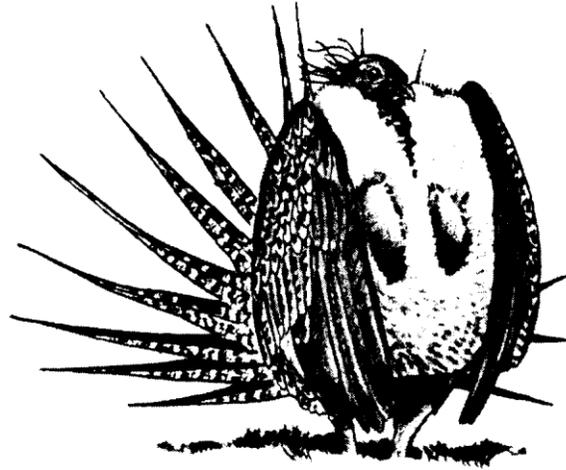


PROGRESS REPORTS: STRAWBERRY VALLEY SAGE GROUSE
RECOVERY PROJECT
2009



Presented to:
The Utah Reclamation Mitigation and Conservation Commission
Utah Division of Wildlife Resources
Uinta National Forest

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Progress Report: Strawberry Valley Sage Grouse Recovery Project

Prepared by:

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(URMCC)

Reporting Period:

January 2009 through March 2009

Research this quarter focused on monitoring flocking, movements, and mortalities. During the past quarter, many sage grouse, including resident and translocated grouse, have made movements to the migratory areas. Snow depths have greatly influenced sage grouse occupancy in Strawberry Valley. The majority of radio-collared birds found more available sagebrush habitat east of Strawberry Valley in the Fruitland area. Also, annual mortality of all radio-collared sage grouse in the project area was normal.

Resident population monitoring:

2008 resident birds

We began this quarter with 3 resident male sage-grouse and 2 resident female sage-grouse. By the end of the quarter, only the 3 male sage-grouse remained alive. The 2 females died due to unknown causes in the Wildcat area.

Annual mortality of resident males was 0% (0 of 3). Annual mortality of female residents was 100% (6 of 6; 1 died due to canid predation, 2 died due to avian predation, and 3 died due to unknown causes). The 2008 annual mortality rate of all resident sage-grouse in the project area was 66% (6 of 9).

Of the remaining 3 males, 2 were found near the Fruitland leks and 1 was found in Strawberry Valley.

2007 translocations:

Box Elder County (BEC) translocation

We began the 2008 mortality year monitoring 18 hens. Four hens have not been heard or located since the beginning of the year. These hens (4) will not be included in our mortality results.

By the end of the 2008 mortality year, 8 of 14 hens died (57%; 3 died due to canid predation, 2 died due to avian predation, and 3 died due to unknown causes). All 8 of these mortalities were found in the Fruitland/Currant Creek area.

The remaining 6 hens at the end of this quarter were found in winter habitat in the Fruitland area.

Parker Mountain (PM) translocation

By the end of the 2008 mortality year, we were unable to hear or monitor 7 females. These females (7) will not be included in our mortality results.

Annual mortality of 2007 PM hens was 5 of 10 (50%). Of the 5 mortalities, 1 hen died due to canid predation, 1 died due to avian predation, and 3 died due to unknown causes. Three mortalities were found in Strawberry Valley and 2 were found in Wildcat. All five of the remaining hens were found in the Currant Creek/Fruitland area.

Diamond Mountain (DM) translocation

By the end of the 2008 mortality year, we were unable to hear and monitor 5 females. For those reasons, these females (5) will not be included in our mortality results.

Annual mortality of 2007 DM hens was 4 of 11 (36%). Of the 4 mortalities, 2 hens died due to unknown causes, 1 died due to canid predation, and 1 died due to avian predation. No females died during this quarter.

Of the 6 hens remaining at the end of this quarter, all 6 were found in the Fruitland area where winter habitat was abundant and snow levels were low.

Deseret Land and Livestock (DLL) translocation

By the end of the 2008 mortality year, we were unable to hear or monitor 4 females. For those reasons, these females (4) will not be included in our mortality results.

Annual mortality of 2007 DLL hens was 10 of 14 (71%). Of the 10 mortalities, 2 died due to canid predation, 7 died due to unknown causes, and 1 died due to avian predation. No females died during the 4th quarter. The remaining 4 hens were found in the Fruitland/Currant Creek area.

2008 translocations:

Deseret Land and Livestock (DLL) translocations

Annual mortality rate of 2008 DLL hens was 4 of 17 (24%; 1 died due to canid predation and 3 died due to unknown causes). The remaining 11 hens were found in the Fruitland area.

Because of continued land use issues, we are unable to provide more-updated flocking information than what was reported in the previous quarterly progress report.

Conclusions:

Annual mortality rates of all 2007 translocated sage-grouse totaled 55% (27 of 49). This is 15% higher than the mortality rate in 2007 which was 40%. Of note in 2008 was the difference

in mortality rates between the 2007 and 2008 DLL translocated hens. There was a difference of almost 3 fold between 2007 mortality (71%) and 2008 mortality (24%). Further study into why this occurred is imperative.

It was very difficult to locate some sage-grouse due to inaccessibility of UDWR flights. The UDWR pilots were very busy with other projects and were unable to fit us in. This meant we were unable to do any searching for new leks from the air within the project area. We hope to be able to make those flights for leks and searching for birds during the next quarter.

Movements of resident and translocated grouse were somewhat localized during this quarter. Most migratory movements came in November and December of 2008.

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Reporting Period:

April 2009 through June 2009

Resident population monitoring and trapping:

2008 birds

At the end of this quarter one resident hen remained alive and on-air from 2008. We believe this hen nested in Co-op creek, because we documented her in the same location for at least 3 weeks. After finding her 1/3 of a mile from the nest site, we were unable to locate chicks. Upon trying to locate her nest, we were unable to locate even the nest bowl.

A total of 2 males from 2008 remained on air at the end of this quarter. They were found in the Fruitland area. No mortalities of 2008 resident males were recorded.

2009 birds

This spring we put forth a large effort to trap resident sage grouse, with a special focus on females. Unfortunately we were only able to capture 1 female sage grouse. We did, however, successfully capture and radio-collar 21 males. Our inability to access the valley due to deep and melting snow and ice was a problem for trapping hens that attended the lek early in the breeding season. In addition, limited access to Coleman's property made trapping females more difficult.

The only female was captured on private land owned by Joyce Bailey near an area of sagebrush that had been treated two years ago. It nested about 100 yards from where it was trapped. The hen was successful, hatching all 5 of her eggs. Only one chick remains with this hen and it has not yet reached recruitment age (50 days post-hatch).

In addition, movements of males have been the same as in years past. Most movements are localized with few to no long distance travels.

Lek counts and searching for new leks:

The high count for the Road Hollow lek in Strawberry Valley was 53. This is an increase of three males from last year. We were only able to make one count on the Fruitland leks (North Coleman and cement trough leks) before we were asked not to access that land through the Coleman property. UDWR employees continued to count the leks and had a combined high count of 23 males.

A few attempts were made to access different areas during the lekking season to find new leks, but we were unable to locate any birds strutting in new areas. We were also unable to obtain access to flights through the Utah Division of Wildlife Resources due to higher priority flights and inclement weather. This made it difficult to search from the air for new leks. However, on a flight that Randall Thacker (UDWR employee) was able to obtain, they saw two groups of 8 males strutting in different locations on the north end of the Coleman property. These potential lek sites will be checked next year to see whether they maintain their numbers and locations.

2007 translocations:

Box Elder County (BEC) Translocation

We ended this quarter with one hen from Box Elder County on air. We were unable to obtain a location from the ground for this hen, but we did hear her on a flight. She is located on private land east of Currant Creek. We also found one hen that died during this quarter due to canid predation, in the same area.

Parker Mountain (PM)

At the end of this quarter one 2007 PM hen was still alive. Again, we were unable to locate this hen from the ground due to the weak signal of her radio-collar. We were able to obtain a location from a fixed-wing aircraft. This hen remains in SV.

Diamond Mountain (DM)

We ended this quarter with two hens with functioning radio-collars. Both hens nested successfully, one on Tabby Mountain (where it nested the past two years) and one in Emma Park (where it was located last year). Unfortunately, we were not able to get to these hens soon enough to find nest locations due to access and deep snow. The hen on Tabby Mountain was found with 4 chicks, while the hen in Emma Park had one chick with her.

We located the nest of one other hen in Strawberry Valley from this group. She was flushed off the nest due to observer error. The nest had 7 eggs in it. She returned to the nest but was later flushed from her nest and it was depredated by a canid predator. The collar on this hen has since stopped transmitting. Nest initiation for this group was 100% (3 of 3). Nest success was 67% (2 of 3).

Deseret Land and Livestock (DLL) Translocation

There are no hens from this group with functional transmitters. We have discontinued searching for these hens.

Movements of 2007 birds:

With so few birds remaining there were not many movements to record. However, all 5 of the birds with collars still transmitting were found showing fidelity to the areas in which they were found last summer.

2008 Translocations

Deseret Land and Livestock (DLL)

At the end of this quarter, we were unable to hear 7 of the 14 hens from this group. These transmitters likely discontinued working due to diminished battery life. Of the other remaining 7, two were found in Strawberry Valley and five were located near the Fruitland/Currant Creek area. Because of private land issues we were only able to locate two hens that nested. One hen was found in Strawberry Valley. This hen was flushed off its nest of 8 eggs due to observer error. The nest was later depredated by ravens.

We found one other DLL hen that nested successfully. She was found with chicks near the Thunder Ridge airstrip, near Bandanna Ranch land. We did not find her soon enough to locate her nest. It appears that none of the remaining 5 hens initiated a nest.

Predator control efforts:

Efforts to control terrestrial predators were minimal. One fixed-wing flight was taken during the spring, wherein no red fox were killed or seen. However, quite a few coyotes both in and around the SV were removed. Additionally, a problem red fox found on lek island while trapping, where the majority of the strutting occurred this year, was never removed due to our inability to get Wildlife Services to the island. They did treat the area to remove ravens, focusing on landfills, feedlots, and other places where ravens were concentrated. This may or may not have helped overall predation of nests and chicks by ravens and other corvids.

Conclusions:

There are very few 2007 or 2008 translocated hens still on air. We knew that these radio-collars would start going off during the winter and early spring. Because of this, we re-doubled our efforts to capture male and female sage grouse. Nevertheless, heavy snows and private land issues prevented early access to these areas, making it difficult to capture additional hens. We did capture multiple males, which we hope will help us locate additional leks this spring. In addition, we plan to trap this fall. We hope to be able to find juvenile male and female birds that we will be able to trap more easily.

Mortality rates were relatively low during this quarter, compared to other years. This quarter and next quarter (July – Sept.) generally represent almost 75% of all given mortalities. Also, we are aware that nest initiation rates recorded this year were likely not representative of overall efforts, but given the issues already mentioned, we collected as much data as we could.

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Reporting Period:

June 2009 through Sept 2009

Resident Population Monitoring and Trapping:

2008 Birds

At the end of last quarter only three birds (1 female and 2 male) from those trapped in 2008 were still alive. During this quarter, none of those birds died. We located one hen in Co-op Creek, and we observed her on a nest repeatedly. Upon finding the hen off of the nest, we were unable to locate the nest bowl or any living chicks. She stayed the entire summer in the Co-op Creek area and later flocked up with six other birds.

We located the other two males in the Fruitland area, but we were unable to flush them due to landowner access restrictions. Both males had strong radio-signals and appeared to be moving within the same area.

2009 Birds

In the spring of 2009, we trapped and placed radio-collars on 22 birds (1 female and 21 male). We intentionally captured a large number of males, because we want to be able to locate new lek sites throughout the Strawberry Valley sage grouse population next spring.

The female nested, and five eggs successfully hatched. We observed five chicks with her, but only one of the chicks survived to recruitment age (50-days post-hatch). The hen and her chick have since moved into the Wildcat area. None of the 21 males collared this spring have died. With very little exception almost all of the males stayed relatively close to the lek where they were trapped.

Nest success for 2008 and 2009 resident females totaled 50% (1 of 2). From the one female that was successful, only one chick survived to recruitment age.

We began trapping again during this quarter with limited success. We successfully trapped and placed radio collars on two juvenile birds, one male and one female. Both of the birds were captured in the Co-op Creek area. We will continue trapping this fall and hope to deploy radios on an additional 16 birds.

2007 Translocations:

Parker Mountain (PM)

At the end of last quarter one 2007 PM hen was still alive. During this quarter we were unable to locate her due to a weak signal likely from diminished battery life of the radio-transmitter. Therefore, we no longer have any 2007 PM hens to monitor.

Diamond Mountain (DM)

At the end of the last quarter, three 2007 DM females were still alive. None of these females died during this quarter. One female is currently on Tabby Mountain, one can be found in Emma Park and the other is located in Strawberry Valley. The female on Tabby Mountain nested successfully, but we were unable to locate her until after the eggs hatched. When we found her, she had four chicks. All of those chicks survived to recruitment age. The female in

Emma Park also nested successfully. We found her with one chick that survived to recruitment age. The female in Strawberry Valley also initiated a nest. She was flushed off the nest due to observer error. The nest had seven eggs. She returned to it but was once again flushed from her nest by a canid predator. The collar on this hen has since stopped transmitting.

Box Elder County (BEC) Translocation

We started and ended this quarter with one hen from Box Elder County. We were unable to obtain a location for this hen from the ground, but we did hear her on a flight. She was always heard in the same general area without any notable movements. However, due to our inability to access some private land, we were unable to see if she had a brood or even attempted to nest. She is located on private land east of Currant Creek.

Deseret Land and Livestock (DLL) Translocation

There are no females from this group with functional transmitters.

Summary of 2007 Translocated Females:

At the end of last quarter five females were still alive. One out of the five hens could not be monitored due to private land issues and two others are no longer being monitored because the transmitter batteries have died. Of the two females we were able to monitor, both survived to the end of this quarter.

Nest success for 2007 translocated females totaled 75% (3 of 4). Of the three females that were successful, two raised at least one chick to recruitment age. A total of five chicks survived to recruitment age.

With so few birds remaining there were few movements to monitor. Nevertheless, all four of the hens with transmitting collars exhibited fidelity to the areas in which they were found last summer (1-Strawberry Valley, 1-Emma Park, 1-Tabby Mountain, 1-Fruitland). There was

one DM bird that nested last year on Tabby Mountain and did so again this summer. She has since moved to Trout Creek near the restoration area with all four of her chicks.

2008 Translocations:

Deseret Land and Livestock (DLL)

At the end of this quarter we had seven hens still alive, two in Strawberry Valley and five in the Fruitland/Currant Creek area. We were able to find two birds from the Fruitland area that successfully nested. One hen nested successfully somewhere near the Thunder Ridge airstrip, near Bandana Ranch land. We were unable to locate her nest, but we did observe her with three chicks that all survived to recruitment age. Another hen was located on Bandana Ranch with five chicks, three of which survived to recruitment age. This hen initially nested on private land, then moved to Bandana Ranch. The remaining three hens in the Fruitland area were never located from the ground, due to our inability to access the area. Therefore, we were unable to collect nesting information on these three hens.

We located one female in Strawberry Valley that initiated a nest. She was flushed off her nest of eight eggs due to observer error. That nest was later depredated by ravens.

The other hen located in Strawberry Valley apparently never initiated a nest.

Our estimates of nest success for 2008 DLL hens may not be representative of the entire group, because we were unable to access three of the seven birds. We were able to locate the other four birds. Nest success from these four females totaled 75% (3 of 4). Of the three females that were successful, two raised at least one chick to recruitment age. A total of six chicks survived to recruitment age.

Predator Control Efforts:

Efforts, during this quarter, by Wildlife Services to control terrestrial predators were minimal. However, in cooperation with them, we reported every red fox we encountered. We also discussed with them areas high in predator track density. In addition, poison eggs were set out in Fruitland and near the Road Hollow lek to kill ravens.

In a recent meeting with the Division of Wildlife Resources we discussed our long-term plan for population recovery and predator control. We discussed the need to keep doing predator control in the valley until the end of the breeding season of 2010 (July). After that, there would be a time of no predator control in the valley, which would allow us to see whether the population could sustain itself. From that point on, we will concentrate predator control efforts in the Fruitland/Tabby Mountain area in the migratory areas to the east. There have been numerous sightings of both coyote and red fox in this area and circumstantial evidence for mortalities of sage grouse by those terrestrial predators.

SVARM Local Working Group Meetings:

In September, we attended the field tour and meeting of the SVARM local working group. We provided an update for the group on sage grouse nest success, movements, predation, and current and future habitat improvements in Strawberry Valley. We also briefly discussed the future of the project. Our continued involvement in the local working group is crucial to their knowledge of population dynamics in the valley.

Sage Grouse Habitat Improvements:

Extensive efforts have also begun to improve 300 acres of sage grouse habitat near the Road Hollow lek. The habitat targeted for improvement was walked and marked with flagging. The UDWR and a contractor used two implements, a mower and an eley-chain to produce the desired mechanical treatment in the area. The overall objective was to decrease overall shrub canopy cover, with an emphasis on sagebrush, and to increase forb and grass abundance and diversity. The area is already rich in forbs and grasses; therefore no additional seeding was necessary. Areas of steeper slopes and greater rock cover were either left alone or treated with a mower. As nesting habitat does not appear to be limiting, this habitat improvement should greatly increase brood and summer use of this area close to the Road Hollow lek.

Also, as previously stated in this report we observed one 2007 DM hen that moved with her brood from Tabby Mountain to the treated areas in Trout Creek. We hope that resident and translocated sage grouse use of the treated areas will increase during the next year.

Conclusion:

Very few 2007 and 2008 translocated hens remain alive. We knew that these radio-collars would start to discontinue working during the winter and early spring. Due to these developments, we are making extensive efforts to capture additional birds during the next quarter. We will place radio-collars on any age or sex of sage grouse we capture. This is intended to aid us in locating new leks, determining habitat and population connectivity, and in preparing for the breeding season next spring.

In addition, according to our funding proposal we will work with the URMCC to develop any treatment options that may benefit sage grouse along the Strawberry River. We will also

monitor use of the areas treated for habitat improvements near the Road Hollow lek by sage grouse.

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Reporting Period:

October 2009 through December 2009

Resident population monitoring and trapping:

2008 birds

We began this quarter with three resident (2 males and 1 female) 2008 sage grouse. During this quarter none of these birds died. Of the two resident male sage grouse was found in Fruitland and one was on private land east of Currant Creek Reservoir.

The female that was in Co-op last quarter remained there and is in a flock with six other birds.

2009 Birds

When we began this quarter none of the birds we trapped in the spring had died totaling 22 resident (21 males and 1 female) 2009 sage grouse. This fall we trapped and placed radio-collars on an additional three birds (1 male 2 female). Of the three resident female sage grouse two are located in Co-op and one is located in SV near the lek.

During this quarter seven of the 22 males collared this spring died. We recovered three of the seven collars and found that one was likely killed by an avian predator and the other two by terrestrial predators (likely coyotes or red fox). This is very unusual to have seven birds die

in one quarter, especially this time of year. The complete cause is unknown, but we are investigating the situation to better understand what may have happened or whether it may continue to happen.

Of the remaining 16 resident male sage grouse, with very little exception almost all of the males stayed relatively close to the lek where they were trapped.

2007 translocations:

Diamond Mountain (DM) translocation

We began this quarter with two 2007 DM females still alive. One of these females died during this quarter in Emma Park. After recovering the radio-collar, the hen was apparently killed by an avian predator. The one remaining female sage grouse moved from Tabby Mountain to the Fruitland area.

Box Elder County (BEC) Translocation

We started and ended this quarter with one hen from Box Elder County. We were unable to obtain a location for this hen from the ground, but we did hear her on a flight. She was always heard in the same general area without any notable movements. However, due to our inability to access some private land, we were unable to see if she had a brood or even attempted to nest this summer. She is currently on private land east of Currant Creek.

Summary of 2007 Translocated Females:

We began this quarter with three female sage grouse still alive. During this quarter one of these females has died. Of the two remaining females one could not be monitored due to private land owner issues. The other hen is alive and is being monitored from the air in the Fruitland area.

2008 Translocations:

Deseret Land and Livestock (DLL)

We began this quarter with seven female sage grouse still alive. No hens died during this quarter, with two residing in Strawberry Valley and five in the Fruitland/Currant Creek area. Movements of all seven hens were limited and local. Recently however, two birds from Fruitland moved closer to Current Creek area.

SVARM Local Working Group Meetings:

In November, we attended the meeting of the SVARM local working group. We provided an update for the group on sage grouse nest success, movements, predation, and current and future habitat improvements in Strawberry Valley. We also briefly discussed the future of the project. Our continued involvement in the local working group is crucial to their knowledge of population dynamics in the valley.

Sage Grouse Habitat Improvements:

We will continue to monitor the sage grouse habitat improvement project performed during the late summer. We will assess winter use as well as nesting and brood rearing use in 2010. We expect that more hens will remain closer to the lek during this and subsequent years due to the improvement in the forb component and proximity of the treatment to the largest active lek in the area.

Conclusions:

Very few 2007 and 2008 translocated hens remain alive. We knew that these radio-collars would start to discontinue working during the winter and early spring. Due to these developments, we are making extensive efforts to capture additional birds during the next quarter. We will place radio-collars on any age or sex of sage grouse we capture. This is intended to aid us in locating new leks, determining habitat and population connectivity, and in preparing for the breeding season this spring.

In addition, according to our funding proposal we will work with the URMCC to develop any treatment options that may benefit sage grouse along the Strawberry River. We will also monitor use of the areas treated for habitat improvements near the Road Hollow lek by sage grouse.