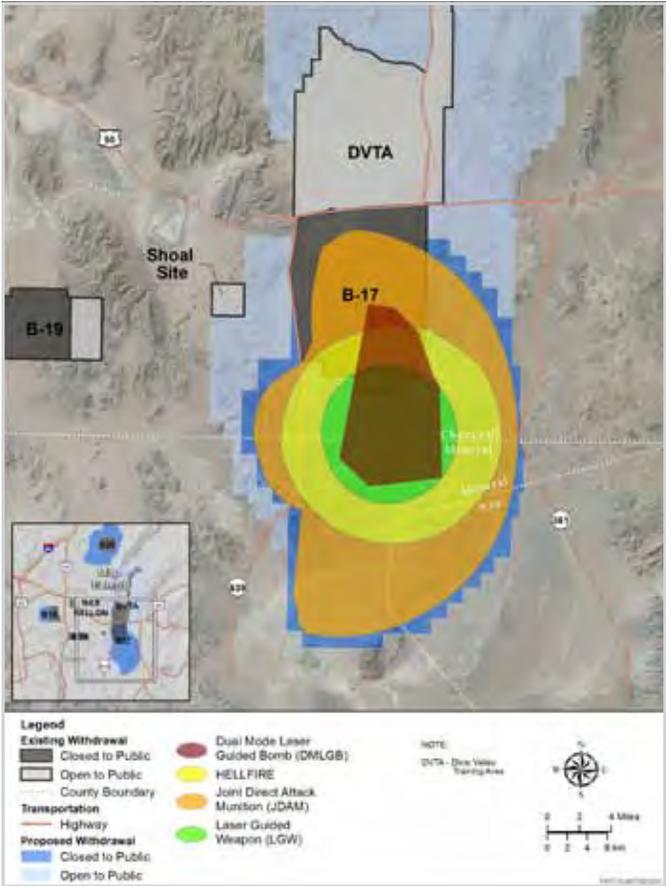
While the Navy continues to train at the Fallon Ranges, the current configuration of the ranges forces the Navy to limit training in the air and on the ground to scenarios that only partially resemble what personnel would experience in actual

combat, to include the extent to which the Navy can replicate enemy capabilities. This self-limitation is necessary largely in order to protect the public from inherent dangers in the Navy's combat training.

To address these training deficiencies, the Navy has proposed to modernize the Fallon Ranges to meet tactically acceptable parameters, including at Bravo-17 (Figure 3), by expanding land areas and airspace to provide the more-realistic training capabilities needed while maintaining the safety of local communities.

A *weapons danger zone* is a three-dimensional area that encompasses the ground and airspace for the horizontal and vertical containment of projectiles, fragments, or debris resulting from aviation-delivered ordnance. A zone is calculated for each weapon type as delivered by a specific aircraft type to account for accuracy and potential weapon failures.

A *surface danger zone* is similar to a weapons danger zone, but relates to ordnance used during ground training, rather than aviation training, such as firing weapons or demolition activities.



**Figure 3.** Proposed modernized Bravo-17 bombing range with modified weapons danger zones.



## PROPOSED MODERNIZATION OF THE FALLON RANGES



### Addressing Current Training Capability Gaps (continued)

Similarly, the current tactical ground mobility training area on Bravo-16 used by Navy SEALs does not have sufficient space to accommodate the firing directions and ranges needed for advanced live-fire and integrated training activities (Figure 4). The training area allows for up to a 60-degree field of fire, instead of a 360-degree field of fire to simulate the real-world probability that enemy gunfire could come from any direction.

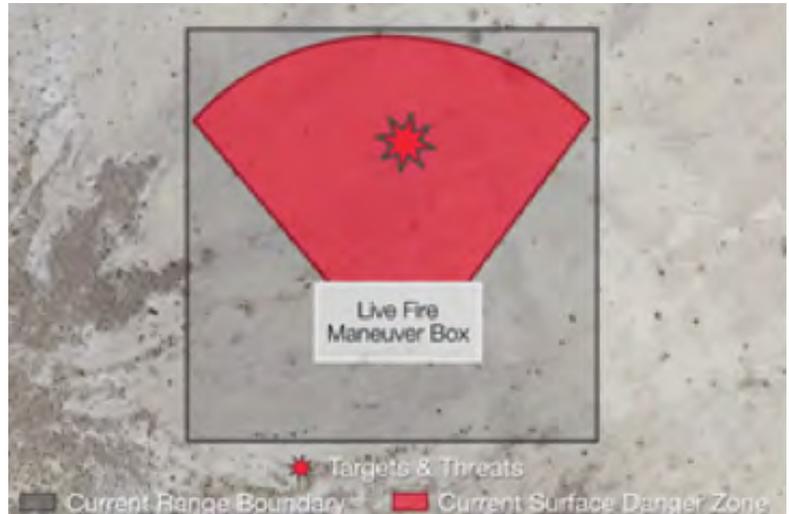
As part of the modernization of the Fallon Ranges, the Navy has proposed actions that would support ground mobility training requirements that approach full Tactics, Training, and Procedures and allow for realistic and effective 360-degree training (Figure 5).

The Navy has proposed to modernize the Fallon Ranges to address the gaps between current training capabilities and current and future training requirements. Modernization of the ranges would provide the land and airspace necessary to train to tactically acceptable parameters in accordance with the Navy's mission. Range modernization would include the renewal of the Navy's current public land withdrawal, which expires in November 2021, as well as:

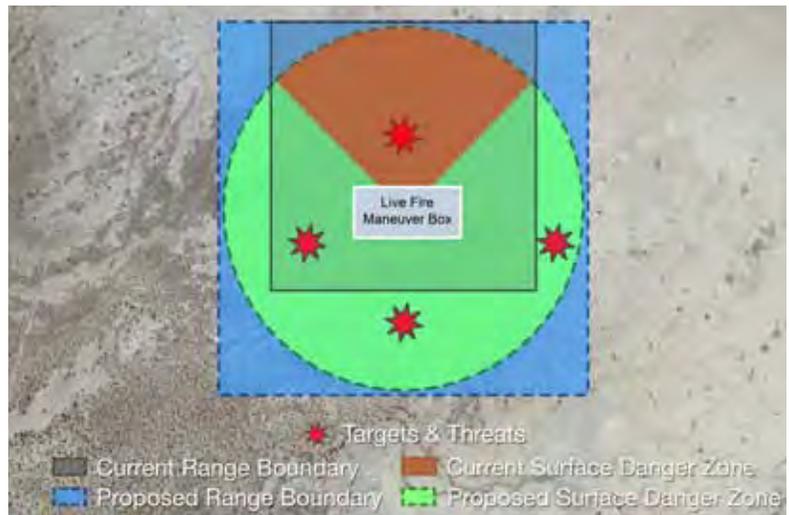
- ▶ Expansion of land ranges through the additional withdrawal of public lands and the acquisition of non-federal land
- ▶ Airspace modifications

The proposed modernization of the Fallon Ranges would significantly close current training gaps and provide the training to meet current and future requirements.

For more information about this proposal, please visit the Fallon Modernization website at [www.FRTCModernization.com](http://www.FRTCModernization.com).



**Figure 4.** Current Bravo-16 bombing range and surface danger zone.



**Figure 5.** Proposed modernized Bravo-16 bombing range and surface danger zone.

**Modernization of the Fallon Ranges would provide the realistic training capabilities needed to meet evolving current and future aviation and ground training requirements.**





# Naval Air Station Fallon



## Who We Are

Naval Air Station (NAS) Fallon is home to the Navy's premier integrated strike warfare training facilities and supports the Fallon Range Training Complex (FRTC). The installation and its training ranges are used to train Air Wings prior to deployment, host aviation weapons tactics schools, and develop the Navy's Tactics, Techniques, and Procedures. The FRTC is the Navy's leading aviation training range, supporting aviation and ground training, including live-fire training. The Navy trains 100% of deploying naval aviation and naval special warfare tactical ground mobility units at the Fallon ranges. Approximately 85% of all aviation ordnance is dropped annually at the FRTC, and 25 or more major training events per year are supported by the ranges. Additionally, aircrews based at NAS Fallon are only minutes away from the ranges, saving time and fuel. All of the Navy's graduate level training schools are located at NAS Fallon's aviation development center. The FRTC is also the only location where Navy Special Warfare Group (NSWG 1 and NSWG 2) SEALs train at the same instructional facility and range. The training conducted here is critical for defending and securing the United States and its interests abroad. Furthermore, NAS Fallon is a major contributor to northern Nevada, providing approximately \$520 million of economic stimulus annually to the regional economy.



18E

## Our Mission Today

NAS Fallon's mission is to provide the most realistic integrated air warfare training support available to carrier air wings, tenant commands, and individual units participating in training events, including joint and multi-national exercises, while remaining committed to its assigned personnel. In support of these critical training and personnel requirements, NAS Fallon continually upgrades and maintains the FRTC, the airfield, aviation support facilities, base living accommodations, and recreational amenities to ensure deployed unit training and a local quality of life that is second to none.



## Challenges to Our Mission

The Navy's ability to sustain its training mission in northern Nevada depends on the continued support and cooperation of its friends and neighbors in surrounding communities.

Incompatible development of various types can threaten NAS Fallon's ability to maintain such a unique and ideal training facility for the fighting forces that protect our freedom. The most significant concerns at NAS Fallon relate to development and restrictions on the use of airspace within the Military Influence Area. These concerns include:

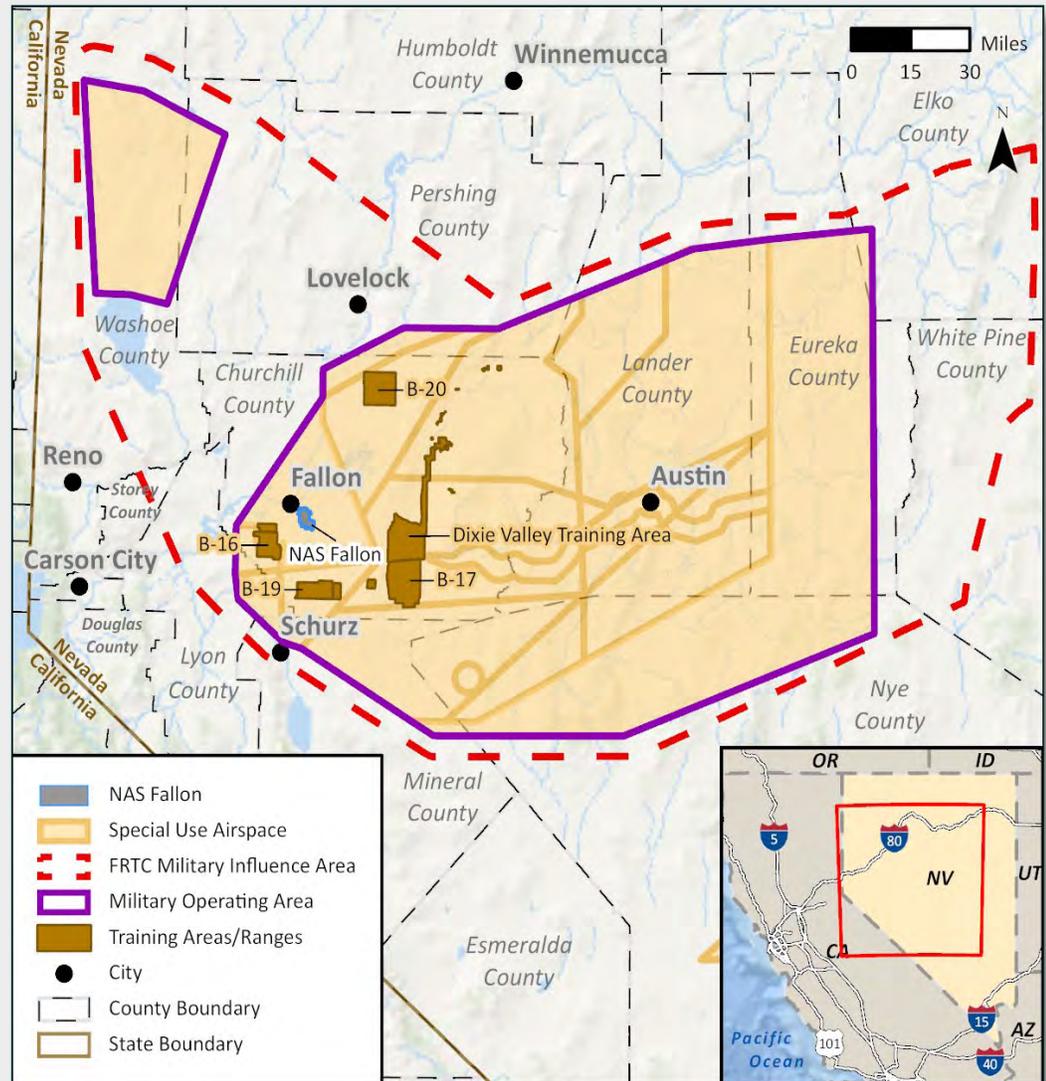
- Residential and commercial development with higher sensitivity to aircraft noise.
- Major changes in land use such as renewable energy projects and large scale rezoning.
- Frequency interference from expanding cellular and commercial communications.
- Vertical flight obstructions from communication towers, new transmission lines, wind turbines, construction cranes, and drill towers.



## Our Areas of Operation

NAS Fallon's land area includes the main station/airfield (8,670 acres), and the training ranges (241,127 acres). The main station, located approximately six miles south of the City of Fallon, conducts nearly 54,000 flight operations annually in support of training activities at the FRTC.

Approximately 13,000 square miles of military airspace overlays northern Nevada to support the flight training mission. The airspace is utilized for large scale air wing attack scenarios, air-to-air combat, and electronic warfare exercises. Training ranges B-17, B-19, and B-20 are primarily air-to-ground target areas for high explosive and precision guided munitions, as well as Close Air Support. B-16 is used by the Naval Special Warfare units for Ground Mobility Training to complete Unit Level Training qualification requirements prior to deployment. The FRTC Military Influence Area identifies the entire training area where the Navy exercises operational capability, promotes awareness of military training, and establishes compatibility standards with local communities.



## Readiness and Environmental Protection Integration (REPI)

NAS Fallon has an active REPI program. Through a partnership with Churchill County, REPI funding is used to buffer and redirect incompatible development from key training areas. Property owners must demonstrate their intent to participate in the REPI program by applying to the Transfer of Development Rights (TDR) program. Upon acceptance, Churchill County and the Navy Region Southwest Real Estate Office will complete the appraisal and easement process. On average, three to six property owners voluntarily enter into the REPI program each year. REPI applications are initiated at the Churchill County Planning Department. To initiate a REPI application or for more information please call (775) 423-7627.

## Noise from Training Activities

Training exercises in the FRTC are necessary to support our national security. The men and women of the armed forces must be trained and equipped to fly into combat at any given time. Our goal is to minimize noise impacts to our surrounding communities, while also meeting flight training requirements.



For further information, please contact:

NAS Fallon Community Planning Liaison Officer: (775) 426-2925

<http://cnic.navy.mil/fallon/index.htm>

For aircraft or operations noise complaints please call (775) 426-2419 or (888) 518-9472

# The Department of Defense's Readiness and Environmental Protection Integration (REPI) Program Buffer Partnerships



A Guide for State, Local, and Private Partners.



**Cover photos:**

Left: Joint Base Lewis-McChord in Washington

Middle: Marine Corps Air Ground Combat Center Twentynine Palms in California

Right: Camp Ripley in Minnesota



Printed on recycled paper.  
30% post-consumer waste.

March 2016

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# 1. Introduction

The REPI program protects military value and maximizes commanders flexibility to accomplish the mission by preventing, removing, and mitigating restrictions to training, testing, and operations. Through the REPI program, the Department of Defense (DoD) funds cost-sharing partnerships among the Military Departments, private conservation groups, and state and local governments. These partnerships, authorized by the U.S. Congress (10 U.S.C. § 2684a), support military readiness by protecting compatible land uses and preserving natural habitat on non-DoD lands. The partnerships help avoid or reduce restrictions that may inhibit the use of existing DoD facilities for training, testing, and operating by preventing these lands from being developed or converted to other incompatible uses.

## ***The REPI Authority for Agreements to Prevent Encroachment: 10 U.S.C. § 2684a***

Enacted by Congress in December 2002, the authority allows the Military Departments to partner with state and local governments or private conservation groups to cost share the acquisition of easements and other real property interests.

### **Essential Elements of a REPI Partnership**

- Eligible entity: State or local government or private conservation organization
- Willing seller
- Cost share for the partner’s acquisition of real property interests
- Must protect compatible land uses or preserve habitat
- Show clear link to mission benefit

REPI buffer partnerships are a key tool for combating encroachment caused by sprawl, incompatible land use, and loss of habitat. By preserving buffer land, we can avoid more costly alternatives, such as workarounds and investments to replace existing training and testing capability. Through these partnerships we will continue to be good stewards of the environment and good neighbors in communities across the country.

*“Workarounds” are modifications to the timing, tempo, location, or equipment used for test and training. These deviations from doctrinal test and training standards may include: reducing training days or time; segmenting an exercise into discrete steps; or changing flight patterns, limiting live-fire, and using simulations.*



**Military test and training activities occur in all types of natural environments.** Above, Navy SEAL candidates conduct amphibious training exercises at the Naval Special Warfare Training Center in Coronado, California.

### *Primer Purpose*

This primer is intended as an introduction for land trusts, state or local governments, and other potential partners. Military installation personnel who are unfamiliar with REPI buffer partnerships may also find it useful. The primer is designed to:

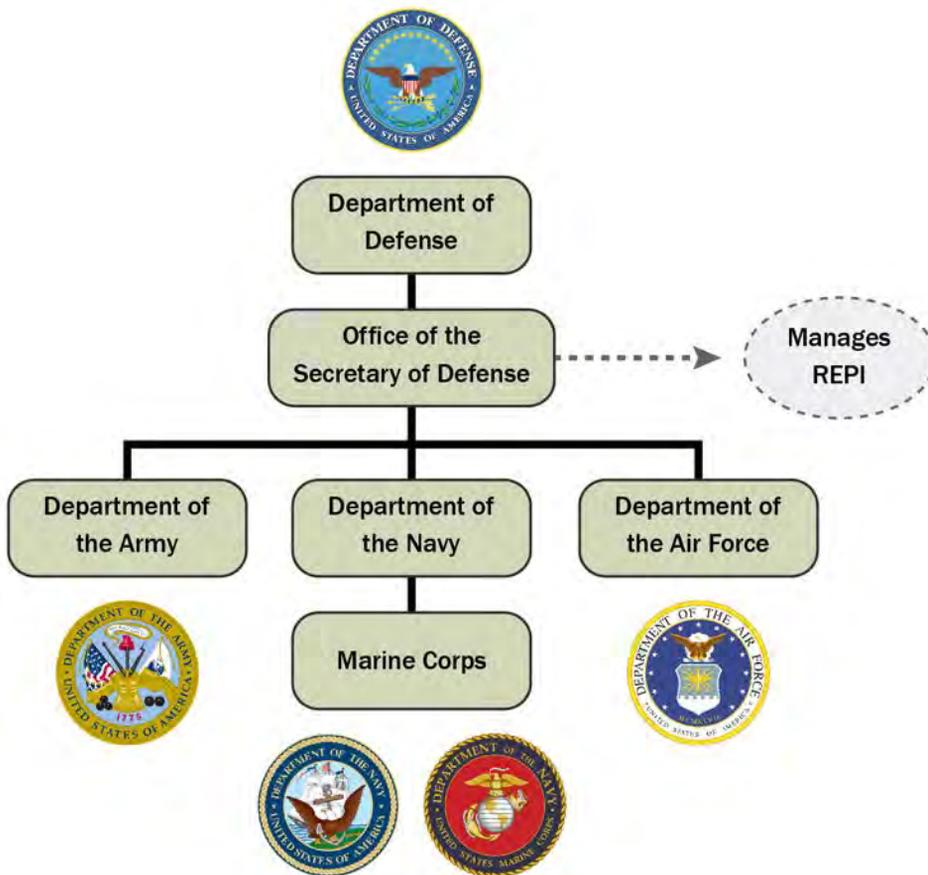
- Help potential partners and military and civilian DoD personnel understand how REPI and the individual Service implementation programs work,
- Outline essential steps to creating a REPI partnership and implementing a REPI project, and
- Facilitate communication, common understanding, and potential collaboration among stakeholders on compatible land use issues.

## 2. Who is the Department of Defense?

DoD is a complex organization. America's largest organization, DoD includes the Office of the Secretary of Defense (OSD), the three Military Departments (including the four Military Services, each with single-Service and joint installations and ranges), the Joint Chiefs of Staffs, and numerous field agencies. Across the entire Department, the Office of the Secretary of Defense provides overarching REPI program guidance and funding support for the Military Departments' efforts to protect their installations and ranges and the missions they support.

There are three Military Departments within DoD: the Departments of the Army, Air Force, and Navy—the Marine Corps is part of the Department of the Navy. We commonly refer to the “four Services” to include Army, Navy, Marine Corps, and Air Force. The Army and Air National Guard are also components within the Army and Air Force. Getting to know our organization is helpful because the Services prepare long-term strategies, engage in partnerships, and complete transactions via Service-specific processes described in the Appendix.

*The Department of Defense manages over 28 million acres of land on about 425 installations. Approximately 380 of these installations have “significant natural resources,” as defined by federal law.*



### 3. What is Encroachment?

Warfighter and unit readiness depends upon the solid platform of training and testing capabilities of our Nation's installations, ranges, and other training and testing spaces. This infrastructure is necessary for conducting daily operations, realistic live-fire training, and effective weapon system testing. Reduced capability and availability of existing land, air, water access, and frequency spectrum put our military readiness at risk.

Incompatible land uses and habitat loss near and adjacent to installations, ranges, and operating areas threaten our ability to provide our military with the most realistic training. If warfighters or their units receive restricted or inadequate training, they are less likely to fully understand combat strategies and tactics, leading to insufficient skills or unnecessarily risky practices on the battlefield. Partnering to limit incompatible development and preserve habitat is vital to avoiding costly training workarounds and higher future military expenses that strain budgets and risk readiness.



**Encroachment, whether by land, air, or water, affects military training, testing, and operational readiness.** These factors do not exist in isolation and many times require a comprehensive, cross-boundary approach to addressing encroachment.

## ***Encroachment Impacts on Military Readiness***

Development near military areas can affect training, testing, and operations in many ways, including:

- Light from developments near installations and ranges reduces the effectiveness of night-vision training
- Residents near installations and ranges complain about the noise, dust, and smoke generated by military activities, resulting in restrictions on the timing, frequency, and type of training activities
- Competition for frequency spectrum interferes with mission readiness
- Communication towers, wind turbines, highways, and energy transmission lines near or through training areas all hinder realistic training and testing
- Land development that destroys or fragments endangered species habitat pushes those species onto less developed military lands, resulting in increased restrictions on training, testing, and operations

Sprawl, incompatible land uses, and other forms of encroachment may individually appear to have a minimal effect on the capacity to test and train, but when combined over time, the effects of these pressures multiply. This ultimately results in irrevocable damage to readiness capabilities.

## ***Addressing Solutions through Partnerships***

In many instances, our best option for protecting the operational capabilities of our installations is to enter into partnerships to protect compatible land uses around installations and ranges. Our partners acquire easements or other interests in land to prevent land use changes from impacting operations. Meanwhile, the partnerships provide additional environmental, economic, and quality of life benefits to neighbors, communities, and DoD alike.

REPI buffer partnerships are an innovative way to address land use and resource challenges caused by encroachment. These partnerships give us the ability to effectively leverage our funding with other organizations interested in preserving land and natural resources. These protected lands serve as compatible land use buffers for installations and ranges. Such protected land can also reduce on-installation habitat restrictions while supporting our partners' goals and objectives.

### ***Partners have included all types of organizations:***

*National land trusts*

*Small local land trusts*

*State agencies*

*County governments*

*City governments*

*Regional development agencies*

*For a full list of partners, please visit the REPI website: [www.REPI.mil](http://www.REPI.mil)*

## 4. How Do REPI Buffer Partnerships Work?

### *The Legal Authority*

In December 2002, Congress gave the Services the authority to enter into agreements with qualified organizations and non-federal agencies to limit encroachment by enacting Section 2684a of Title 10 of the United States Code (10 U.S.C. § 2684a). Under this authority, qualified partners include state or local governments or private conservation organizations. These partners share the cost of purchasing easements or other interests in land, or water rights, from **willing sellers**. The authority allows these cost-sharing partnerships to acquire a real property interest for one of two purposes:\*

1. To limit any development or use that is incompatible with the mission of the installation
2. To preserve habitat to relieve current or anticipated restrictions on military activities

### *REPI Buffer Partnership Funding Sources*

Most buffer projects are multi-year efforts, and the ability to leverage funds and resources is a key to building a solid foundation for success. Funding for these projects comes from DoD and our partners. Under the legal authority, the DoD contribution must come out of annual Operations and Maintenance (O&M) funding. There are two types of DoD funding for REPI buffer partnerships: (1) Service funds or (2) REPI program funds that are identified by Congress in a line-item in the DoD budget. The Office of the Secretary of Defense oversees and administers the REPI program by issuing guidance, defining DoD-wide policies and priorities, and providing the congressional funds to the Services, who then implement the projects.

REPI program funds are multiplied by cost share from outside funds, which account for approximately half of total project costs to date. Partner contributions include other federal grants, state and local grants or cost share programs, private capital from conservation partners, bargain sales or donations from willing landowners, and in-kind services from our partners. Multiplying the REPI cost share is vital because the total Service funding requirements greatly exceed available funding. This cost share continues to demonstrate the value of REPI partnerships to Congress and the taxpayers.

*\* The authority also allows for protecting Clear Zone areas, but the REPI program does not provide its funds for these acquisitions.*

#### **Funding Sources for Buffer Projects**

**REPI program funds:**  
*Provided by Congress in DoD's annual budget.*

**Service funds:** *Any Army, Navy, Marine Corps, or Air Force O&M funding or exchanged excess or Base Realignment and Closure (BRAC) real property*

**Partner funds:** *Includes other federal grants, State and local grants or cost share programs, private capital from conservation organizations, bargain sales or donations from willing landowners, and in-kind services from partners. Partner contributions need not be cash funds.*



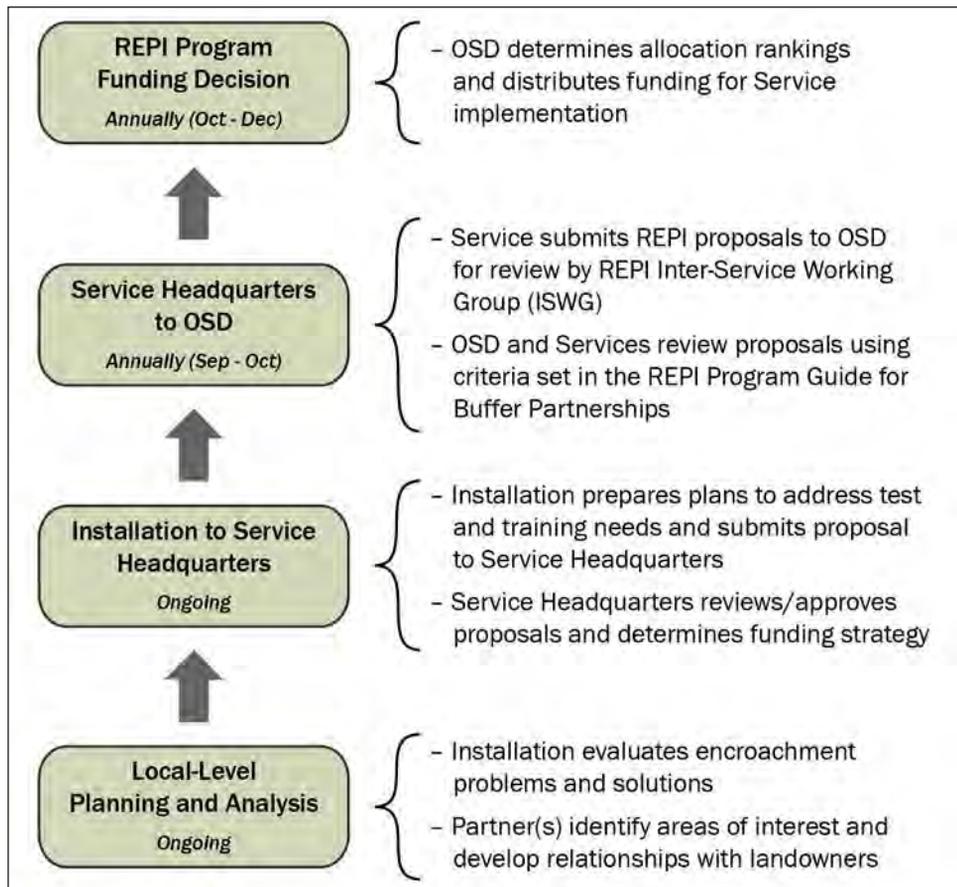
## 5. How Do I Develop and Implement a REPI Buffer Project?

Individual Service programs to implement REPI buffer partnerships can be found in the Appendix on page 20.

The REPI program is an internal DoD program, managed by OSD, that supports the partnerships described in this primer. The REPI program does not provide funding to our partners through an open grants program, rather each Service submits project proposals for funding. Each Service manages a comprehensive portfolio of buffer projects and is not required to submit all of those projects for REPI program funding. The Appendix contains details about each Service's process for identifying, reviewing, and approving buffer projects.

In general, projects are identified locally at the installation or training and testing range level, but reviewed and approved centrally at the Service headquarters level. OSD provides overarching REPI program policy and guidance, administers REPI funding, and oversees reporting and tracking of Service efforts.

### Project Proposal Review Process



## ***Project Implementation, Monitoring, and Reporting***

While the focus of REPI buffer partnerships is to acquire easements or other interests in land, partnerships do not end there. To sustain our ongoing training, testing, and operational capabilities, protection of buffer land and habitat through REPI buffer projects is usually perpetual. To ensure permanence, a partner must plan for easement monitoring, enforcement, and often long-term natural resources management. Funding for these services may be provided from DoD to the partner with a one-time, upfront payment.

**Easement Monitoring and Enforcement.** REPI partnerships should plan for and institute procedures to review, monitor, and, as necessary, enforce the terms of all easements or other real estate interests acquired. Partnerships should perform these services at least annually, such as through visual inspections of the properties according to the Land Trust Alliance's *Land Trust Standards and Practices*, available online at <http://www.landtrustalliance.org>.

**Natural Resource Management and Restoration.** Many REPI buffer projects that preserve habitat require more than just protecting the land from being developed. Projects often involve long-term management of natural resources, including habitat restoration and enhancement and species monitoring. REPI program funds may be used for these purposes.

**Reporting Requirements.** Service representatives work closely with partners to implement projects and close transactions. Specific reporting requirements vary among the Services, depending upon the types of agreements used to obligate funds. Partners should expect to do at least annual reporting to the installation on project status and to carry on long-term partnerships with installations. DoD, meanwhile, is required to provide Congress an annual report on our use of the REPI partnership authority. The Services provide OSD with information related to all transactions under the authority and project cost shares, and OSD details project accomplishments and benefits.

**Note:** *REPI program funds are appropriated ANNUALLY by Congress. This means that all funds MUST be contractually obligated during the Federal fiscal year (ends on September 30) in which they are appropriated by Congress. All transactions must be completed as soon as possible after that obligation, with an expectation of expending all funds no later than 18 months after obligation.*



**REPI buffer partnerships prevent encroachment and promote readiness.** REPI partnerships, along with other complementary land use tools, sustain the capabilities of our Nation's installations, ranges, and training, testing, and operating spaces so that our Armed Forces are well trained and equipped.

### *Other Complementary Land Use Tools*

REPI partnerships are one of many tools in the encroachment management toolbox. Integrating REPI partnerships with some of the other DoD tools and strategies can help further increase land protection, conservation, and cost savings. A few other examples:

**Air Installations Compatible Use Zone (AICUZ) and Range Air Installations Compatible Use Zone (RAICUZ).** Through the AICUZ program, air installations work with local governments and the community to educate stakeholders on the air installation's mission and develop compatible land use regulations using zoning and local ordinances to reduce potential accidents and noise impacts to the community. This program designates Accident Potential Zones, Clear Zones, and noise zones at the end of military runways. These are areas of land that need to be compatible with air operations while preserving the health and safety of on-base personnel and the community. The Navy, Marine Corps, and Air Force all use AICUZ criteria to strategically identify parcels in the vicinity of air stations and bases to be protected.

**Land Exchange Authority (10 U.S.C. § 2869).** Instead of using REPI program or O&M funds for DoD contributions to a REPI buffer transaction, the Services can use a property exchange under the authority of 10 U.S.C. § 2869. The 2869 authority allows DoD to convey excess or closed Base Realignment and Closure (BRAC) property in exchange for an agreement to acquire real property under the 2684a authority. Excess land can be directly exchanged for land of equal value that will be protected through a REPI partnership, or the excess land can be transferred to a partner who agrees to make a contribution of equivalent value to a REPI buffer transaction. A land exchange provides DoD the ability to efficiently use limited resources to benefit its mission. Meanwhile, the excess DoD property is returned to the tax rolls or otherwise used for community benefit.

**Joint Land Use Study (JLUS).** DoD's Office of Economic Adjustment provides technical assistance to installation and range officials, and technical and financial assistance to neighboring states, communities, and interest groups through a JLUS. A JLUS is a cooperative land use planning effort between affected local governments and the military installation that provides recommendations and a policy framework to support adoption and implementation of compatible development measures into local planning programs. A JLUS helps the military to minimize its operational effects on neighboring jurisdictions and ensures local civilian development is compatible with the ongoing DoD mission. JLUS and the REPI program are complementary. Through JLUS, a military Service and/or its stakeholder communities may identify an issue for which a REPI buffer project can provide resolution. Thus, JLUS is a powerful tool for bringing communities and the military together to address compatible use issues and needs. More information is available at <http://www.OEA.gov>.

**Conservation Credits and Species Recovery Credits.** Installations work with the U.S. Fish and Wildlife Service and state fish and wildlife agencies to ensure natural resources are managed consistent with proper stewardship and sound science, while complying with legal requirements. To alleviate restrictions on threatened and endangered species habitat present on installations, our installations are working off-site to attain credits for promoting the conservation and recovery of a listed species or its habitat. Installations can consult with the U.S. Fish and Wildlife Service according to Section 7 of the Endangered Species Act to accrue credits and alleviate restrictions by showing a measurable contribution to a species' recovery through equivalent protection on non-DoD lands.

## 6. What Else Does the REPI Program Support?

### *Education and Engagement*

A significant component of the REPI program involves engaging with our partners and other stakeholders to help advance understanding of each other's missions. This entails providing helpful tools and training like community forums, site visits of ranges and installations, workshops and other trainings sessions, and DoD's "primer" series, developed in partnership with a number of national partners. Primers, like this one, provide a chance to go in-depth with particular topics. You can download copies for free at <http://www.REPI.mil/primers>. DoD also partners with the Land Trust Alliance on a knowledge-sharing initiatives that include the REPI Webinar Series of best practices, tutorials, and capacity building on REPI partnerships. More information on these resources is available at <http://www.REPI.mil>.

### *Large Landscape Partnerships*

Individual REPI buffer partnerships can create greater and multiple benefits by expanding and coordinating their efforts and activities in the form of regional partnerships and landscape-scale initiatives. By promoting cross-boundary collaboration on planning and land use issues, REPI partnerships can enhance sustainability efforts of a broader scale and scope. To this end, DoD is a partner in two multi-state, multi-agency partnerships in rapidly growing areas of the country with significant DoD land presence: the Southeast and the Southwest.

The Southeast Regional Partnership for Planning and Sustainability (SERPPAS) brings together senior leadership from southeastern states (Alabama, Florida, Georgia, North Carolina, South Carolina, and Mississippi) and federal agencies to work collectively on regional planning, conservation, economic, and sustainability issues. Similarly, the Western Regional Partnership (WRP) provides opportunities for state and federal agencies in California, Arizona, Nevada, Utah, and New Mexico to come together to discuss common issues and seek collaborative solutions.

## *The Result: More Success for Everyone*

These outreach and engagement efforts increase understanding of the mutual benefits REPI partnerships provide and also attract more resources and partners to more projects. They provide tools for more effective application of solutions to reduce and prevent encroachment on military installations and to meet partner goals. The net result is more conservation of natural resources, better land use planning, and longer-term benefits for communities, stakeholders, and the military.



**Fort Campbell: a REPI partnership success story.** Above, to protect Fort Campbell from encroachment pressures from nearby growing towns along the Tennessee-Kentucky border, the installation worked with the Land Trust for Tennessee and the Kentucky Department of Agriculture to conserve nearby working farmland in both states. This REPI buffer project allows the partnership to restore nearby unique grasslands and sustains a rural landscape well suited to supporting the post's military mission. In addition to private land trust and state funds, partner contributions included U.S. Department of Agriculture's Natural Resources Conservation Service grants and landowner donations.

## 7. What are Key Steps in Developing a REPI Buffer Partnership?

The following are some key steps to help develop a successful partnership:

1. Find information, training, primers, policy and guidance on REPI buffer partnerships and the respective Service programs. Information on REPI is available on our website at <http://www.REPI.mil>.
2. Installations should identify potential partners; if you are a land trust or other organization interested in becoming a potential partner, you should contact the local or regional installation office. The following are some of the military representatives and offices that could be of assistance:
  - a. Community Planning & Liaison Officers (Navy, Marine Corps, and Air Force)
  - b. Plans, Analysis and Integration Office (Army)
  - c. DoD REPI Coordinator (OSD)
    - a. Public Affairs Office (all Services)
3. Installations and partners should meet to discuss the possibility of learning more about the installation mission and operations, and to identify areas of mutual interest. This meeting may, with prior coordination, include a site visit of training ranges and facilities. Contact the installation for more information on seeking a site visit.
4. Share key information early in the project development process. Installations should evaluate mission capabilities at risk from encroachment, analyze the threat, and develop potential solutions for inclusion in comprehensive planning and proposal development. Partners should be involved and provide input early and often. Together, partnerships should work to:
  - a. Prepare and provide maps of your focus area with parcel information
  - b. Identify common land-use and conservation goals and partnerships
  - c. Identify state and regional goals
  - d. Identify overlapping partner areas of interest with the installation
  - e. Inventory surrounding land uses and current zoning
  - f. Identify, survey, and map the ecological landscape
  - g. Identify or survey landowner interests

*Every installation maintains a website with contact information for various offices, including those listed on this page.*

*When preparing maps, it is particularly useful to utilize geographic information system (GIS) to map military mission requirements. GIS maps can be overlaid with other local and regional planning information for better coordination and decision making.*



**Partners learn and work together.** At Marine Corps Base Camp Lejeune, an organized range tour allowed local partners to further understand the environment and needs of the military, while the military learns about the perspective and concerns of local partners.

5. Contact and meet with other potentially interested partners and seek multiple funding sources, such as:
  - a. Federal grants programs like National Oceanic and Atmospheric Administration’s Coastal and Estuarine Land Conservation Program, U.S. Department of Agriculture’s Natural Resources Conservation Service, or National Park Service’s Land and Water Conservation Fund grants
  - b. State and local grant programs such as the North Carolina Clean Water Management Trust Fund or the Virginia Land Conservation Fund
  - c. State military planning commission funds
  - d. Donations of land in fee or conservation easements
  - e. Land exchanges (as authorized for DoD under 10 U.S.C. § 2869)
  - f. Crediting or banking opportunities



**Take the time to celebrate success.** Getting together to celebrate the success of your REPI partnership is a small but important way to acknowledge everyone's hard work, build more meaningful relationships, and carry the momentum forward. U.S. Army Garrison-Hawaii's partners and the local community held a special event to celebrate the protection of a 1,129-acre coastal bluff at Pupukea-Paumalu near the Army's Kahuku Training Area on the North Shore of the island of Oahu. Partners from the Army, The Trust for Public Land, and the North Shore Community Land Trust attended the community ceremony.

6. Agree on a long-term strategy and work together to prepare plans or proposals. The REPI buffer project process takes time and may take years to see through. Develop land protection strategies that provide the maximum flexibility to meet landowner needs and partner missions, protect the military mission, and leverage the greatest number of other resources.
7. Raise matching funds. There is no minimum cost share requirement but the Services may have varying targets.
8. Continuously canvass the community for interested landowners and be active in community outreach.
9. Work together closely and keep each other fully informed of ongoing process and status of the transaction.
10. Celebrate success with signing ceremonies and other special events, and carry that momentum forward to project implementation and other successes!

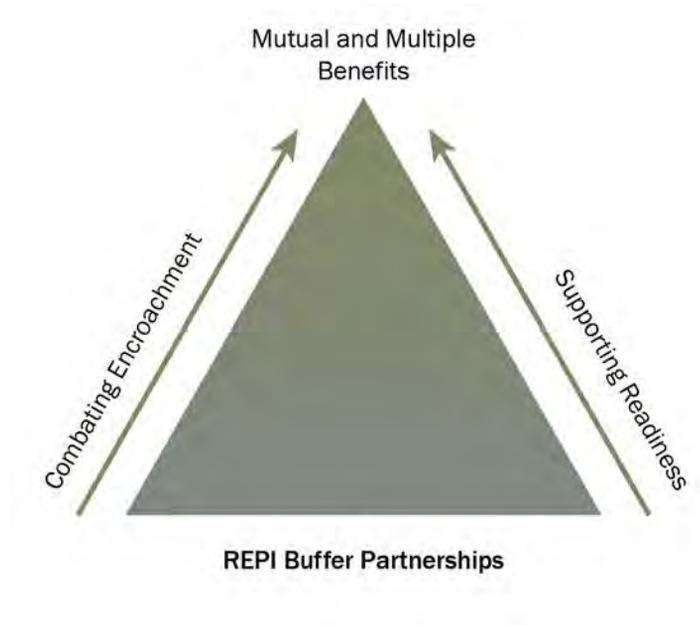
## *Lessons Learned*

The following are some recommendations gained from the valuable feedback of our partners and installations who have successfully completed REPI buffer transactions:

- Establish contacts between installation, regional military office, and local community stakeholders—stable points of contact improve the process and communication.
- Keep communication open and provide updates on a regular basis.
- Make sure everyone has a common understanding and keeps perspective on the partnership's context and goals.
- Align goals between military and partners to optimize funding and target priorities.
- Seek other funding sources that have the same land preservation goals.
- Involve a partner that can translate the often technical language of the REPI buffer authority to unfamiliar landowners.
- Be aware of landowner education and biases.
- Take time to build trust with other agencies and stakeholders.
- Choose a project that is a priority for all stakeholders involved—increases motivation.
- Develop agreements with all parties contributing funds so that they all agree to the appraiser selected and the guidelines.
- Start the process as soon as possible.
- Build on previous partnerships or other successes.
- Prepare for delays, changes in procedure, and other roadblocks, but don't get discouraged!

## 8. Summary

REPI buffer partnerships are a solution for combating encroachment and supporting our Nation's long-term military readiness, while delivering mutual, multiple benefits to communities and stakeholders.



Through REPI buffer partnerships, you can enhance military readiness, protect valuable habitat, preserve working farms and forestland, support sustainable economies, and defend your local heritage. The REPI program also provides new opportunities to collaborate with other federal land conservation programs and landscape-scale initiatives. There are many opportunities to come together in partnership with the REPI program and make a difference.



**REPI partnerships have clear and successful results.** The REPI buffer project at Marine Corps Air Station Beaufort in South Carolina preserves local wetlands to protect water quality near the installation. Key partners of this project include Beaufort County, Beaufort County Open Land Trust, the City of Beaufort, The Trust for Public Land, and the South Carolina Department of Natural Resources.

## **APPENDIX: Service Programs to Implement REPI Buffer Partnerships**

While the Office of the Secretary of Defense provides overarching REPI program policy and guidance and administers funding, the Services manage project and partnership planning and implementation. The Army, Navy, Marine Corps and Air Force manage a comprehensive portfolio of REPI buffer projects through a Service-specific process. Each Service program specifies how REPI partnerships and their projects are planned, identified, reviewed, and approved. The following provides a brief summary of key steps and processes for each Service program.

### ***Army***

The Army uses a variety of supporting programs and tools to ensure sustainment of its installations, ranges, and test and training lands, including its implementation of the 2684a authority through Army Compatible Use Buffers (ACUBs). ACUB enables the Department of the Army to maintain the capability to support mission requirements through conservation by entering into cooperative agreements with partners who purchase land or interests in land.

An Army installation prepares an ACUB proposal, which includes a comprehensive encroachment analysis of the threat, risk, and solution. The proposal details a long-term partnership approach to protect prioritized lands at critical at-risk test or training areas. The ACUB partner, not the Army, acquires a land interest from the landowner—either fee simple title or a conservation or restrictive use easement. The partner provides necessary land management and easement monitoring and enforcement, while the Army retains a right to monitor or enforce, or transfer interest to another eligible partner if the partner fails to meet the terms of the Cooperative Agreement. Key steps in the ACUB process include:

1. Installation identifies the need and submits an ACUB proposal to headquarters
2. A Cooperative Agreement between the Army and partner organization(s) is executed
3. Partner interacts with a willing seller to structure terms of the transaction
4. Partner provides terms to Army for review and approval
5. Army authorizes funding to partner
6. Partner and willing landowner execute the transaction
7. Process repeats as required

## ***Navy and Marine Corps***

Under the Department of the Navy (DON), Navy and Marine Corps installations develop an Encroachment Management Program to address compatibility and readiness sustainment. The Encroachment Partnering (EP) program is a key component of the overall Encroachment Management Program, providing the tool to implement the 2684a authority and REPI program funding. The Navy and Marine Corps seek out partners who share a vested long-term interest in properties of mutual interest and who are able to secure funding to participate in the transactions. DON and its partners primarily enter into multi-year encroachment protection agreements that identify geographic areas of interest and govern how each party will conduct a transaction using the combination of partner, REPI program, and Navy/Marine Corps funds. Under this over-arching multiyear agreement the partnership executes individual real estate transactions over a period of years. Funds are obligated and maintained in escrow, so as to be available in the subsequent fiscal year and to allow funding to be added every fiscal year based on requirements and availability of funds.

In some cases, partners may obtain a perpetual conservation easement on a property to preserve its compatible use or to protect habitat to mitigate environmental restrictions on test and training, while the property remains in private ownership. In other cases, the partner will purchase the property outright and manage it for public benefit. In each case, the DON obtains a real property interest from the partner, typically in the form of a restrictive use easement or conservation easement, ensuring that the land use will be compatible with nearby military uses in perpetuity. Key steps in the Navy and Marine Corps EP process include:

1. Generally, the Installation, potential partners, and stakeholders have independent land use studies to identify priority lands and operational requirements
2. The Installation may host a compatible use workshop to seek involvement and support from potential partners and stakeholders
3. Potential partners may host a Conservation Forum or other outreach events to explain the process and seek involvement and support
4. Partner or Installation identifies a willing seller and partner identifies funding sources
5. The local Naval Facilities Engineering Command (NAVFAC) executes all DON agreements and/or acquisitions of real property interests with partner
6. Generally, partner negotiates conservation easement or fee purchase from willing seller
7. Navy Real Estate Specialist negotiates real property interest transaction with partner
8. DON authorizes funding to escrow account
9. NAVFAC approves reimbursement (invoices) or check at closing, generally from escrow
10. NAVFAC reports all Navy/USMC transactions to OSD

## ***Air Force***

The Air Force encroachment management enterprise planning process provides a holistic approach, from decision-making regarding mission changes to mission sustainment. Underpinning this enterprise process is collaboration and communication across and between organizations at all levels—including Air Force Headquarters, Major Commands, and installations—as well as with stakeholders. To further enhance its encroachment prevention efforts, the Air Force is developing a collaborative planning and partnering effort and is transforming its off-base encroachment efforts with a comprehensive strategy that integrates a full range of tools, including REPI buffer partnerships and use of the 2684a authority.

The Air Force’s efforts combine internal real estate acquisition strategies for obtaining easements with external communication and outreach strategies. Together with its partners and stakeholders, installations identify parcels for acquisition and develop a REPI buffer proposal. Air Force Major Commands review and prioritize proposals to be submitted to Air Force Headquarters, who then nominates projects to OSD for REPI program funding. After the partner acquires a conservation easement or fee title to the target parcel, the Air Force may become a co-signatory on the conservation easement or obtain a real property interest in the form of a restrictive-use easement from the partner. Key steps in working with the Air Force include:

1. Installation creates REPI buffer project team to define area of concern and identify partners
2. Installation executes agreements with partner on a project-by-project basis
3. Partner identifies a willing seller and matching funds
4. Partner negotiates conservation easement or fee purchase from landowner
5. Installation attorney negotiates restrictive easement purchase from partner
6. Air Force obligates funding to partner for closing
7. Partner closes transaction
8. Annual Reports to the Air Force

This primer is one of a series designed in cooperation with DoD's Sustainable Ranges Initiative. The primer series includes:

- Collaborative Land Use Planning: A Guide for Military Installations and Local Governments
- Commander's Guide to Community Involvement
- Commander's Guide to Renewable Energy
- Outreach for Mission Sustainability: Working to Balance Military and Civilian Community Needs
- Partner's Guide to the Department of Defense's Readiness and Environmental Protection Integration (REPI) Program Buffer Partnerships
- Working to Preserve Farm, Forest and Ranch Lands: A Guide for Military Installations
- Working with Conservation Districts: A Guide for Military Installations
- Working with Land Trusts: A Guide for Military Installations and Land Trusts
- Working with Local Governments: A Practical Guide for Installations
- Working with Non-Governmental Organizations: A Guide for Military Installations
- Working with Regional Councils: A Guide for Installations
- Working with State Legislatures: A Guide for Military Installations and State Legislatures

These primers are available online at <http://www.REPI.mil/primers>

To obtain hard copies or for more information, contact:

REPI Program Outreach Coordinator  
Office of the Deputy Under Secretary of Defense  
(Installations and Environment)  
[www.REPI.mil/primers](http://www.REPI.mil/primers)  
(571) 969-6774

# Collaborative Conservation: Preserving Freedom and A Way of Life

18E

## Readiness and Environmental Integration (REPI) Program

The primary goal of the REPI program is to partner with private landowners, conservation organizations, and local, state, and federal agencies and provide financial and technical resources to ensure the health and future of working lands, while maintaining compatible land use for military operations.



www.repi.mil

Nevada's vast expanse of high desert, rangelands, and mountain peaks are rich with natural resources invaluable to the people and communities that call this state home. While these resources provide an abundance of recreational and economic opportunities to Nevadans, suitable climate conditions and topography also provide essential year-round training opportunities to the United States military.



www.sagegrouseinitiative.com

Naval Air Station Fallon (NASF) and the Fallon Range Training Complex (FRTC) comprise the Department of the Navy's premier tactical air warfare training center, the only asset of its kind in the nation. An entire carrier air wing can perform integrated training that simulates actual combat missions including air to air and air to ground combat, search and rescue, close air support, and special operations.

## Protection of Valuable Resources

The REPI Program in Nevada is committed to protecting valuable resources by helping to prevent land-use conflicts near installations and surrounding airspace primarily by investing in Conservation Easements on private ranch lands. Easements enable a mutually beneficial partnership to protect agricultural, ecological, and military interests from the threat of development, while providing an opportunity to secure a future for wildlife and the natural resources we all depend on.

### What is a conservation easement?

A conservation easement is a proactive contract placed on a piece of property to protect its ecological or open space values. It is a legally binding, voluntary agreement that helps preserve agricultural values by preventing future development and certain types of uses from taking place.

### A Conservation Easement:

- Preserves ranching and other traditional land uses
- Keeps valuable ranch and farmland in agricultural production
- Can tie water rights to the land
- Keeps private land on county tax rolls
- Stays with the property in perpetuity
- Protects important wildlife habitat
- Benefits the public and the environment



Smith Creek Ranch Conservation Partnership  
<https://www.youtube.com/watch?v=b2t5Ccyq55M>

### KEY PARTNERS

- Bureau of Land Management
- The Nature Conservancy
- Nevada Department of Wildlife
- Churchill County
- U.S. Fish and Wildlife Service
- Nevada Conservation Districts Program
- U.S. Forest Service
- Rocky Mountain Elk Foundation
- U.S. Department of Agriculture – Natural Resource Conservation Service

Together we can do so much more.



POC: Rob Rule (775) 426-2925



## Churchill County Agenda Report

**Date Submitted:** May 7, 2019

**Agenda Item #:** Informational  
Items -

**Meeting Date Requested:** June 19,  
2019

**To:** Advisory Board to Manage Wildlife

**From:**

**Subject Title:** Consideration and possible action re: Items listed on the Nevada Board of Wildlife Commissioners' Agenda for June 21 and 22, 2019, which is attached as Exhibit "A"..

**Type of Action Requested:** Other

**Does this action require a Business Impact Statement?** No

**Recommend Board Action:** the board may direct action as deemed appropriate.

**Discussion:** The board will consider items listed on the Nevada Board of Wildlife Commissioners' Agenda for June 21 and 22, 2019, which is attached as Exhibit "A". The board will take action as deemed appropriate.

**Alternatives:** N/A

**Fiscal Impact:** N/A

**Explanation of Impact:** N/A

**Funding Source:** N/A

**Prepared By:** Pamela D. Moore, Deputy Clerk to the Board

**Reviewed By:**

\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk to the Board

Date: June 12, 2019

Date: June 12, 2019

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.



# Churchill County Agenda Report

\_\_\_\_\_  
Peggy A. Hughes, Member

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**Board Action Taken:**

**Motion:** \_\_\_\_\_

1) None Aye: 0  
2) None Nay: 0

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

## Nevada Board of Wildlife Commissioners' Meeting Agenda

### Meeting location:

El Capitan Lodge and Casino  
"On Site Trophy Room"  
540 F. Street  
Hawthorne, NV 89415

Public comment will be taken on every action item and regulation workshop item after discussion but before action on each item, and at the end of each day's meeting. Public comment is limited to three minutes per person. The chairman, in his discretion, may allow persons representing groups to speak for six minutes. Persons may not allocate unused time to other speakers. Persons are invited to submit written comments on items or attend and make comment during the meeting and are asked to complete a speaker card and present it to the Recording Secretary. To ensure the public has notice of all matters the Commission will consider, Commissioners may choose not to respond to public comments in order to avoid the appearance of deliberation on topics not listed for action on the agenda.

Forum restrictions and orderly business: The viewpoint of a speaker will not be restricted, but reasonable restrictions may be imposed upon the time, place and manner of speech. Irrelevant and unduly repetitious statements and personal attacks that antagonize or incite others are examples of public comment that may be reasonably limited.

Please provide the Board of Wildlife Commissioners ("Commission") with the complete electronic or written copies of testimony and visual presentations to include as exhibits with the minutes. Minutes of the meeting will be produced in summary format.

### **Friday, June 21, 2019 – 10:00 a.m.**

- 1. Call to Order, Pledge of Allegiance, Introduction and Roll Call of Commission and County Advisory Board Members to Manage Wildlife (CABMW) – Chairman Johnston**
- 2. Approval of Agenda – Chairman Johnston – For Possible Action**  
The Commission will review the agenda and may take action to approve the agenda. The Commission may remove items from the agenda, continue items for consideration or take items out of order.
- 3.\* Approval of Minutes – Chairman Johnston – For Possible Action**  
Commission minutes from the April 8, 2019, and May 3 and 4, 2019, meetings.
- 4. Member Items/Announcements and Correspondence – Chairman Johnston – Informational**  
Commissioners may present emergent items. No action may be taken by the Commission. Any item requiring Commission action may be scheduled on a future Commission agenda. The Commission will review and may discuss correspondence sent or received by the Commission since the last regular meeting and may provide copies for the exhibit file (Commissioners may provide hard copies of their correspondence for the written record). Correspondence sent or received by Secretary Wasley may also be discussed.

- 5. County Advisory Boards to Manage Wildlife (CABMW) Member Items – Informational**  
CABMW members may present emergent items. No action may be taken by the Commission. Any item requiring Commission action will be scheduled on a future Commission agenda.
- 6. Presentation of Nevada Test and Training Range and the Desert National Wildlife Refuge – Deputy Project Leader, Kevin DesRoberts – For Information Only**  
The Commission will be provided an update on the Nevada Test and Training Range withdrawal renewal pertaining to the Desert National Wildlife Refuge.
- 7.\* Duck Stamp Request – Wildlife Staff Specialist Mike Zahradka and Division Administrator Alan Jenne - For Possible Action**  
The Commission will review and may take action to approve up to \$117,500 for projects submitted for FY 2020 funding from the Duck Stamp account. The specific Duck Stamp projects that may be approved are listed below:
- Assessing Avian Nest Success at Carson Lake (\$45,000)
  - Geo-Tube Dams for Regulating Water at Carson Lake (\$22,500)
  - Ducks Unlimited Wetlands Conservation Support (\$10,000)
  - Overton WMA Ponds Fence Project (\$15,000)
  - Mason Valley WMA Waterfowl Habitat Enhancement (\$15,000)
  - Eastern WMA Complex Weed Control (\$10,000)
- 8. Wildlife Heritage Committee – Commissioner and Committee Chairman Valentine**
- A.\* Heritage Committee Report – Chairman Valentine – Informational**  
The Commission will hear a report on the Committee’s recent meeting.
- B.\* Heritage Tag Vendor Proposals – Chairman Valentine – For Possible Action**  
The Commission will review the Wildlife Heritage Committee’s recommendations regarding Heritage Tag Vendor proposals for Fiscal Year 2020 and may take action on the proposals.
- C. Heritage Project Extension Requests – Chairman Valentine – For Possible Action**  
The Commission will review Committee recommendations and may approve extension requests from projects approved in previous fiscal years.  
\*Note: Support material for this agenda item will be provided one to two weeks in advance of the Commission meeting.
- D. Heritage Funding Reallocation – Chairman Valentine – For Possible Action**  
The Commission will review Committee recommendations and may approve reallocation of any unused Heritage funds from previously approved projects to other previously approved projects from the same fiscal year.  
\*Note: Support material for this agenda item will be provided one to two weeks in advance of the Commission meeting.

**E.\* Fiscal Year 2020 Heritage Project Proposals – Chairman Valentine – For Possible Action**

The Commission will hear recommendations from the Committee and may take action to approve up to \$979,702.65 for projects submitted for FY 2020 funding from the Wildlife Heritage account. The preliminary funding recommendations from the Committee are listed below and may be approved by the Commission. These recommendations may change at the 8:00 a.m., June 21, 2019 Heritage Committee meeting.

- Bighorn Sheep Capture, Transplant and Monitoring – Project # 20-01 (\$100,000)
- Wildfire-Related Restoration and Seed Purchase – Project # 20-02 (\$100,000)
- South Mountains Habitat Restoration – Project # 20-03 (\$75,000)
- Toole Springs Lek Juniper Removal – Project # 20-04 (\$65,000)
- Egan Johnson Basin Restoration – Project # 20-05 (\$70,000)
- North Cave Valley Habitat Restoration – Project # 20-06 (\$60,157.65)
- Prioritizing and Protecting Natural Water Sources – Project # 20-07 (\$50,000)
- Monitoring Moose Expansion in Nevada – Project # 20-08 (\$28,000)
- Big Game Survey Tool – Project # 20-09 (\$70,000)
- Maximizing the Effectiveness of Common Raven Removal– Project # 20-10 (\$70,000)
- Survey and Maintenance of Existing Big Game Water Developments – Project # 20-11 (\$36,000)
- Staheli Chaining Maintenance Project – Project # 20-12 (\$75,000)
- Blacktop Apron Guzzler Upgrade – Project # 20-13 (\$21,400)
- Mormon #3 Prospect Guzzler Upgrade – Project # 20-14 (\$21,615)
- Douglas Canyon PJ Removal Project – Project # 20-15 (\$50,000)
- Bighorn Disease Susceptibility Analysis – Project # 20-16 (\$62,530)
- Steptoe Valley Shooting Complex – Project # 20-17 (not recommended for funding)
- Lincoln County Mule Deer Collaring Project – Project # 20-18 (\$25,000)

**9. Nevada Department of Wildlife Project Updates – Director Wasley – Informational**

The Commission has requested that the Department provide regular project updates for ongoing projects and programs as appropriate based on geography and timing of meetings. These updates are intended to provide detail in addition to the summaries provided as part of the regular Department Report and are intended to inform the Commission and public as to the Department’s ongoing duties and responsibilities.

**10. Public Comment Period**

Persons wishing to speak are requested to complete a speaker’s card and present it to the recording secretary. No action can be taken by the Commission at this time; any item requiring Commission action may be scheduled on a future Commission agenda.

**Friday, June 21, 2019 – Tour will begin at the Close of Agenda Item #10**

**Commission Tour – Informational**

The Commission will tour Mount Grant to see the sheep habitat as well as tour Sportsman's Beach to see the lake level decline. Informational presentations will be made at several sites, but no action will be taken by the Commission. The public is invited to participate but will be required to provide their transportation. The group will depart from the meeting location.

**Saturday, June 22, 2019 – 8:30 a. m.**

- 11. Call to Order, Pledge of Allegiance, Roll Call of Commission and County Advisory Board Members to Manage Wildlife (CABMW) – Chairman Johnston**
- 12. Approval of Agenda – Chairman Johnston – For Possible Action**

The Commission will review the agenda and may take action to approve the agenda. The Commission may remove items from the agenda, continue items for consideration or take items out of order.
- 13. Member Items/Announcements and Correspondence – Chairman Johnston – Informational**

Commissioners may present emergent items. No action may be taken by the Commission. Any item requiring Commission action may be scheduled on a future Commission agenda. The Commission will review and may discuss correspondence sent or received by the Commission since the last regular meeting and may provide copies for the exhibit file (Commissioners may provide hard copies of their correspondence for the written record). Correspondence sent or received by Secretary Wasley may also be discussed.
- 14. County Advisory Boards to Manage Wildlife (CABMW) Member Items – Informational**

CABMW members may present emergent items. No action may be taken by the Commission. Any item requiring Commission action will be scheduled on a future Commission agenda.

**Commission Regulations – Adoption – For Possible Action – Public Comment Allowed**

- 15.\* Upland Game Bird Stamp Request – Wildlife Staff Specialist Shawn Espinosa and Division Administrator Alan Jenne – For Possible Action**

The Commission will review and may take action to approve up to \$295,100 for projects submitted for FY 2020 funding from the Upland Game Bird Stamp account. The specific Upland Game Bird Stamp projects that may be approved are listed below:

  - Greater Sage-grouse Statewide Monitoring (\$48,710)
  - Upland Game Bird Translocation and Monitoring (\$13,640)
  - Dusky Grouse Ecology and Management in Nevada (\$20,000)
  - Monitoring the Effects of Landscape-Level Treatments on Greater Sage-grouse within the Desatoya Mountains (\$18,000)
  - Measuring Corticosterone Metabolites in Greater Sage-grouse (\$25,000)
  - Estimating Sage-grouse Vital Rates within Nevada's Most Novel Habitats (\$22,500)

- Effects of Conventional Raven Control and Wildfire on Greater Sage-grouse within the Virginia Mountains (\$22,500)
- Monitoring Greater Sage-grouse and Habitat Post-Martin Fire (\$25,000)
- Bi-State Sage Grouse Coordinator (\$5,000)
- Columbian Sharp-tailed Grouse Restoration Project – Population Modeling and Publications (\$22,250)
- Response of Greater Sage-grouse to Vegetation Treatments in South Cave, Hamlin and Steptoe Valleys (\$7,500)
- Wildfire and Geomorphology Effects on Riparian Habitats and Related Restoration Implications (\$10,000)
- A Framework for Restoring and Conserving Great Basin Wet Meadows and Riparian Ecosystems (\$10,000)
- Eastern WMA Complex Weed Control (\$10,000)
- Post-Fire Upland Habitat Restoration - Tule Springs (\$12,500)
- Post-Fire Upland Habitat Restoration - Kane Springs (\$12,500)
- Quinn River Valley Habitat Enhancement - Vanderhoek Property (\$10,000)

**16.\* Commission Regulation 18-12, Amendment 2, 2018 - 2019 Upland Game and Furbearer Seasons and Bag Limits – Wildlife Staff Specialist Shawn Espinosa – For Possible Action**

The Commission will consider and may vote to amend regulations for upland game birds and mammals as well as furbearers for the 2019 season. This regulation will also include fall wild turkey seasons for 2019 and spring wild turkey seasons for 2020.

**17.\* Biennial Upland Game Release Plan for Fiscal Years 2020 and 21 – Wildlife Staff Specialist Shawn Espinosa – For Possible Action**

The Commission will review and may take action to approve the Department’s proposed biennial upland game release plan for fiscal years 2020 and 21.

**18. Reports – Informational**

**A. Department Activity Report – Secretary Wasley**

Secretary Wasley will provide a report on recent Department activities.

**B.\* Litigation Report – Senior Deputy Attorney General Bryan Stockton**

**C.\* Legislative Report - Update on the 80th Legislative Session (2019) – Commissioner East and Director Wasley**

An update will be provided on the 80th Legislative session.

**D. Conservation Partner Spotlight – Secretary Wasley – Informational**

An overview of a key conservation partner program will be shared with the Commission.

**E.\* Presentation of Fallon Naval Air Station Community Plans - Liaison Officer Robert Rule – For Information Only**

The Commission will be provided an update on the current status of the FRTC Modernization and conservation efforts with our partners in Northern Nevada.

**19. Committee Reports**

**A. Finance Committee Report – Committee Chairman Gil Yanuck – Informational**

The Commission will hear a report on the committee's recent meeting.

**B.\* Fiscal Year 2020 County Advisory Board Budget Requests – Committee Chairman Gil Yanuck – For Possible Action**

The Commission may approve an estimated amount of \$36,526 to be added to the reported cash balance on hand for County Advisory Boards to Manage Wildlife budgets for fiscal year 2020. Each County Estimate: Carson City \$4,250; Clark \$1,776; Douglas \$4,382; Humboldt \$2,290; Lander \$1,124; Lincoln \$4,589; Lyon \$1,457; Mineral \$4,946; Nye \$2,000; Pershing \$3,013; Washoe \$2,049; White Pine \$4,650.

\*The Finance Committee would like to recommend that a workshop be held during the lunch recess at the August 2019 meeting in Ely, Nevada to review the preparation of the County Advisory Board Budget.

**20. License Appeal – Kyle Thissell – For Possible Action**

Mr. Thissell is appealing the denial of his 2019 subguide license renewal.

**21. Future Commission Meetings and Commission Committee Assignments – Secretary Tony Wasley and Chairman Johnston – For Possible Action**

The next Commission meeting is scheduled for August 9 and 10, 2019, in Ely. The Commission will review and discuss potential agenda items for that meeting. The Commission may change the time and meeting location at this time. The chairman may designate and adjust committee assignments as necessary at this meeting.

**22. Public Comment Period**

Persons wishing to speak are requested to complete a speaker's card and present it to the recording secretary. Public comment will be limited to three minutes. No action can be taken by the Commission at this time; any item requiring Commission action may be scheduled on a future Commission agenda.

\*Support material provided and posted to the NDOW website, and updates to support material will be posted at ndow.org. Support material for this meeting may be requested from Recording Secretary Brandy Arroyo at (775) 688-1599; supporting material for this meeting is available for the public at the Nevada Department of Wildlife, 6980 Sierra Center Parkway, Ste 120, Reno, NV, 89511. In accordance with NRS 241.020 this agenda closes three days prior to the meeting date and has been posted on the NDOW website at NDOW.org and at the following Department of Wildlife offices: 1100 Valley Road, Reno, NV, 89512; 380 W. "B" Street, Fallon, NV, 89406; 815 E. Fourth Street, Winnemucca, NV 89445; 60 Youth Center, Elko, NV, 89801; 1218 N. Alpha Street, Ely, NV 89301; 744 S. Racetrack Road, Henderson, NV 89015; and 4747 W. Vegas Dr., Las Vegas, NV, 89108.

Notice to the Public: Nevada Department of Wildlife receives Federal Aid in Fish and/or Wildlife Restoration. The U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex, or disability. Individuals with hearing impairment may contact the Department at 775-688-1500 via a text telephone (TTY) telecommunications device by first calling the State of Nevada Relay Operator at 1-800-326-6868. Disabled individuals in need of special services should contact the Department prior to the meeting at (775) 688-1599.