Utah's Adaptive Resources Management
Greater Sage-grouse Local Working Groups

2012 Accomplishment Report

Photos by Todd Black

January 2013

Utah's Adaptive Resources Management Greater Sage-grouse Local Working Groups

Submitted to

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Preface

In 2010, the U.S. Fish and Wildlife Service (USFWS) designated greater sage-grouse (*Centrocercus urophasianus*, hereafter referred to as sage-grouse) as a candidate species for listing for protection under the Endangered Species Act of 1973 (USFWS 2010). A key factor in this decision was the determination by the USFWS that the regulatory mechanisms to ensure the continued existence of the species are lacking. This report summarizes the 2012 actions implemented by Utah's Adaptive Resource Management Greater Sage-grouse Local Working Groups (LWGs) to address species conservation threats identified by the USFWS (2010). The LWGs were facilitated by staff affiliated with the Utah Community-Based Conservation Program (CBCP). The report incorporates the information requested under 50 CFR Chapter IV, US Fish and Wildlife Service (USFWS) Policy for Evaluation of Conservation Efforts (PECE) When Making Listing Decisions (USFWS 2003).

The LWG conservation plans discuss the level of certainty that the management efforts identified and implemented will be effective. The LWG sage-grouse conservation plans, previous annual reports, and meeting minutes can be accessed at www.utahcbcp.org. In 2012 each LWG reviewed their conservation plan and updated sage-grouse threat matrixes.

Specific topics addressed in the LWG conservation plans included:

1. The nature and extent of threats to be addressed by the LWG's plans and how management efforts will reduce the threats described.
2. Explicit objectives for each management action contained in the plans and dates for achieving.
3. The steps needed or undertaken to implement management actions.
4. The quantifiable, scientifically valid parameters by which progress will be measured (e.g., change in lek counts, improved habitat conditions).
5. How the effects of the management actions will be monitored and reported.
6. How the principles of adaptive management resource management are being implemented.

In 2012 the CBCP worked closely with The Utah Governor's Office Task Force to develop the Strategic Plan for the Conservation of Greater Sage-grouse in Utah (Plan). Utah's Plan was designed to protect high-quality sagebrush habitat to address and ameliorate the threats facing the sage-grouse while balancing the economic and social needs of the residents of Utah through a coordinated program. The Utah Plan was built largely upon the efforts of LWGs to protect sage-grouse. Because of this early and ongoing assessment, the Task Force was fortunate to have a high level of knowledge about seasonal range, migration routes, and other factors known to be essential to maintenance of the species, all in the context of Utah's unique environments.

Executive Summary

The Utah Community-based Conservation Program (CBCP) encompasses the historical range of greater sage-grouse (*Centrocercus urophasianus*, hereafter sage-grouse) in Utah as identified in the 2002 Strategic Management Plan for Sage-grouse (Figure 1). This plan, originally approved by the Utah Wildlife Board on 1 June 2002, was revised in 2009 (Utah Division of Wildlife Resources [UDWR] 2009). The plan identified the need to organize local sage-grouse working groups (LWGs) to develop and implement voluntary sage-grouse conservation plans for specific management areas (Figure 1). The CBCP was intended to be a long-term collaborative effort to support LWG administrative needs. Since inception, the CBCP has been financially supported by UDWR, Utah State University Extension (USUEXT), private landowners, public and private natural resources management and wildlife conservation agencies and organizations.

In 2012 Utah Governor Gary H. Herbert chartered a cabinet-level and stakeholder task force to develop recommendations for a statewide plan for the conservation of sage-grouse. The task force was also instructed to weigh concerns regarding the effects of a listing on the continued economic health of the state. The task force met in open, public meetings from late February to October of 2012. In addition to the recommendations of the task force, the Governor's Office, through the Public Lands Policy Coordination Office, received comments and advice from other interested parties, including industry, environmental organizations, and county commissioners.

In 2013, the Strategic Plan for the Conservation of Greater Sage-grouse (Plan) was released for public review. The Plan protects high-quality habitat to sustain greater sage-grouse populations in the state and negate need for the listing of the species under the provisions of the federal Endangered Species Act (ESA). The Plan identified strategies to ameliorate the threats facing the sage-grouse while balancing the economic and social needs of the residents of Utah through a coordinated program which balances voluntary incentives for private, local government and School and Institutional Trust Lands Administration lands with reasonable and cooperative regulatory mechanisms on other state and federally managed lands. The Plan identifies specific Sage-grouse Management Areas (SGMAs) within each LWG conservation area (Figure 2). The SGMAs represent the best opportunity for high-value, focused conservation efforts for the species in Utah. This approach recognized current land uses as acceptable practices, and identified potential future uses which may cause conflict with the needs of the species. The sage-grouse populations within the SGMAs all lend themselves to increases through appropriate protection and habitat enhancements, so each SGMA identifies and maps areas on the landscape that provide these additional habitat enhancement opportunities (Opportunity Areas) for greater sage-grouse.

The Plan was based largely on LWG efforts to include the 2012 LWG threat matrix updates that are presented in this report. Implementation of the Plan will require enhanced communication and cooperative efforts among local, state, and federal agencies, working in concert with private interests.

In addition to participating as active contributors to the Utah planning process, the LWGs continued implementation of their sage-grouse conservation plans. The LWGs included representatives from state and federal agencies of land and resource management, non-governmental organizations, private industry, local communities, and private landowners.

In this report we summarize efforts of the LWGs to update local threat matrixes and implement the conservation strategies and actions outlined in their Plans. We also present and discuss

changes that will be implemented by the CBCP program to better assist in implementing the Utah Plan. These changes include staff and LWG areas of responsibilities.

Staff Changes

The major staff change involved Mr. Todd Black. Todd was one of the CBCP architects. In addition to facilitating four local working groups, he coordinated field logistics for our research program, and managed our long-term sage-grouse database. Todd accepted employment as the Wildlife Manager at Deseret Land and Livestock, Woodruff, UT, effective 1 December 2012. We are conducting a search for a replacement. The duties of the new staff member will be similar to those performed by Todd, with an additional emphasis on analyzing our long-term data base to provide information to document the impact of LWG conservation strategies on local populations. Todd will continue to facilitate LWGs until 30 June 2013 and assist in training of the new professional staff member.

Another staff change involved Dr. Nicole Frey. Dr. Frey accepted an appointment as Extension Assistant Professor with the USU Extension Service. In addition to new roles and responsibilities, Dr. Frey will continue to facilitate the southern Utah LWG to include transitioning to support the Parker Mountain/Emery County LWG.

Lastly, Terry Messmer was appointed the Director of the Berryman Institute (BI) replacing Johan du Toit. The Berryman Institute is a national organization based in the Department of Wildland Resources at Utah State University. It is named after Jack H. Berryman to honor his distinguished career in wildlife management. The Berryman Institute is dedicated to improving human-wildlife relationships and resolving human-wildlife conflicts through teaching, research, and extension.

Current CBCP Staff

Project Director:

Terry A. Messmer, Professor and Director, Jack H. Berryman Institute, UMC 5230, Utah State University, Logan, Utah 84322-5230. Phone 435-797-3975, Fax 435-797-3796, E-mail terry.messmer@usu.edu

Project Staff:

S. Nicole Frey, Extension Assistant Professor, Jack H. Berryman Institute, Department of Wildland Resources, Utah State University (housed in the Department of Biology – Southern Utah University, Cedar City).

Todd Black, Community-based Conservation Extension Specialist, Utah State University, Logan.

Lorien Belton, Community-based Conservation Extension Specialist, Utah State University, Logan.

Rae Ann Hart, Program Assistant, Department of Wildland Resources, Utah State University, Logan.

Funding:

In 2012, the CBCP program was largely supported by funding received through USUEXT under the Berryman Institute. This funding supported salary and benefits Dr. Nicole Frey, Mr. Todd Black, Ms. Rae Ann Hart, and office operations ($163,000). Additional support for CBCP staff, travel and LWG administration was provided by grants and contracts from the UDWR ($49,000) and the Intermountain West Joint Venture ($15,000). Research support ($292,800) was provided by the Utah Watershed Initiative ($109,000), the Natural Resources Conservation Service (NRCS) Sage-grouse Initiative (SGI) and Pheasants Forever, Inc. ($66,000), the US Bureau of Land Management (BLM, $45,000), USU Extension ($10,000 – internships), USU Experiment Station ($10,000 seed grant), PacifiCorp ($40,000), Utah Department of Agriculture and Food ($7,800), and the Rich County Coordinated Resources Management (CRM) plan ($5,000).

Legal Authority

The LWG Plans implement Utah's Sage-grouse Strategic Management Plan (Strategic Plan) that was approved by the Utah Wildlife Board in 2002 and revised in 2009 (UDWR 2002, revised 2009). These plans also support the Utah Plan.

Project Goals

1. Protect, enhance, and conserve Utah sage-grouse populations and sagebrush-steppe ecosystems.
2. Establish sage-grouse in areas where they were historically found and the current sagebrush-steppe habitat is capable of maintaining viable populations (Utah Sage-Grouse Management Strategic Plan 2002, 2009).
3. Protect, enhance, and conserve other sensitive wildlife species that inhabit Utah sagebrush-steppe ecosystems.
4. Sustain and enhance socio-economic conditions in affected local communities.
5. Complete actions that make listing sage-grouse as threatened or endangered unwarranted and/or assist in recovery if the species are listed.
6. Increase local stakeholders and community involvement and ownership in the species conservation planning processes.
7. Increase LWGs awareness, appreciation, and the application of the use of science in making land use and population management decisions.

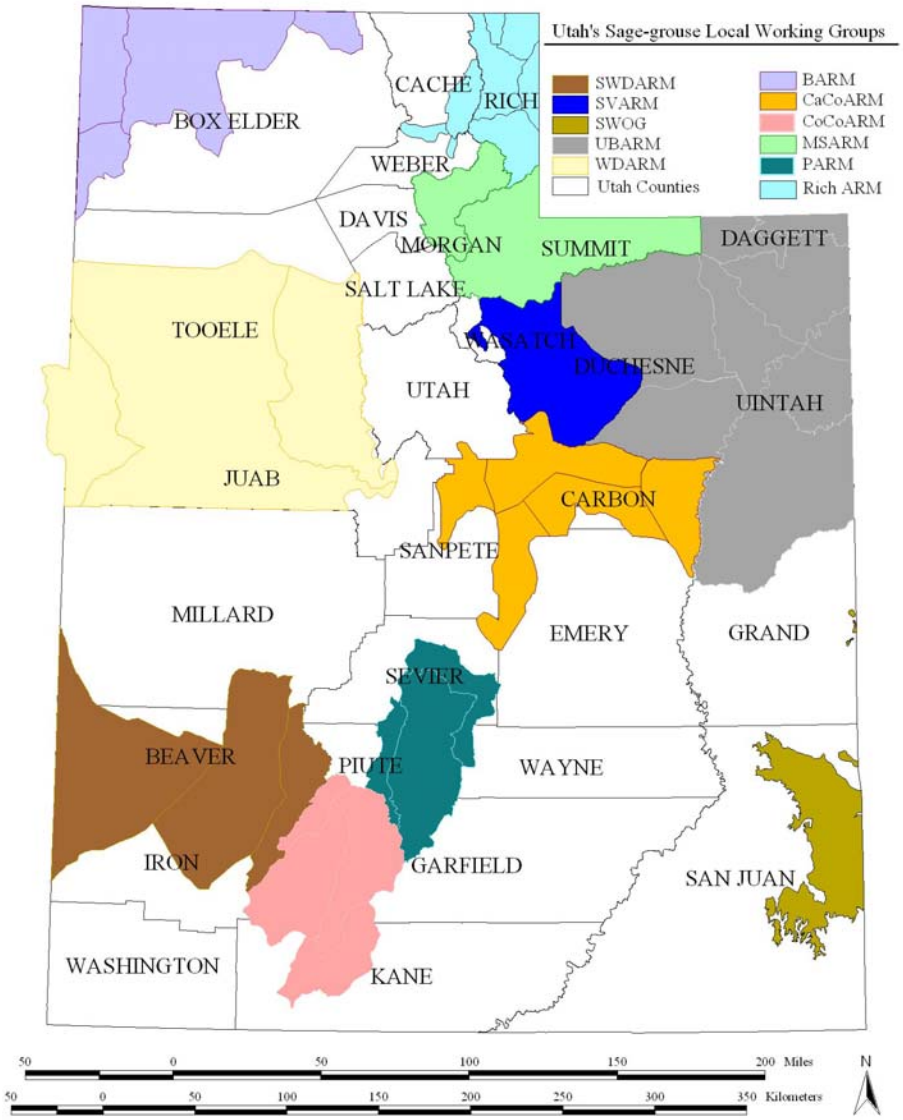

Figure 1. Utah Sage-grouse Conservation Areas, Utah Strategic Management Plan for Sage-grouse (UDWR 2009).

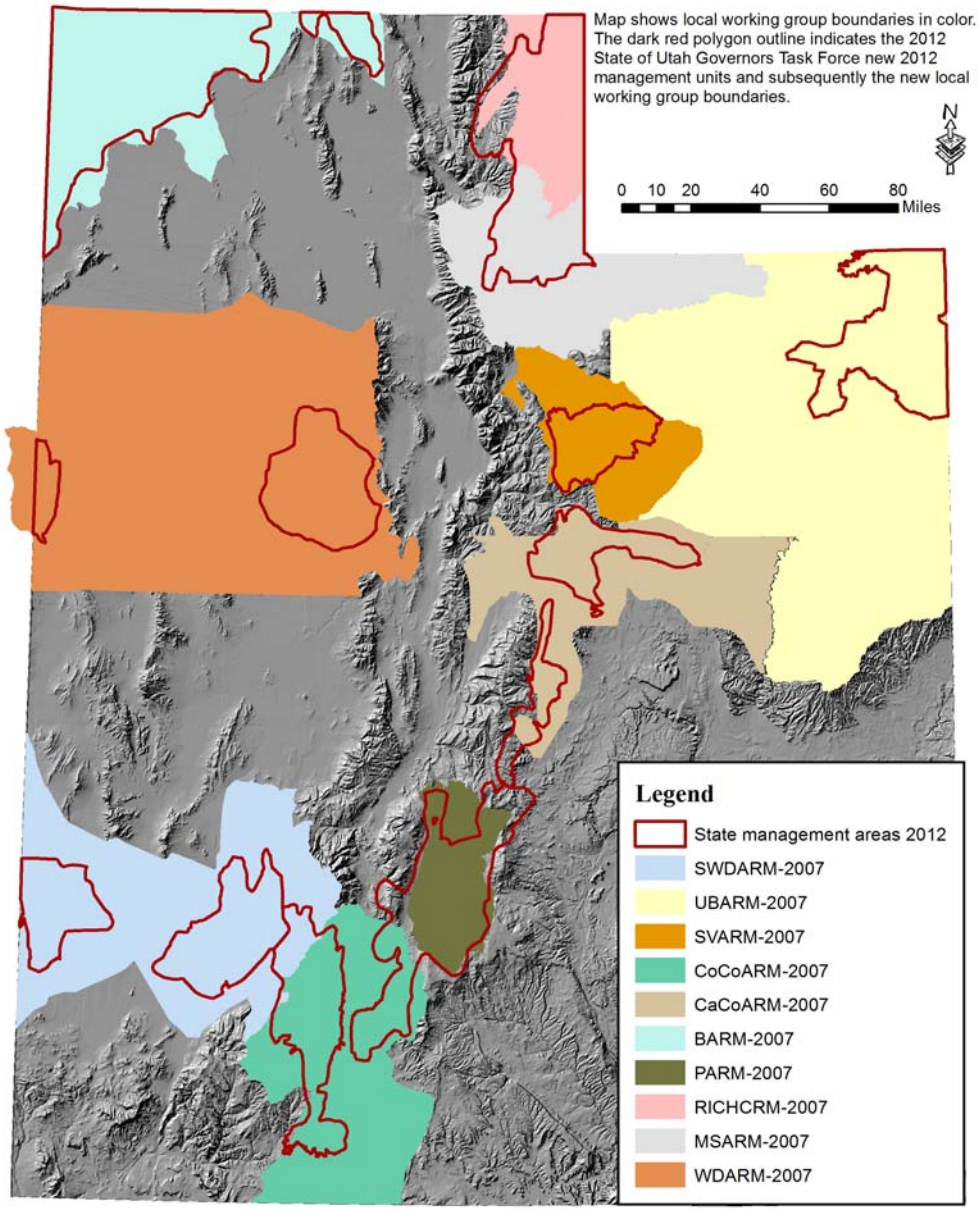

Figure 2. Location of Sage-grouse Management Areas (SGMAs) within Utah Sage-grouse Conservation Areas. The SGMAs (outlined in red) represent the best opportunity for high-value, focused conservation efforts for the species in Utah. This approach outlined in the Utah Plan recognized current land uses and being compatible with species conservation, and identified potential future uses which may cause conflict with the needs of the species. The sage-grouse populations within the SGMAs all lend themselves to increases through appropriate protection and habitat enhancements, so each SGMA identifies and maps areas on the landscape that provide these additional habitat enhancement opportunities (Opportunity Areas) for greater sage-grouse.

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Box Elder County Adaptive Resources Management (BARM) Sage-Grouse Local Working Group

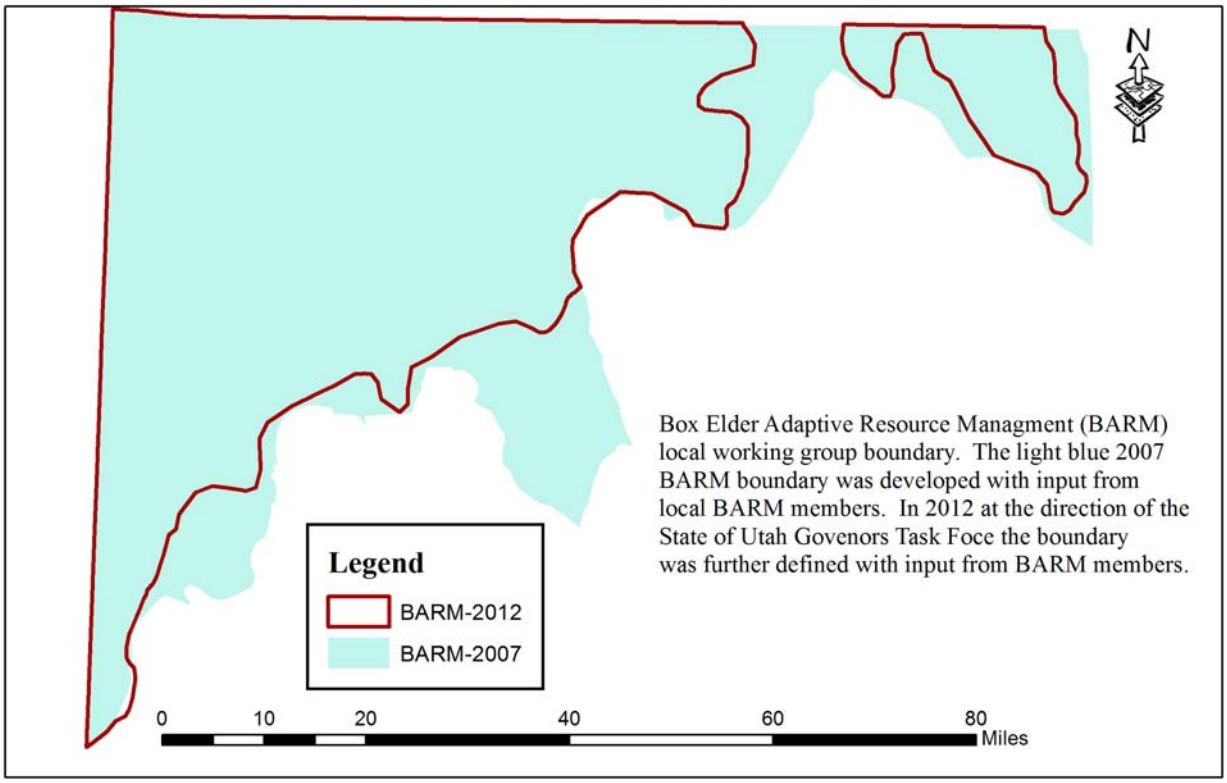

Figure 3. The Box Elder Adaptive Resource Management (BARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.

The Box Elder Adaptive Resource Management Plan (BARM) Sage-grouse Local Working Group (LWG) was organized in 2001. The group is currently facilitated by Mr. Todd A. Black. The BARM is comprised of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals.

In 2011, BARM was incorporated into the newly formed West Box Elder Coordinated Resource Management (CRM). The CRM plan provides overall direction and guidance for habitat projects within the conservation area and SGMA. The CRM established a sage-grouse subcommittee as part of the plan. The committee meets 2-3 times per year to address and discuss sage-grouse specific issues of concern, management actions, and strategies. The subcommittee reports these to the CRM. Todd Black is the sage-grouse committee representative to the CRM group. He will continue in this capacity until 30 June 2013. At this time, these duties will be reassigned to another staff member.

In 2012, the subcommittee met twice to review and discuss updating maps and boundaries and progress and changes to the LWG plan and revisions to the 2009 State of Utah Greater Sage-grouse Strategic Management Plan as proposed by the Utah Governor's Task Force.

Additionally, the group reviewed and made changes (see below) to the LWG Summary of Threats to local sage-grouse populations from the 2006 BARM plan.

Description of Area and General Population Information

The CRM encompasses western Box Elder County, from the Snowville area west to the UT/NV border and south to the shore line of the Great Salt Lake. Sage-grouse habitat in this area is broken down into 3 sub regions, the Grouse Creek, Pilot, and Raft River range. See http://utahcbcp.org/files/uploads/BARMSAGRPlan_Final.pdf for maps and figures.

Although our knowledge of sage-grouse populations in the area is incomplete, research efforts in the area continue to map sage-grouse movements and habitat-use patterns in the Grouse Creek and Raft River Mountains. These research efforts have identified important brooding and winter areas.

2012 Conservation Strategies and Actions

In 2012 the LWG/CRM devoted a substantial effort engaged in conservation planning processes for sage-grouse. This included internal discussions that contributed to revisions of both the threats matrix of the local plan (Table 1) and assisting with the Governor's Task Force sage-grouse planning processes. The CRM and Box Elder County Commissioners provided comments on the plan and two CRM members participated as members on the Task Force. In addition, group members and the facilitator attended meetings and provided input to the Task Force.

Other activities included:

- Continued work with Box Elder County Commissioners to incorporate sage-grouse and other wildlife into county plans.
- Field tours with NRCS SGI biologist Tammy Koldyke and others worked to identify and contact landowners interested in doing proactive sage-grouse habitat work on their properties. These have subsequently developed into 2 projects focusing on the threats of pinion and juniper encroachment and wet meadow restoration projects.
- A joint field tour with the Morgan and Summit Counties sage-grouse LWGs sage-grouse in June 2012.
- A field tour at the request of the Box Elder County Commission conducted May 2012 with BLM state and regional directors Juan Palma and Kevin Oliver and other field office staff to discuss major threats and concerns to sage-grouse and sage-grouse habitat on BLM lands.

Project and Research Highlights

In 2012 USU initiated a major research project to map the ecology of sage-grouse populations in the Grouse Creek, Raft River, and Pilot Mountain sage-grouse management sub-units. The annual reports for this research can be found on-line.

See research project reports:
http://utahcbcp.org/files/uploads/boxelder/GrouseCreek2012AnnualReport.pdf
http://utahcbcp.org/files/uploads/boxelder/ParkValley2012AnnualReport_8_29_12.pdf

Revision of Threat Matrix and Strategies Sections of Local Plan

The LWG revised the threat matrix in a series of meetings held in 2012. Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the chart was considered separately. Several threats were modified and the levels of the threat were adjusted accordingly. See original Threat Matrix in the 2006 plan http://utahcbcp.org/files/uploads/BARMSAGRPlan_Final.pdf and the modified/revised Threat Matrix table below.

Map Revisions

As part of the Governor's Task Force process, statewide maps for sage-grouse management areas (SGMAs) were developed. The maps for the areas occupied by sage-grouse in the CRM/LWG area remained fairly consistent over the process with a few minor changes from the 2006 plan. The CRM/LWG group agreed with and approved these changes as they more accurately reflect sage-grouse movement areas with current research efforts and available sage-grouse habitat. The CRM/LWG will continue to work with UDWR and other agencies to modify and improve these maps as more information becomes available.

Summary of Major Issues and/or Concerns

The CRM/LWG will continue to work to implement their conservation plan for West Box Elder County. The sage-grouse subcommittee will remain an important participant in the overall plan. Much remains to be addressed with the map and identifying on a finer scale occupied, unoccupied, or potential habitats. Key species conservation concerns in the area remain habitat loss and fragmentation because of wild fires and invasive weeds.

Table 1. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the BARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

Threat	Reduced population size	Population distribution	Reduced breeding habitat quality	Reduced late summer/fall habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations and sub-populations
Altered water distribution	-	Very High	Very High	High	Low	Low	Low
Prolonged drought and extreme weather shifts	Medium	Medium	Medium	High	Low	Low	Low
Power lines and other tall structures	-	Medium	Medium	Medium	-	Medium	-
Second home and cabin development	-	Medium	Medium	Medium	Medium	Medium	Medium
Excessive use of existing roads or newly developed roads	-	Medium	Medium	Medium	Medium	Medium	Medium
Existing and new fences	-	Medium	Medium	High	Low	Low	Low
Renewable and non-renewable energy development	-		Medium	Medium	-	Low	Low
Incompatible vegetation management practices	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Hunting	Medium	Medium	-	-	-	-	-
Incompatible OHV and other recreation uses	Medium	Medium	High	High	High	Medium	Medium
Invasive/noxious weeds	Very High	Very High	Very High	High	High	Medium	Medium
Parasites and disease	Medium	Medium	-	-	-	-	-
Predation	Very High	High	-	-	-	-	-
Wild fire	-	Very High	Very High	Very High	Very High	High	Medium
Pinyon-juniper encroachment	-	-	High	High	High	High	-
Incompatible grazing of wild and domestic ungulates	-	-	High	High	Low	Low	Low
Conversion of agriculture	-	-	Low	Low	-	-	-

Castle Country Adaptive Resources Management (CaCoARM) Sage-grouse Local Working Group

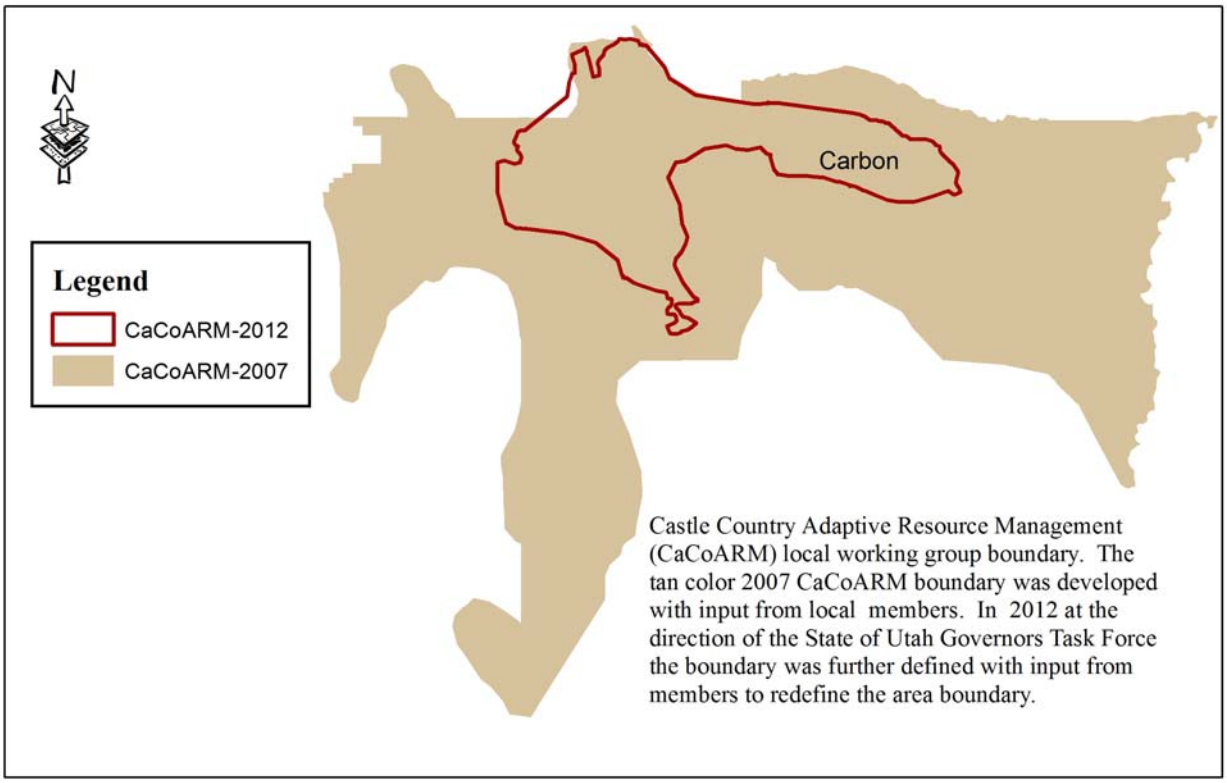

Figure 4. The Castle Country Adaptive Resource Management (CaCoARM) Sage-grouse Local Working Group and new Sage-grouse Management Area. The SGMA include parts of Carbon County.

The Castle Country Adaptive Resource Management Plan (CaCoARM) Sage-grouse Local Working Group was organized in 2004. This LWG is facilitated by Mr. Todd A. Black. The CaCoARM consists of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals. In 2012 the LWG met twice to review and discuss updating maps and boundaries and progress and changes to the LWG plan and revisions to the 2009 State of Utah Greater-sage-grouse plan as proposed by the Utah Governor's Task Force. Additionally, the group reviewed and made changes (see CaCoARM) to the Summary of Threats to local sage-grouse populations from the 2006 CaCoARM sage-grouse plan.

Description of Area and General Population Information

The CaCoARM conservation area encompassed occupied sage-grouse habitats in Carbon and Emery Counties with portions of Utah and Sanpete County. Sage-grouse habitat in this area is naturally fragmented by both geology and topography. The habitats have been classified into 5 sub regions; the Sanpete, Taviputs, Emma Park, Gordon Creek and Manti. See http://utahcbcp.org/files/uploads/carbon/CaCoARM_final-01-07.pdf for maps and figures.

Research and monitoring efforts in this area have contributed to increasing the LWG knowledge of sage-grouse ecology. This information proved important in Task Force deliberations. Based on this information, occupied sage-grouse habitats in Emery County which were originally part of the CaCARM LWG have been included in the Parker Mountain - Emery Sage-grouse Management area.

2012 Conservation Strategies and Actions

In 2012 CaCoARM completed revisions of the threats matrix contained within the LWG plan (Table 2). The LWG also assisted in the Governor's Task Force planning processes by providing timely reviews of maps and strategies. In addition, LWG members and the facilitator attended meetings and provided input during Task Force meetings.

Some of the highlights addressing actions and strategies from the 2006 plan in 2012 included:

- Field tours with NRCS SGI biologist to identify and contact landowners interested in doing proactive sage-grouse habitat work on their properties. These have subsequently developed into two projects focusing on the threats of pinion and juniper brood rearing habitat, planting forbs into old crested wheat plantings.
- Continued participation in the Bill Barrett Corporation and BLM Taviputs planning group.

Project and Research Highlights

The UDWR continued monitoring sage-grouse movement patterns on Emma Park and Taviputs Plateau. This monitoring effort was made possible with funding provided by the Bill Barrett Corporation.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings held in 2012. Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the chart was considered separately. Several threat rankings were modified (Table 2). (See original Threat Matrix in the 2006 plan http://utahcbcp.org/files/uploads/carbon/CaCoARM_final-01-07.pdf and the modified/revised threats.

Map Revisions

During the Governor's Task Force process major changes were made to original maps of the CaCoARM sage-grouse occupied areas contained in the 2006 plan. These changes were made based on information contained in the East Taviputs EIS (Bill Barrett Corporation and the BLM), input from the Counties, and connectivity of habitat between the Strawberry (to the North and West) and Parker Mountain (to the South) sage-grouse populations. The LWG and the County were supportive of the changes made to the map. The LWG will continue to work with UDWR and other agencies to modify and improve these areas as more information becomes available and is needed.

Summary of Major Issues and/or Concerns

The new CaCoARM LWG area will include the Carbon SGMA. This SGMA includes part of Carbon, Emery, Utah, and Sanpete Counties. Because of the energy development footprint, Lorien Belton will transition in as the facilitator for this group in 2013. Lorien has extensive experience working with energy interests in the Uintah Basin. The larger portion of the Emery County which was originally included in the CaCoARM LWG will be facilitated as part of the Parker LWG. We anticipate that we will hold joint and individual meetings with both groups.

Table 2. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the CaCoARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

Threats	Reduced population size	Population distribution	Reduced lek habitat quality	Reduced breeding habitat quality	Reduced late summer/fall habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations and sub-populations
Hindrance of ability to maintain and implement local management decisions	High	High	High	High	High	High	High	High
Power lines and other tall structures	Medium	Medium	High	Medium	Medium	Medium	Medium	Medium
Renewable and non-renew-able energy development	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Roads	Low	Medium	Medium	Medium	Low	Medium	High	High
Prolonged drought and extreme weather shifts	High	-	Low	High	High	High	-	-
Lack of proper range management	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium
Incompatible fire management practices	-	High	High	High	Low	High	High	High
Incompatible livestock grazing management	-	Low	Low	High	High	Low	-	-
Incompatible OHV and recreation	-	Medium	Medium	Medium	Medium	Low	Low	Low
Invasive/noxious weeds	-	Medium	Medium	Very High	Very High	High	Medium	Low
Parasites and disease	High	High	-	-	-	-	-	-
Predation	Very High	High	-	-	-	-	-	-
Vegetation management	-	High	High	High	High	High	High	Medium
Pinyon-juniper encroachment	-	Medium	High	Medium	Medium	High	High	High
Incompatible grazing of wildlife horses	-	-	High	High	High	High	-	-

Color Country Adaptive Resources Management (CCARM) Sage-grouse Local Working Group

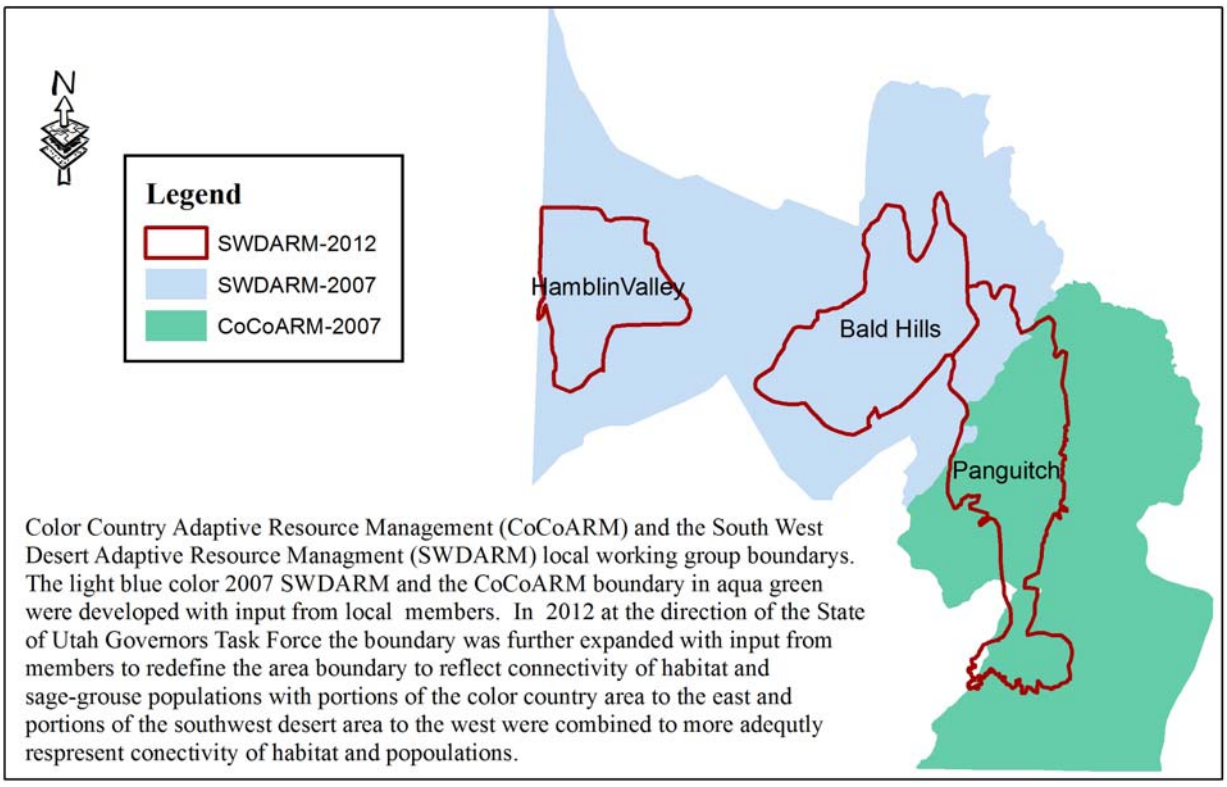

Figure 5. The Color County Adaptive Resource Management (CCARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.

The Panguitch Management Area is located in southern Utah, in Kane, Garfield, Paiute and Wayne Counties, incorporating more than a dozen, often connected leks. The group is facilitated by Dr. Nicki Frey. Due to the population exchange throughout this Management Area, and its incorporation of the southern-most sage-grouse lek, it is considered an important population for Utah.

This population uses a series of leks throughout the habitat area, with some males visiting more than one lek per season. The population is distributed north-south in a series of linked valleys and benches, and constrained by mountains and canyons. There is a large range in the number of males in attendance among these leks. Movement of sage-grouse from one valley or bench to another among seasons is necessary to meet their seasonal habitat requirements in the highly variable annual weather conditions of this region. Movements among valleys are not present in each group of sage-grouse, and not all used areas are known to managers.

One of the main purposes of our LWG plan is to provide a framework of strategies and associated actions that can be implemented to abate threats, address information gaps, and guide monitoring efforts. Several other documents and publications provide recommendations and guidelines for management of sage-grouse populations and their habitats, many of which were

reviewed in the Introduction of our Plan. Strategies developed by CCARM were designed to be specific to the local area while taking into consideration the guidelines at a range wide level.

The CCARM meets every other month, more frequently if necessary. In the fall of 2011, members of CCARM developed a short list of action items to focus their efforts on in 2012. The strategies and actions that were addressed in the past year are provided below. Additionally, CCARM participated in 2 consultation activities in 2011. Members of CCARM assisted in developing the Panguitch SGMAs maps and management plan for the Governor's Task Force planning process, through monthly meetings and e-mail correspondence. Additionally, because of our involvement with the Alton/Sink Valley sage-grouse population management and research, we assisted with the BLM's Alton Sink Valley EIS process, and continue to do so. The process is currently being spear-headed by SWCA, with regular consultations with our CCARM working group.

2012 Conservation Strategies and Actions

Strategy: Reduce threat of predators on sage-grouse over ten-year period.

Action: Avoid creating or improving raptor-nesting habitat in sage-grouse habitat. Remove raptor perches when possible.

The current concern regarding raptor populations in sage-grouse habitat is focused on the lease proposal for coal mining in the Sink Valley area. To address this concern, we provided several recommendations and strategies to avoid and remove raptor nesting habitat and raptor perches, and decrease road-kill that would increase raptor activity in the area of mining activities. The UDWR continues to consult with Department of Transportation and the BLM to develop partnership opportunities to reduce the impact of increased road traffic as a result of mining activities.

Strategy: Improve age distribution of plants within sagebrush-steppe communities by 2016.

Action: Coordinate among agencies and landowners to fund implementation of projects and monitoring.

The CCARM members collaborated to introduce habitat treatments project proposal to the Utah Partners for Conservation Development. Furthermore, we have proposed important habitat improvement areas that could be addressed through the Alton Coal EIS mitigation process.

Strategy: Increase participation of public and private landowners within the Resource Area.

Action: Develop partnerships with landowners and interest groups to increase visibility of sage-grouse management.

Action: Host open houses, field tours, and presentations.

Our facilitator, Nicki Frey, developed a greater sage-grouse education presentation for the Upper Sevier River Watershed Management Group's Natural Resource Days. Dr. Frey presented an interactive program to over 500 elementary school children, introducing them to sage-grouse natural history and conservation strategies.

Project and Research Highlights

With the introduction of Alton Coal LLC's coalmine in Sink Valley, we stopped conducting research on sage-grouse in the area. However, CCARM continues to be interested in the

relatedness among different lekking populations, winter habitat use locations, and responses to habitat treatments throughout our management area. In 2012 the BLM funded a new project to initiate a ground survey and GPS telemetry study on the sage-grouse in the CCARM area. In particular, we will conduct bird dog surveys to determine sage-grouse winter use of areas we have long suspected of harboring grouse, but have never had the opportunity to confirm. Additionally, we will deploy 6 GPS transmitters to begin the process of answering the questions of relatedness and movement patterns among our grouse populations.

Revision of Threat Matrix and Strategies Sections of Local Plan

In addition to these activities, CCARM members updated our threats matrix from 2005, in response to habitat and human development changes in the area (Table 3).

Map Revisions

During the Governor's Task Force process major changes were made to the CCARM sage grouse occupied areas from the 2006 plan. The change reflect current known occupied habitats and areas where there is the potential to expand the habitat base. The CCARM working group will continue to work with UDWR and other agencies to modify and improve these areas as more information becomes available and is needed.

Summary of Major Issues and/or Concerns

The Alton Coal Mine will result in direct impacts to birds that inhabit this area. The CCARM will continue to work with all partners to monitor sage-grouse response and identify, implement, and evaluate mitigation opportunities.

Table 3. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the CCARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

	Aspects of Sage-grouse population in the CoCARM Resource Area							
Threat	Reduced population size	Population distribution	reduced lek habitat quality	Reduced nesting/early brood-rearing habitat quality	Reduced summer/late brood-rearing habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations & sub-populations
Enhanced native and domestic predators	High	High	High	High	High	High	High	High
Recreational use	Medium	Medium	Medium	High	High	High	Medium	Medium
Invasive/alien vegetation species	High	High	Medium	Very High	High	Medium	High	High
Concentrated wildlife and/or livestock use	Medium	Medium	Medium	High	High	Medium	Medium	Medium
Fire and vegetation management	High	Medium	Medium	High	High	High	High	High
Development of roads or utilities	High	Medium	Medium	Very High	High	High	High	High
Lack of communication among public parties	Medium	Medium	Low	High	Medium	Medium	Medium	Medium
Diseases and parasites	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium
Alternative land uses (mining, wind power, water development)	High	High	Medium	High	High	High	High	High
Dramatic weather events	Low	Low	Medium	High	High	High	High	High

Morgan-Summit Adaptive Resources Management (MSARM) Local Sage-grouse Working Group

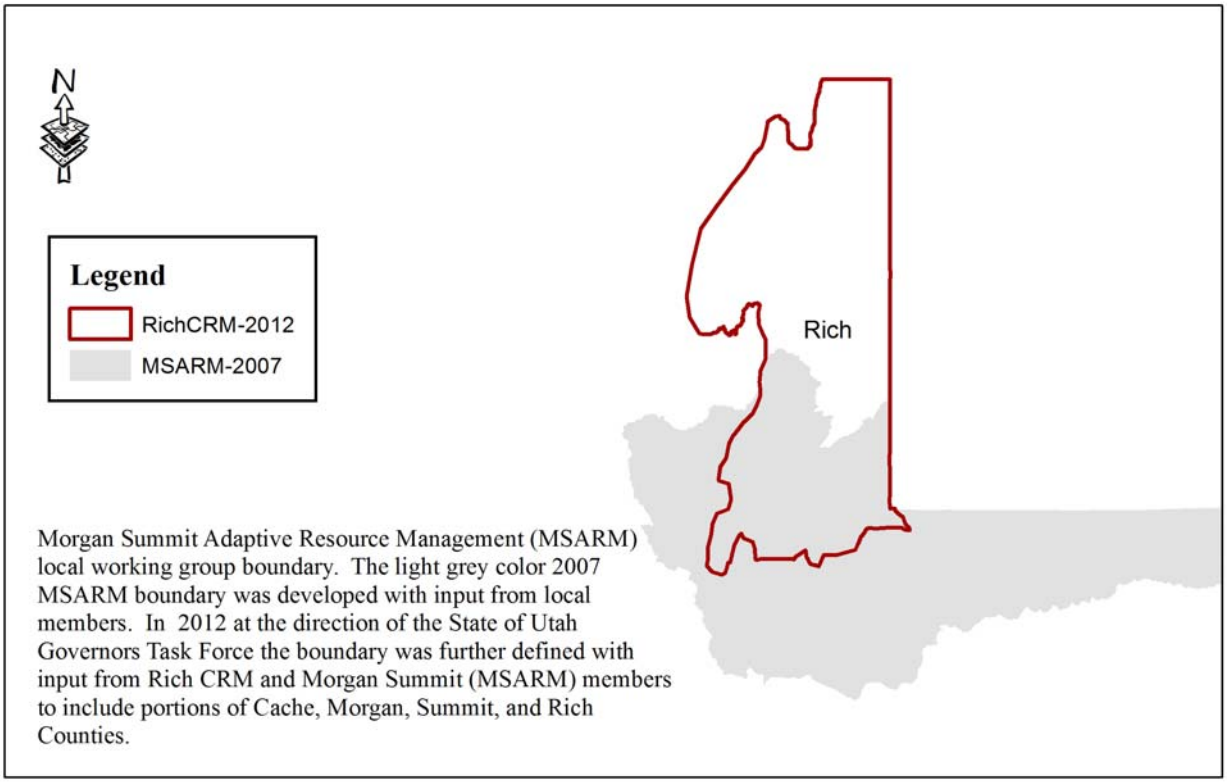

Figure 6. The Morgan-Summit Adaptive Resource Management (MSARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). The MSARM has been incorporated into the Rich-Morgan-Summit SGMA.

The Morgan-Summit Adaptive Resource Management (MSARM) sage-grouse local working group is facilitated by Ms. Lorien Belton. The group met four times in 2012, with several additional meetings of subgroups to address specific issues. The group continues to meet on a regular schedule to review and update their conservation plan.

This year the LWG outlined research and information needs in advance of implementing projects. The focus of specific projects has primarily centered on the Henefer-Divide lek, with direct mortality threats being addressed through public information signage. The group continued to work to expand these efforts to increase awareness of grouse that lek on or near the highway. Future projects will likely address fence collisions and the behavior of visitors to the lek, as well as working with local landowners to begin habitat improvement work.

Description of Area and General Population Information

The LWG area includes all of Morgan and Summit Counties. The two counties consist largely of privately-owned land, particularly where sage-grouse are found. Sage-grouse habitat in these areas occurs at higher elevations and is usually more mesic than some of Utah's other sage-grouse areas (Note: during 2011-2012, the area experienced a severe drought.). Although our knowledge of sage-grouse populations in the area is incomplete, the UDWR believes the birds in this area are connected to populations in Rich County and southwestern Wyoming. During the development of the Utah Plan, maps of the MSARM area were combined with the Rich County area to reflect this population connectivity. The exact boundaries of these maps are still being finalized.

2012 Conservation Strategies and Actions

The MSARM group continued to develop projects and conduct outreach according to the revised strategies and actions in the local conservation plan. In the upcoming year, particular focus will be placed on:

- Continue to develop proposals for private lands projects to improve sage-grouse habitat where needed
- Continuing to consider funding opportunities for research on local sage-grouse populations
- Working to implement public information and outreach activities identified in the revised strategies and actions
- Revise the local conservation plan to address new information
- Continue efforts to engage and assist counties in sage-grouse planning processes, particularly with respect to county-level participation in the governor's sage-grouse planning efforts
- Work to expand private landowner awareness of sage-grouse issues in the MSARM area and encourage use of SGI funds for project implementation, where appropriate.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings extending through the past year and a half (Table 4). Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the chart was considered separately. The group debated whether additional information was known, or if conditions had changed from when the plan was written, when considering adjustments to any threat level. Numerous threat levels were adjusted accordingly. Some of the key adjustments to the threat matrix included:

- Addition of a separate column labeled "Lek Quality/Existence"
- Increasing the potential threat level posed by invasive annual grasses, specifically bulbous bluegrass, in winter habitat
- Lowering the stated threat level potentials from roads and energy development, to more accurately reflect pressures on existing populations and habitats

- Increasing the threat levels associated with sagebrush removal on specific aspects of sage-grouse life history
- Clarification of how threats and aspects of sage-grouse life history were stated in the chart

Map Revisions

During the Governor's Task Force planning process, as noted previously, draft statewide maps for sage-grouse management areas were developed. Sage-grouse populations from Morgan and Summit counties were included in the Rich County management area. The areas outlined differ from the best understanding of actual habitat use areas by sage-grouse for several reasons. First, they include both "opportunity areas" and known habitat areas, making the boundaries slightly different than the existing working group boundaries and from current "occupied habitat" maps based on UDWR mapping work, which previously formed the basis of the group's working area. Second, because the intent of the task force process was to focus sage-grouse efforts on areas where the most value could be obtained for work done in those areas, some known sage-grouse areas now fall outside the boundaries of those draft maps. Specifically, leks and associated habitat in the Kamas area falls into that category. The MSARM working group will move into the future working with two sets of maps: understanding that the Governor's Task Force process provided strong direct for focused conservation efforts, MSARM will target habitat and population work in the management area boundaries. However, the exact details of populations in the MSARM area are still unknown, largely due to the high percentage of private land in the area. As increased landowner involvement and more research provides an avenue to potentially identify new or larger populations, and connectivity between populations, MSARM will also continue to work to improve understanding of sage-grouse populations inside and outside the boundaries of the current state draft management areas, in order to increase the accuracy of UDWR habitat maps (breeding, winter, and occupied habitat polygons) and provide a resource for future mapping revisions.

Summary of Major Issues and/or Concerns

The LWG will work jointly with the Rich County group as needed to assist with implementation of the newly developing state sage-grouse plan, but plans to focus primarily on issues specific to the Morgan-Summit area. Key concerns in the area continue to be development/sale potential of important lek areas in both counties and a lack of specific information on population and seasonal habitat use. Developing ways to protect and enhance sage-grouse populations on private land continues be one of the primary challenges for the MSARM group.

Table 4. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the MSARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005). A "-" means that MSARM either feels that the threat will not negatively impact the sage grouse population OR that there is not sufficient information regarding that threat's impact.

	Aspects of Sage-grouse population in the MSARM Resource Area								
Threat	Lek quality/ existence	Population size	Population distribution	Nesting habitat quality and quantity	Brood-rearing habitat quality and quantity	Summer/Fall habitat quality and quantity	Winter habitat quality and quantity	Connectivity of seasonal habitat types ***(very little known)***	Connectivity of populations & sub-populations ***(very little known)***
Drought and weather	-	High	Medium	High	High	High	Low	Medium	Low
Existing and new fences	High	Low	Low	Low	Low	Low	Low	Low	Low
Home and cabin development	Very High	High	High	High	High	High	High	High	Very High
Power lines and other tall structures in key areas	High	Medium	High	High	High	High	Medium	High	High
Energy development/ infrastructure (renewable and non-renewable)	Low	Low	Low	Low	Low	Low	Low	Low	Low
Roads (mortalities and fragmentation)	High	Medium	Low	Low	Low	Low	Low	Low	Low
Conversion of sagebrush (vegetation management that degrades habitat)	Medium	High	High	High	High	High	Very High	Medium	Medium
Illegal harvest	-	Low	Low	-	-	-	-	-	-
Fire	Low	High	High	High	High	Medium	Very High	High	Medium
Livestock grazing	-	-	-	Low	Low	Low	Low	Low	Low
OHV recreation	-	Low	Low	Low	Low	Low	Low	Low	Low
Weeds (particularly annual grasses)	-	-	-	Medium	Medium	Medium	Very High	Medium	-
Parasites and disease	-	Low	Low	-	-	-	-	-	-
Unusual predation levels ***(very little known)***	-	Medium	Medium	-	-	-	-	-	-
Pinyon-juniper encroachment	-	-	-	Low	Low	Low	Low	Low	Low

Parker Mountain Adaptive Resource Management (PARM) Local Sage-grouse Working Group

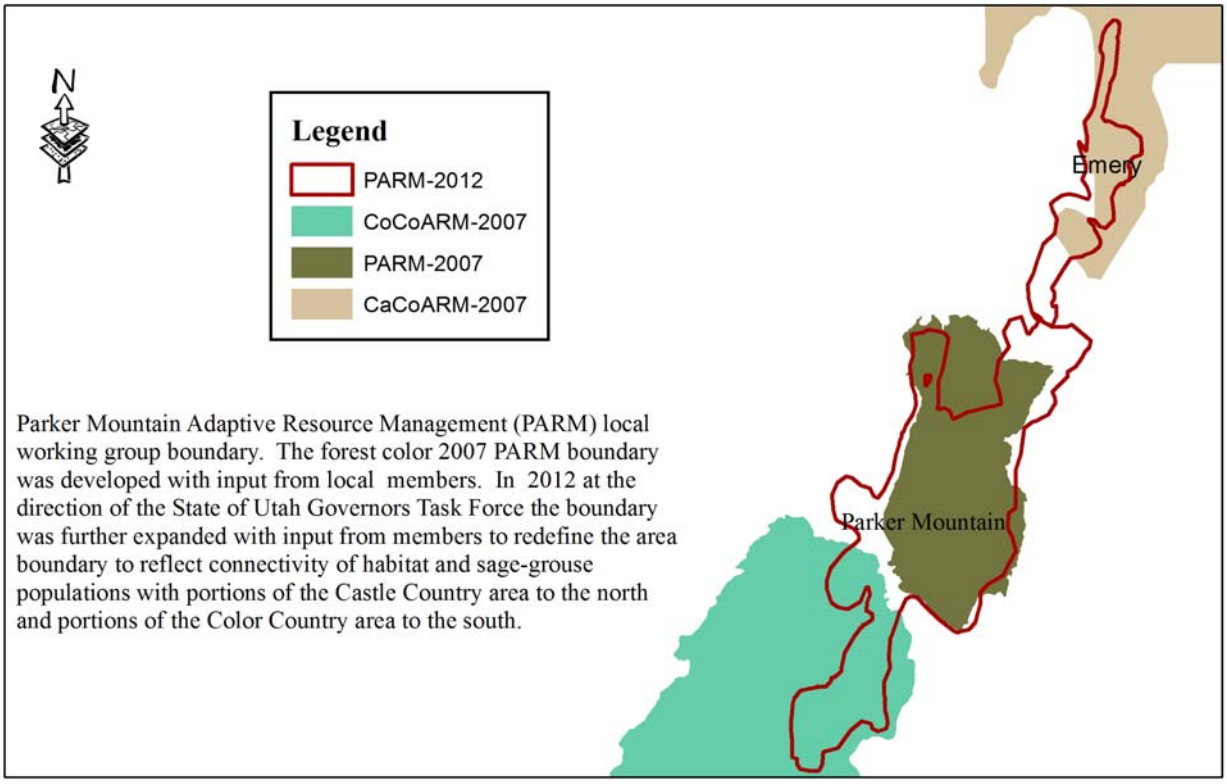

Figure 7. The Parker Mountain – Emery County Adaptive Resource Management (PARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). Emery County has been incorporated into Parker Mountain – Emery SGMA.

The Parker Mountain Adaptive Resource Management Plan (PARM) Sage-grouse Local Working Group was organized in 1998. This LWG is facilitated by Mr. Todd A. Black. PARM consists of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals. In 2012 the LWG met twice to review and discuss updating maps and boundaries and progress and changes to the LWG plan and revisions to the 2009 Utah Greater-sage-grouse Strategic Management Plan as recommended by the Utah Governor's Task Force.

Description of Area and General Population Information

The PARM LWG area covers portions of Garfield, Piute, and Wayne Counties that contain occupied sage-grouse habitats. Sage-grouse habitat in this area is well connected and the majority of the sage-grouse can be found on the Awapa and Aquarius plateaus. It is broken down into three sub regions; the Parker, Fish Lake, and Grass Valley. See http://utahcbcp.org/files/uploads/parm/PARMfnl-10-06-web.pdf for maps and figures.

The PARM area has been the most studied population of sage-grouse in Utah going back to 1998 and there have been several publications made available through these research efforts in addition to annual reports. See http://utahcbcp.org/htm/groups/parkermountain for more information.

2012 Conservation Strategies and Actions

In 2012 the LWG participants focused a substantial portion of their time engaged in conservation planning processes for sage-grouse. This effort included internal discussions that contributed to revisions of both the threats matrix of the local plan (see Table 5 below). In addition, a great deal of energy was put forth assisting with the Governor's task force sage-grouse planning processes. Members from the PARM as well as the County Commissioners provided comments on the plan. In addition, group members and the facilitator attended meetings and provided input to the State Task Force during the sage-grouse planning efforts.

In 2012 the LWG met three times to review and discuss updating maps and boundaries and progress and changes to the LWG plan and address boundary and mapping issues proposed by the Utah Governor's office sage-grouse task force group. Additionally, the group reviewed and made changes (see below) to the Summary of Threats to local sage-grouse populations from the 2006 PARM sage-grouse plan. Some of the highlights addressing actions and strategies from the 2006 plan in 2012 included:

- Field tours with PARM members to review past treatments and restoration projects in the Grass Valley region.

-Annual LWG lek count day held in April annually. This year there were 9 participants and over 500 male grouse were counted.

Project and Research Highlights

The PARM worked closely with the Utah Governor's Task Force to revise LWG maps and develop management recommendations.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings held in 2012 (Table 5). Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the chart was considered separately. Several threats were modified and the levels of the threat were adjusted accordingly. See original Threat Matrix in the 2006 plan http://utahcbcp.org/files/uploads/parm/PARMfnl-10-06-web.pdf and the modified/revised matrix.

Map Revisions

During the Governor's Task Force planning process, as noted previously, draft statewide maps for sage-grouse management areas were developed. Significant changes were made to PARM sage-grouse occupied areas changes from the 2006 plan. These primarily had to do with connecting habitat and populations to the North (Emery County—Horn and Wildcat Mountains) and to the South John's Valley north of Bryce Canyon. The PARM working group will continue to work with UDWR and other agencies to modify and improve these areas as more information becomes available and is needed.

Summary of Major Issues and/or Concerns

One of the most pressing research needs on Parker Mountain is to look at the effects of increased predation on this population. Intensive predation management that occurred in the area in the past (associated with the sheep industry) is being curtailed. Additionally, USDA Wildlife Services (WS) had been addressing raven populations for the past several years but may not continue at current levels because of funding limitations.

Table 5. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the PARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

Threats	Reduced population size	Population distribution	Reduced breeding habitat quality	Reduced late summer/fall habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations and sub-populations
Hindrance of ability to maintain and implement local management decisions	High	High	High	High	High	High	High
Power lines and other tall structures	Medium	Medium	Medium	Low	Medium	High	High
Natural resource exploration and development	High	High	Low	High	High	Medium	Medium
Excessive hunting pressure	Low	Low	Low	Low	Low	Low	Low
Prolonged drought and extreme weather shifts	High	-	Low	High	High	-	-
Lack of proper range management	Low	Medium	Low	Medium	Medium	Medium	Medium
Altered fire regimes	Low	Low	Medium	Medium	Medium	Medium	Medium
Herbivory practices that are detrimental to the habitat (wild/domestic)	High	High	Low	High	High	Medium	Medium
Incompatible OHV and recreation	Low	Medium	Low	Low	Low	Medium	Medium
Invasive/noxious weeds	High	High	High	Very High	High	Medium	Low
Parasites and disease	Very High	Very High	Low	Low	Low	Low	High
Extraordinary predation	Very High	Very High	Low	Low	Low	Low	Medium
Lack of vegetation management	High	Medium	High	High	High	High	Medium
Pinyon-juniper encroachment	High	High	High	High	High	High	Medium
Livestock grazing	Low	Low	Low	Medium	Medium	Medium	Medium

Rich County Coordinated Resource Management Sage-grouse Local Working Group

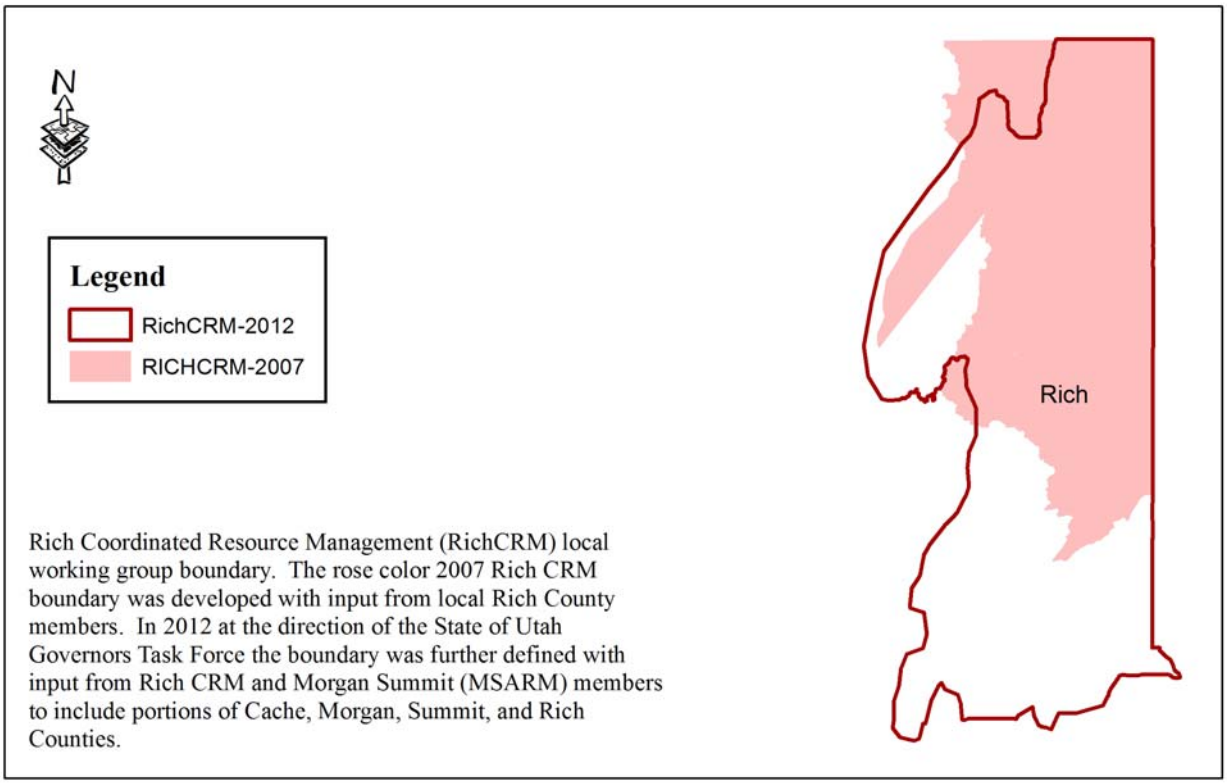

Figure 8. The Rich County Coordinated Resource Management (RICHCO) Sage-grouse Local Working Group and the new Sage-grouse Management Area (SGMA). The SGMA includes portions of Morgan and Summit Counties.

The Rich County Coordinated Resource Management (CRM) Sage-grouse Local Working Group (RICHCO) is facilitated by Mr. Todd A. Black. The RICHCO consists of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals.

In 2012 the group met formally three times to discuss and update the project data base, hear project proposals, and updates from research efforts and agencies. The group also discussed and reviewed strategies and actions from the sage-grouse plan. Additionally, one field tour was held to view and discuss research efforts and implemented actions and strategies, the focus this year was on BLM's efforts to reduce pinyon/juniper encroachment in key sage-grouse wintering areas. An additional CRM Board meeting was held early December 2012.

Description of Area and General Population Information

The Rich CRM is located in northeastern Utah, and is a significant population center for grouse in three states – Utah, Idaho, and Wyoming (Figure 8). The SGMA management area includes Cache, Rich, Weber, Morgan, Summit and Wasatch Counties. The area boundary was

determined by consulting with adjacent states, UDWR, and the Morgan-Summit Adaptive Resources Management Local Sage-grouse Working Group, and the CRM. It incorporates vegetation types used by sage-grouse.

Currently, there are 51 known active leks counted in the CRM boundary. The average number of sage-grouse attending these leks exceeds 20 males. One lek found on the Utah/Idaho border is one of the largest in the state with male counts often exceeding 150 grouse. The population remained stable with a slight decline in population numbers and male lek attendance since 2010. The area remains one of four areas in the state that still allows conservative hunting of sage-grouse. This follows similar trends throughout the state of Utah. This population is regarded as one of the most stable in Utah with a potential for growth. Sage-grouse in this area show resiliency to known threats, and are not regarded as being in jeopardy.

2012 Conservation Strategies and Actions

In 2012 the CRM devoted substantial energy, engaged in conservation planning processes for sage-grouse. This included internal discussions that contributed to revisions of both the threats matrix of the local plan (Table 6). In addition, a great deal of energy was put forth assisting with the Governor's Task Force planning process. Members from the CRM as well as the County Commissioners provided comments on the plan. In addition, group members and the facilitator attended meetings and provided input to the Task Force.

Some of the highlights addressing actions and strategies from the 2006 plan in 2012 included:

- Field tours with CRM members to review past treatments and restoration projects

Project and Research Highlights

In 2012 the CRM held a special meeting to review and discuss updating maps and boundaries and progress and changes to the LWG plan and revisions to the 2009 State of Utah Greater-sage-grouse plan as proposed by the Utah Governor's sage-grouse task force. Additionally, the group reviewed and made changes (see below) to the Summary of Threats to local sage-grouse populations from the 2006 Rich CRM sage-grouse plan.

The CRM partnered with the Natural Resources Conservation Service (NRCS) Sage-Grouse Initiative (SGI) to implement a long-term research project to evaluate sage-grouse population and habitat responses to rest-rotation grazing. The CRM area exhibit a complex mosaic of land ownership, competing resource uses, and administration of the sagebrush habitats compound sage-grouse management and conservation in Utah. One population of sage-grouse during the course of a season may occupy land administered by several different federal and state agencies and private landowners.

Reported effects of grazing on greater sage-grouse and sagebrush steppe habitats differ. The reason for this is that no before-after-control-impact (BACI) studies have been conducted to specifically document the long-term impacts on greater sage-grouse vital rates and the effects specific grazing strategies on ecological site condition and trends. Changes to sagebrush steppe vegetation communities in response to management actions may be manifested over decades.

Concomitantly, the prohibitive costs of meaningfully monitoring vegetation and sage-grouse population changes over extended time periods have precluded meaningful documentation of grazing effects on greater sage-grouse.

The Utah Sage-grouse Strategic Management Plan (UDWR 2009) has identified the following research priorities regarding livestock and sage-grouse:

a) How does domestic grazing directly affect sage-grouse populations?
b) How does domestic grazing directly or indirectly affect sage-grouse habitats (all seasonal)?
c) How do water developments affect sage-grouse and their habitat (directly and indirectly)?
d) Does domestic grazing alter behavior in seasonal habitat areas (including meadows/riparian areas)?

The purpose of study is to scientifically document greater sage-grouse individual and population responses using a BACI design to vegetation changes that may occur under prescribed grazing of paired sites located in Rich County Utah. Specific questions to be addressed include:

1) Do sage-grouse vital rates differ under prescribed and traditional seasonal-long grazing practices implemented on BLM allotments?
2) Do sage-grouse seasonal habitat-use patterns and leks trends differ under prescribed and season-long grazing?
3) Does the quality of the seasonal habitats used by sage-grouse under prescribed and season-long grazing differ based structure, composition, and nutrient analysis?

This research project is being conducted on 2 study areas in Rich County, Utah. The first study area is Deseret Land and Livestock (DLL) where 81,000 ha (200,000 ac) are privately managed under rotational prescribed grazing practices. Three Creeks is the second study area, and consists of a 59,000 ha (146,000 ac.) collection of 27 Bureau of Land Management (BLM) and U.S. Forest Service (USFS) grazing allotments mixed with private lands and managed under season-long grazing. Elevation at these study areas varies from 1900m (6200 ft.) to 2600m (8530 ft.). The study area consists primarily of sagebrush steppe habitat with stands of aspen and evergreens at higher elevations. Rich County occupies the SW portion of the Wyoming Basin management zone. The 2012 annual report can be accessed on-line at http://utahcbcp.org/files/uploads/rich/RC_2012AnnualReport.pdf.

Lastly, the CRM continued to work with Utah State University and the Idaho Game and Fish Department to study sage-grouse populations that inhabit the Bear River Plateau. These populations use seasonal habitats in Idaho, Wyoming, and Utah. The 2012 annual report can be accessed on-line at http://utahcbcp.org/files/uploads/rich/BearLakeUpdate_7-7-12.pdf.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings held in 2012 (Table 6).

Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the chart was considered separately. Several threats were modified and the levels of the threat were adjusted accordingly.

Map Revisions

During the Governor's Task Force planning process, as noted previously, draft statewide maps for sage-grouse management areas were developed. The CRM will continue to work with UDWR and other agencies to modify and improve these areas as more information becomes available.

Summary of Major Issues and/or Concerns

One of the biggest concerns with the RICHCO CRM remains the threat of listing of the sage-grouse and what restrictions will be placed on public grazing allotments which remain a key source of revenue to the majority of the citizens in Rich County. Documenting the relationship between sage-grouse and livestock grazing remains the highest CRM priority. In 2012 the CRM provided $5,000 to Utah State University to hire additional field technicians to collect field data for the on-going study.

Table 6. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the Rich CRM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

Threats	Reduced population size	Population distribution	Reduced breeding habitat quality	Reduced late summer/fall habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations and sub-populations
Home and cabin development	Medium	Medium	Medium	Medium	Low	Medium	Medium
Power lines, fences, and other tall structures	High	Low	Medium	Low	Low	Medium	Medium
Renewable and non-renewable energy development	Medium	Medium	High	High	Medium	Low	Low
Roads	High	Low	Medium	Low	Low	Medium	Medium
Drought and weather	High	High	Medium	High	Low	High	High
Hunting pressure	Low	Medium	-	-	-	-	High
Incompatible fire management practices	High	High	High	High	High	High	High
Incompatible livestock grazing management	High	Medium	Medium	Medium	Medium	High	High
Incompatible OHV and recreation	High	Medium	Medium	Medium	Low	Low	Low
Invasive/noxious weeds	Medium	High	Medium	Low	Low	Medium	Medium
Parasites and disease	Medium	Medium	-	-	-	-	High
Predation	Medium	Medium	Low	-	-	-	Medium
Vegetation management	-	-	High	High	High	High	Medium
Pinyon-juniper encroachment	-	-	Low	Low	Low	Low	Low

Southwest Desert Adaptive Resource Management (SWARM) Sage-grouse Local Working Group

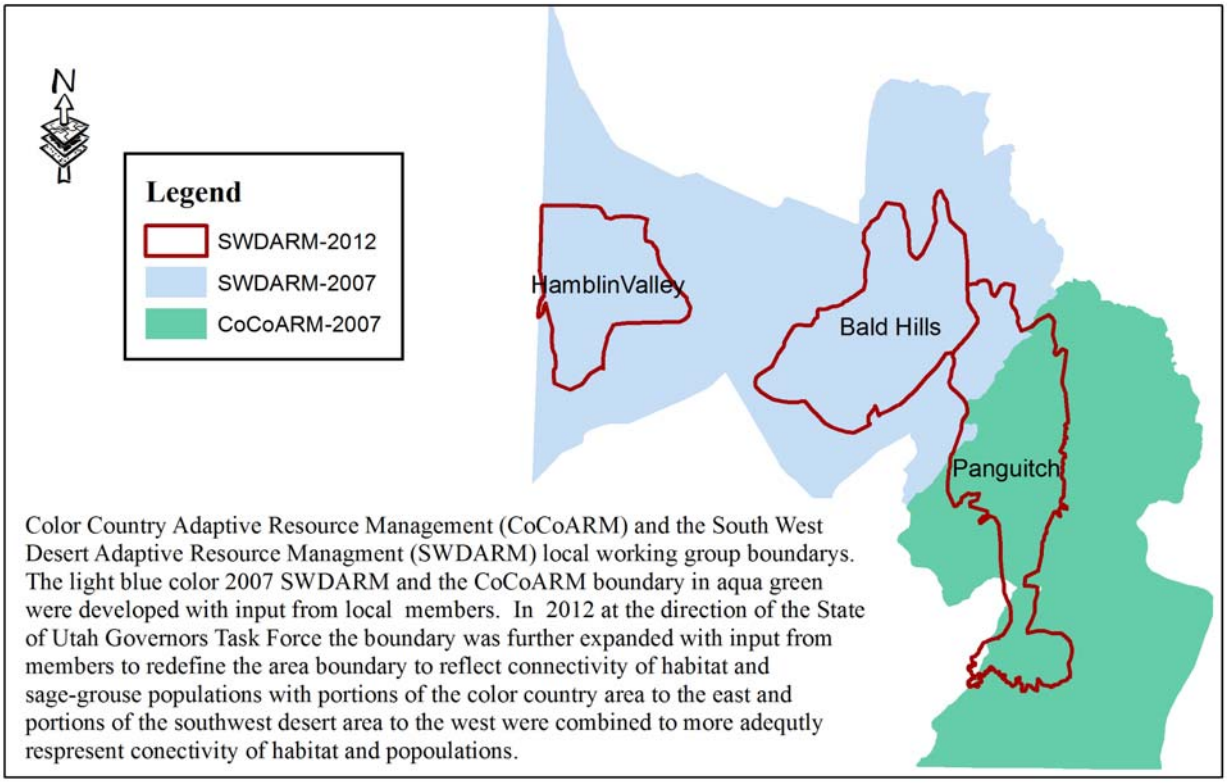

Figure 9. The Southwest Desert Adaptive Resource Management (SWARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). The SWARM area includes the Hamblin Valley and Bald Hills SGMA.

The Southwest Desert Adaptive Resource Management sage-grouse local working group (SWARM) consists of community members from Beaver and Iron Counties and is facilitated by Dr. Nicki Frey. SWARM meets bi-monthly, more frequently if necessary. In the fall of 2011, members of SWARM developed a short list of action items to focus their efforts on in 2012.

One of the main purposes of LWG plan is to provide a framework of strategies and associated actions that can be implemented to abate threats, address information gaps, and guide monitoring efforts. Several other documents and publications provide recommendations and guidelines for management of sage-grouse populations and their habitats, many of which were reviewed in the Introduction of our plan. The Governor's Task Force has recommended the development of two SGMAs in the LWG conservation area; Hamlin Valley and Bald Hills (Figure 9).

Description of Area and General Population Information

The Bald Hills Management Area is located in southwestern Utah, in Beaver and Iron Counties, and is considered a population stronghold for this region of Utah. This population uses a series of leks throughout the habitat area, with males visiting more than one lek per season. Currently, the population is constrained to the Management Area by vegetation fragmentation and human development; however future improvements could connect this population to the Hamlin Valley Management Area to the west, and further north into Beaver County. The primary land uses in this Management Area are grazing, agriculture, and swine production; predominant land ownership is Bureau of Land Management and private. The BLM manages the Bald Hills for multiple uses including conservation, recreation, energy development, and big game hunting. Residential development is present in Minersville, in the north of the Management Area, where most of the agriculture production also occurs. There is potential for wind energy production as well as current and future power transmission lines.

The Hamlin Valley Management Area is located in southwestern Utah, in Beaver and Iron Counties, on the border of Utah and Nevada and is considered a population stronghold for this region of Utah. Although currently isolated from other habitat areas, habitat restoration could link this population to the Bald Hills Management Area. The primary land use in this Management Area is grazing; predominant land ownership is the Bureau of Land Management. The BLM manages Hamlin Valley for multiple uses including wild horse conservation, recreation, and big game hunting. Development is limited to scattered houses, generally in the southern portion of the Habitat Area.

2012 Conservation Strategies and Actions

Strategies developed by SWARM are designed to be specific to the local area while taking into consideration the guidelines at a rangewide level. SWARM participated in 2 consultation activities in 2012. Members of SWARM assisted in developing the Bald Hills and Hamlin Valley SGMA maps and management plan for the Governor's Task Force. Additionally, USUEXT, UDWR, and BLM have been cooperating to assist in the development of the Sigure-Red Butte transmission line mitigation plan.

Strategy: Improve age distribution of sagebrush-steppe communities by 2016.

Action: Coordinate associations among agencies and landowners to fund implementation of projects and monitoring.

Nile Sorenson and Clint Wirick have been actively engaging landowners in the SWARM area, especially in areas targeted by the SWARM group. They have several projects in Hamlin Valley at this time.

Action: Monitor the response of sage-grouse to changing habitat conditions.

Both the Bald Hills and Hamlin Valley telemetry projects have been instrumental in documenting sage-grouse of habitat reclamation via removal of pinyons and junipers as well as reclamation post-fire. Continued research in this area will increase our knowledge of sage-

grouse response to what we hope is habitat improvements.

Strategy: Increase participation of local public and private landowners with SWARM over the next ten years.

Action: Host open houses, field tours, and presentations.

This summer, SWARM conducted a field tour of the Minersville area, highlighting fire reclamation sites and research results. The BLM and UACD coordinated to conduct an informative and interesting trip. This fall, SWARM hosted a very successful open house. Members sponsored a dinner prior to several light-hearted presentations, including updates on fire reclamation and graduate student research. More than 40 people attended the event.

Action: Involve the Conservation District representatives more regularly.

Our attempts to involve the Conservation Districts more regularly were very successful. By improving the list serve and making a few phone calls, the UACD greatly increased their involvement, as evidenced by their attendance and support of the both the field tour and the open house.

Strategy: Manage unwanted plant species in sage-brush steppe habitat by 2016.

Action: Evaluate and utilize chemical applications where appropriate to restore habitat dominated by cheatgrass, unwanted species, and/or noxious weeds.

Chad Reid, the USUEXT Iron County agent has been conducting research on different chemical applications for several years. He continues to update SWARM on his research findings, and involves members of SWARM on the research site selection and application support.

Strategy: Minimize impacts of new land developments and/or recreational uses on sage-grouse populations during the next ten years.

Action: Provide input into management plans for federal, state, and local agencies.

Our facilitator provided Iron and Beaver county commissions with updates on annual SWARM activities this year. In addition, we supported UDWR with their presentations and updates of the Governor's Task Force planning process. During the planning process, we consulted with the Iron and Beaver county commissions to provide them with the information necessary for them to submit county and regional management suggestions to the sage-grouse management task force.

Strategy: Reduce threat of predators on sage-grouse over ten-year period.

Action: Determine predator community composition and depredation rate.

USUEXT is currently concluding a study on avian predator communities and the factors that influence fence use in Hamlin Valley.

Project and Research Highlights

The BLM has funded research in the Bald Hills study area. As a result, Dr. Frey and her

graduate student were able to provide USFWS, BLM, and Rocky Mountain Power with key information regarding sage-grouse habitat use and movement patterns in relation to potential power line development. Furthermore, the BLM has continued to fund this research in Hamlin Valley and the Bald Hills to continue to gather information on winter space use and movement patterns in the SGMA areas.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings held in 2012 (Table 7). Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the chart was considered separately. Several threats were modified and the levels of the threat were adjusted accordingly.

Map Revisions

During the Governor's Task Force planning process, as noted previously, draft statewide maps for sage-grouse management areas were developed. The LWG will continue to work with UDWR and other agencies to modify and improve these areas as more information becomes available.

Summary of Major Issues and/or Concerns

Balancing contemporary lands uses and emerging wind energy development and transmission with sage-grouse conservation remains a paramount concern for the LWG.

Table 7. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the SWARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

	Aspects of Sage-grouse population in the SWARM Resource Area							
Threat	Lack of key habitat type connectivity	Poor condition of surrounding communities	Degradation of winter habitat quality	Loss of breeding quality (leks and nesting) habitat	Loss of brood-rearing habitat quality	Loss of riparian area quality	Reduction of population size	Reduction of population distribution
Enhanced native and domestic predators	Medium	Low	Low	High	High	Medium	High	High
Recreational use	Medium	Medium	Medium	High	High	High	Medium	Medium
Invasive/alien vegetation species	High	High	High	Very High	High	Medium	High	High
Concentrated wildlife and/or livestock use	High	Medium	Medium	High	High	Medium	Medium	Medium
Fire and vegetation management	High	Medium	Medium	High	High	High	High	High
Development of roads or utilities	High	Medium	Low	Very High	High	Medium	Medium	High
Lack of communication among public parties	Medium	Medium	Low	High	Medium	Medium	Medium	Medium
Diseases and parasites	Medium	Medium	Low	High	Medium	Medium	High	High
Alternative land uses (mining, wind power, water development)	High	High	Medium	High	High	High	High	High
Dramatic weather events	High	Medium	Medium	Very High	High	High	High	High

Strawberry Valley Adaptive Resource Management (SVARM) Sage-grouse Local Working Group

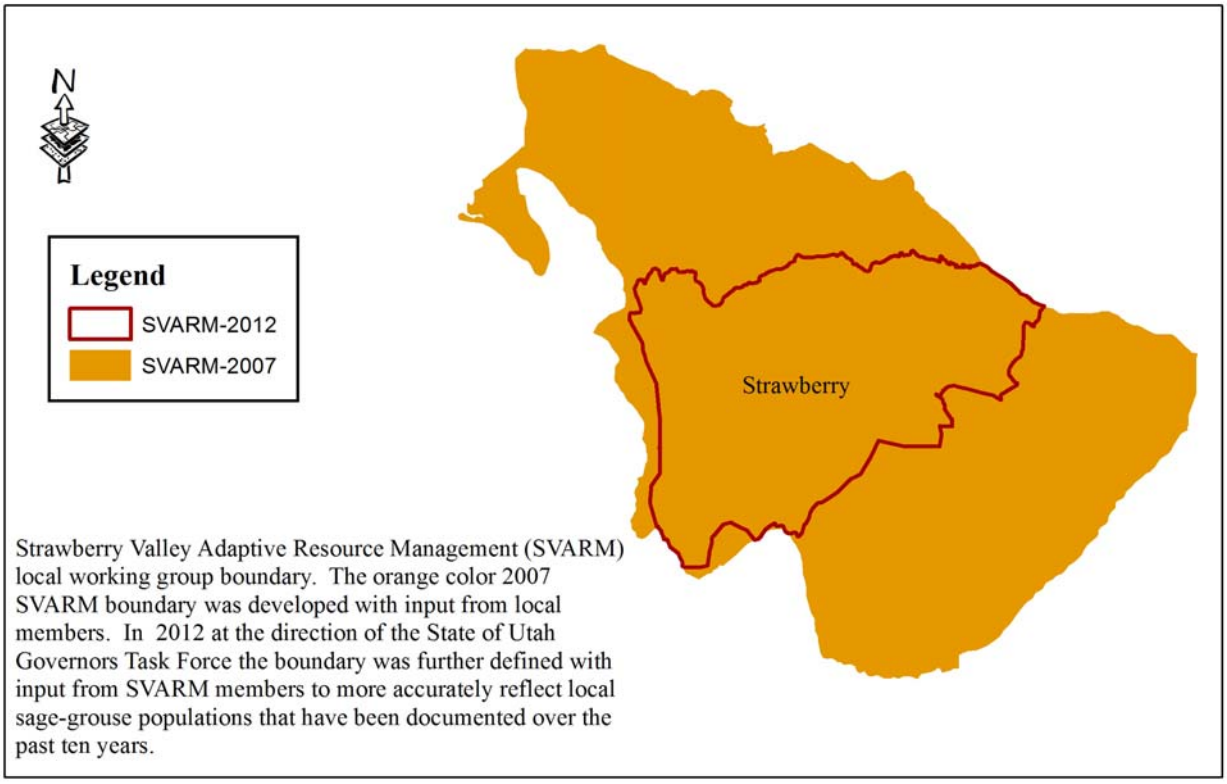

Figure 10. The Strawberry Valley Adaptive Resource Management (SVARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.

The Strawberry Valley Adaptive Resource Management (SVARM) sage-grouse local working group is facilitated by Ms. Lorien Belton. SVARM meets three times yearly: a spring meeting, a summer field tour, and a fall meeting. The group may meet more frequently as the need arises.

Description of Area and General Population Information

The LWG conservation area covers Wasatch and Duchesne Counties. There are leks and associated nesting/brood-rearing areas both at high elevations around the Strawberry Reservoir, as well as in the lower-elevation Fruitland area in Duchesne County. The birds winter primarily in Fruitland. In recent years, the population has grown increasingly stable, estimated to number between 400-500 birds. Predator control efforts, particularly with regard to red fox control, have played a large role in helping the sage-grouse population rebound from previous lows.

2012 Conservation Strategies and Actions

In 2012 the LWG engaged in considerable planning efforts, in addition to research and project implementation. Planning work included:

- Revision of threats chart and the strategies and actions in the SVARM local sage-grouse conservation plan, in preparation for future full-plan revisions
- Providing local perspective and comments on drafts of the Governor's Task Force sage-grouse plan, both the maps and planning/stipulations documents
- Participation at BLM/USFS scoping meetings in early 2012, as part of the process that will eventually lead to Forest Plan and Resource Management Plan amendments that include sage-grouse stipulations
- Although no comments periods were available during this reporting period, SVARM members are also staying apprised of the planning processes for the high voltage transmission lines proposed to come through the area in future years.

In addition to extensive involvement with multiple planning processes, SVARM participants, through their respective organizations and agencies, continue to implement strategies and actions outlined in the local conservation plan. During 2011-2012, these efforts included:

- Continued raven control efforts in the area
- Efforts to engage landowners in habitat improvement projects. Several landowners have signed up to NRCS's SGI funding for projects.
- Finalizing the current phase of sage-grouse research by BYU in the Strawberry area
- Current efforts, nearly complete, to report the results and lessons learned from the years of sage-grouse research in the area, in a "white-paper" format.
- Implementation of several Watershed Restoration Initiative (WRI) funded habitat improvement projects to benefit sage-grouse in the area, including three sagebrush treatment projects and one weed-management project.
- Mitigation Commission has expressed interest in continued work on habitat improvements in the future.
- Wasatch County continues to be a strong partner in weed management efforts in sage-grouse areas around Strawberry Reservoir.

Project and Research Highlights

The following habitat improvement projects were completed during 2011-2012. Project numbers correspond to the numbers in the WRI database.

- South Strawberry Treatment (1754). This is a sage-brush treatment for nesting/brood-rearing habitat improvement, finished in the 2011-2012 fiscal year.
- Badger Hollow/Chicken Springs (1816). This project is also a sage-brush mowing and harrowing project to reduce sagebrush density and improve the forb component in high-elevation spring and summer use areas by sage-grouse. This project was finished in the 2011-2012 fiscal year.
- Wildcat (2309). This is also a sagebrush density reduction project, on the Wildcat Wildlife Management Area near the Wasatch/Duchesne County line. A chain harrow was used to decrease sagebrush density and encourage forb and other understory growth.

This project was finished in September 2012. This project was designed specifically to benefit sage-grouse based on information about where local birds nest.
- A small mowing on private land adjacent to the Wildcat WMA project was also done in November 2012 to benefit understory vegetation for sage-grouse.
- Wallsburg Knapweed control (2259). This project only has a secondary (not immediately local) benefit to sage-grouse, but has a huge long-term benefit for the entire area by keeping problematic weed infestations wherever they occur under control.

Research on sage-grouse in the Strawberry Valley has a long history and has been gathering critical information on the Strawberry populations for many years. As a result of the research, grouse use of habitat improvement project areas has been tracked, and has increased our understanding of how grouse use areas. In addition, the information has been used to design habitat treatments in sagebrush to be most compatible and optimal for how grouse currently use the areas. Now that we are starting to understand behavioral responses to the habitat treatments, the next step, over future years, will be to determine whether the projects improve vital rates (like nesting or brood-rearing success), or population numbers overall. In the fall of 2012, there will be a final push to collar some young grouse before the battery life ends for the hens' collars. Monitoring will continue for as long as possible. The researchers are currently working on a research summary paper, which is scheduled for release in late 2012 or early 2013.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings extending through the past year and a half (Table 8). Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the plan was considered separately. The group debated whether additional information was known, or if conditions had changed from when the plan was written, when considering adjustments to any threat level. Numerous threat levels were adjusted accordingly. Changes included:

- Increased concern about weeds, particularly in brood-rearing and nesting habitat
- Decreased concerns about drought/weather impacts to grouse given the relatively mesic quality of habitat in the SVARM area
- Increased concern about pinyon-juniper encroachment, particularly with regard to winter habitat and connectivity of habitats
- Reduced concern about OHV reacreation during spring and summer, while maintaining high levels of concern about its winter impact
- Increased concern about the impact of past vegetation treatments on habitat connectivity
- Decreased concern on tall structures, particularly given the focus on channeling future power lines through the existing transmission corridor in the Fruitland area

Map Revisions

The Governor's Task Force planning process resulted in draft maps for sage-grouse management areas, including one for the Strawberry Valley and Fruitland areas. The SVARM group reviewed the draft maps in June 2012, considering the overlay of all known sage-grouse locations from the last 15 years of BYU research. The group forwarded recommendations to the state working group. Final maps are not yet available.

Summary of Major Issues and/or Concerns

The SVARM group will continue to develop projects and conduct outreach and research according to the revised strategies and actions in the local conservation plan. In the upcoming year, particular focus will be placed on:

- Increased outreach to landowners who might be interested in NRCS SGI funding for habitat improvement projects
- Identifying ongoing and future research needs and planning accordingly
- Understanding results of past research and applying that information to strategic habitat project design in the future
- Revise the local conservation plan to incorporate new information
- Continue efforts to engage and assist counties in sage-grouse planning processes, particularly with respect to county-level participation in the Governor's sage-grouse planning efforts
- Increase efforts to engage Duchesne County, particularly weed managers, in local working group efforts.

The Strawberry Valley sage-grouse populations continue to maintain themselves at healthy levels. The LWG priorities included continued habitat work, weed management, and predator management. Understanding, though research, how our work impact grouse populations long term is also of high importance to this group. Although it is not clear how future energy development plans could affect grouse in the Fruitland area, SVARM will keep abreast of the growing energy development interest in the winter range and other habitat areas, including on Mitigation Commission and UDWR properties.

Table 8. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the SVARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Rankings are as follows: Ranks are defined according to TNC (2005).

	Aspects of Sage-grouse population in the SVARM Resource Area							
Threat	Reduced population size	Population distribution	Reduced nesting habitat quality	Reduced brood-rearing habitat quality	Reduced summer/fall habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations & sub-populations
Drought and weather	Medium	Medium	Medium	Medium	Medium	Low	Medium	Low
Existing and new fences	Low	Low	Low	Low	Low	Low	Low	Low
Home and cabin development	High	High	Medium	Medium	Medium	Medium	High	Very High
Power lines & other tall structures	Medium	High	Medium	Medium	Medium	Medium	High	High
Renewable & non-renewable energy development	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Roads	Medium	High	High	High	High	Medium	High	High
Historical vegetation treatments	Medium	High	Medium	Medium	Medium	High	High	High
Hunting	Low	Low	-	-	-	-	-	-
Fire	Low	Low	Low	Low	Low	Low	Low	Low
Livestock overgrazing	Low	Low	Low	Low	Low	Low	Low	Low
OHV recreation	Medium	Medium	Medium	Medium	Medium	Very High	Medium	Medium
Invasive/noxious weeds	-	-	Medium	Medium	Low	Low	Low	-
Parasites and disease	Low	Low	-	-	-	-	-	-
Predation	Very High	Very High	High	High	Medium	Medium	Medium	Medium
Conifer (pinyon-juniper) encroachment	Medium	Medium	Medium	Medium	Medium	High	High	High

Uintah Basin Adaptive Resource Management Local Working Group

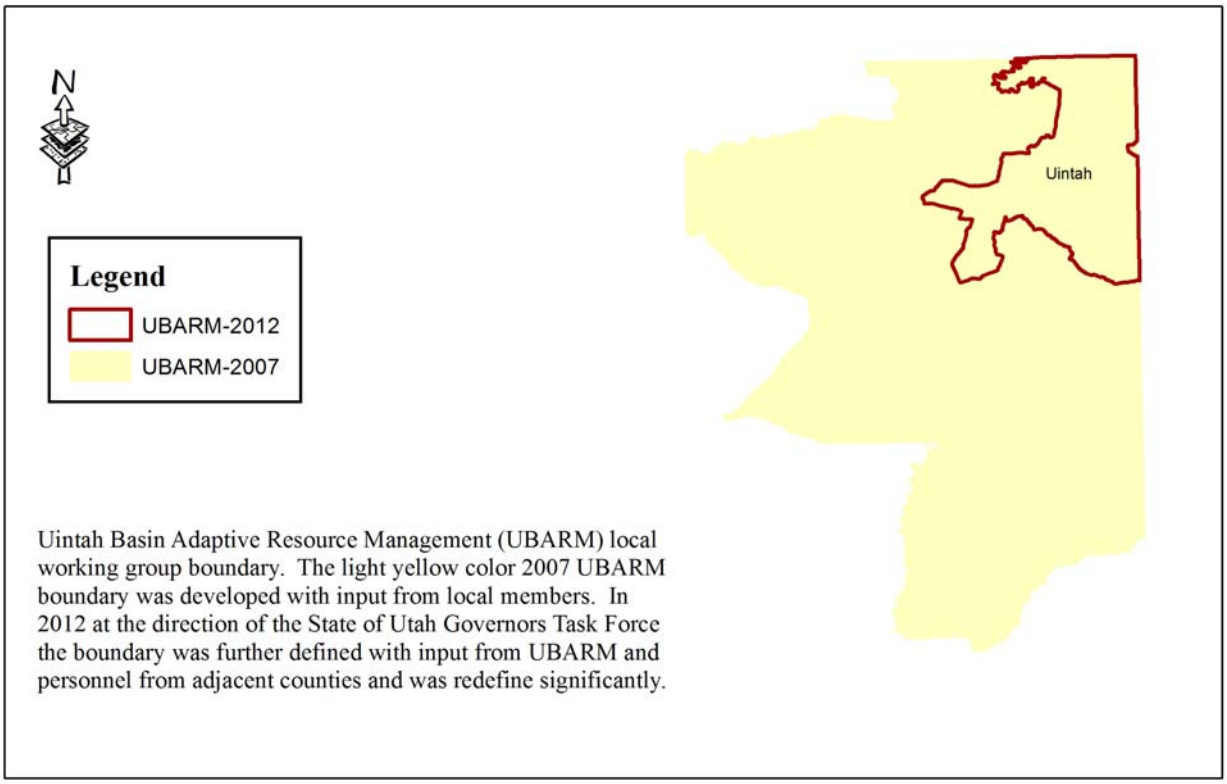

Figure 11. The Uintah Basin Adaptive Resource Management (UBARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.

The Uintah Basin Adaptive Resource Management (UBARM) sage-grouse local working group is facilitated by Ms. Lorien Belton. UBARM meets three times yearly: a spring meeting, a summer field tour, and a fall meeting. The group may meet more frequently as the need arises. Upcoming meetings will address plan revisions and updates.

Description of Area and General Population Information

The Uintah Basin sage-grouse group covers parts of Duchesne, Uintah, and Daggett counties. A large population with multiple leks inhabits the Diamond Mountain area north of Vernal. This area has mixed landownership, including private, state, and federal lands, and is used primarily for agricultural purposes. The Diamond Mountain population is one of the few populations in Utah that is robust enough to support a limited sport hunt in the fall. Additional sage-grouse populations occur south and west of Vernal in areas including Forest Service land on Anthro Mountain, and BLM land further south. The southern populations in particular are in areas that have been highly impacted by oil and gas development. Some populations also occur farther south into the Book Cliffs. Populations on Seep Ridge, Deadman Bench, Little Mountain,

Anthro Mountain, and Diamond Mountain have been the subject of research studies in recent years.

2012 Conservation Strategies and Actions

The LWG continued efforts to improve sage-grouse habitat, engage private landowners, and learn about local sage-grouse populations.

Many UBARM members participated extensively in multiple conservation planning processes for sage-grouse taking place. This included:

- Discussions at meetings that contributed to revisions of both the threats chart and the strategies and actions sections of the local sage-grouse conservation plan – the guiding document for the UBARM group's efforts.
- Participation in scoping meetings during the initial phases of development of the Utah EIS which will guide implementation of BLM and USFS amendments to include sage-grouse recommendations over the coming years.
- Active involvement and attendance by several UBARM members in the Governor's Task Force sage-grouse planning meetings, including Uintah County Commissioner Mike McKee, who served on the Governor's group; Brian Maxfield, who provided extensive input on sage-grouse mapping efforts; and UBARM co-chair Dave Allison, who provided thorough commentary on drafts and the effort overall. Additional recommendations on planning drafts and map boundaries from numerous group members were compiled from UBARM full meetings, UBARM sub-team recommendations, and individual comments.
- Considerable support from Uintah County, toward efforts to incorporate sage-grouse planning stipulations into county plans in the future.
- The facilitator kept UBARM members up to date with aspects of the various ongoing planning processes via email and at meetings.

In addition to extensive involvement with planning processes, UBARM participants individually and with their organizations continued to make progress on the strategies and actions outlined in the UBARM conservation plan. This includes:

- Numerous lop-and-scatter or bull hog projects to remove pinyon-juniper encroaching into sagebrush in sage-grouse habitat areas. Many of these project were funded by the Watershed Restoration Initiative, and reviewed by the Utah Partners for Conservation and Development (UBPCD) to ensure that the benefits to sage-grouse are clear during project planning. Relevant projects include Raven's Ridge Phase 3, and Jeep Trail/Gilsonite.
- Strong efforts to involve private landowners in the Sage-Grouse Initiative, including pinyon juniper removal projects, water developments, and other projects to benefit sage-grouse.
- Ongoing research, much of which was completed in 2012 or is nearing completion. USU research on Anthro Mountain and BYU research on Diamond Mountain both engaged graduated students in collaring sage-grouse, tracking movements, and analyzing habitat.
- In March of 2012, Lorien Belton, the UBARM facilitator, met with the Uintah County Commissioners to update them on sage-grouse issues and the work of UBARM members.
- UDWR radio-collared several birds in 2012 on Taylor Mountain, and are actively tracking those birds to learn more about population movements in the area. DWR also

continues to track birds from USU and BYU research projects until the collars are no longer detectable.

- UBARM members joined other members of the UBPCD group on a field trip in June 2012. The group toured pinyon juniper removal projects throughout the Book Cliffs, including several designed specifically for sage-grouse.
- Education and outreach efforts to ranchers on sage-grouse. As part of a June 21st, 2012 workshop run by the Utah Department of Agriculture's Grazing Improvement Program (GIP), Natasha Gruber, the local SGI biologist, presented sage-grouse issues and habitat needs to a group of beginning ranchers in the UBARM area.

Project and Research Highlights

Utah State University graduate student Orrin Duvuvuei finished work on Anthro Mountain in 2012. After spring trapping and a final season of work to study all the collared birds, Orrin is now finalizing the results of his research. This research followed up on previous research in the same area begun by Natasha Gruber, who tracked local and translocated birds. Brian Maxfield of UDWR, will continue to track the birds. Orrin's 2012 annual report can be found on-line at http://utahcbcp.org/files/uploads/uintah/Antthro2012AnnualReport.pdf. Natasha Gruber's thesis can be found on-line at http://utahcbcp.org/files/uploads/uintah/NatashaGruberThesisFinal.pdf.

Brigham Young University researchers have also recently ended field work on sage-grouse research on Diamond Mountain. After final trapping this spring and a field season of tracking and monitoring chick survival, habitat use, etc., graduate student Josh Kaze is now analyzing data. Continued monitoring of collared birds by Brian Maxfield will help establish a greater understanding of seasonal habitat movements in the area.

Numerous projects with sage-grouse habitat benefit potential were funded in Utah's Northeastern Region in 2012. The majority of these projects were pinyon-juniper removal, although several sagebrush habitat improvements and riparian habitat work are also included. Many of the projects took place on Diamond Mountain. For reference, project numbers for these projects in the WRI database are as follows: 2301, 2300, 2298, 2274, 2283, 2273, 2266, 2268, 2230.

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings extending through the past year and a half (Table 9). Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the plan was considered separately. The group debated whether additional information was known, or if conditions had changed from when the plan was written, when considering adjustments to any threat level. Numerous threat levels were adjusted accordingly. Changes from the table developed in 2006 reflect:

- Increasing concern over weeds and drought conditions
- Decreasing concern over the impact of OHV recreation and West Nile Virus
- Decreasing concern over incompatible vegetation management, attributed to a large degree to increased awareness of vegetation management strategies to improve, rather than harm, habitat.

- Increased concern over impacts of oil and gas development, based on dramatically increased energy production, existing and proposed, in the UBARM area.
- Addition of a separate row for "fences," which was disaggregated from the threat category with powerlines and other tall structures due to concerns about proposed high voltage transmission lines as well as additional information on fence strikes

The group has not completed the task of finalizing the revised chart, which is based on general consensus of attending members over several meetings. The current draft of the chart, which still has several unresolved discussion items in the energy development, is included here.

Map Revisions

During the Governor's Task Force Planning process, draft statewide maps for sage-grouse management areas were developed. They received extensive comments from UBARM members at a well-attended meeting in May 2012, as well as during other subsequent opportunities. The proposed management area focuses primarily on the Diamond Mountain population. The draft boundaries exclude sage-grouse populations south of Vernal. Although the map boundaries have not been finalized, they will serve as the focus for implementation of the state sage-grouse management plan. Populations in those areas will be subject to stipulations, also still in draft form, for sage-grouse protections. The UBARM group will likely play a large role in the implementation of the plan, but will also stay aware of sage-grouse populations in other areas of the Uintah Basin. Those populations are delineated in GIS shape files available from the Utah Division of Wildlife Resources.

Summary of Major Issues and/or Concerns

The UBARM group continued to develop projects, participate in multiple planning processes, and conduct outreach according to the revised strategies and actions in the local conservation plan. In the upcoming year, particular focus will be placed on:

- Understanding results of research on local populations, including analysis of data gathered toward understanding impacts of habitat work on sage-grouse
- Work to expand private landowner awareness of sage-grouse issues and encourage use of SGI funds for project implementation, particularly for pinyon-juniper removal projects.
- Revise the local conservation plan to address new information
- Continue implementing sage-grouse habitat improvements through the UBPCD process.
- Continue efforts to engage and assist counties in sage-grouse planning processes, particularly with respect to county-level participation in the governor's sage-grouse planning efforts
- Develop strategies for how best to address the needs of sage-grouse populations outside the state sage-grouse management area.
- Find ways to coordinate with the Carbon-Emery working group (CaCoARM).
- Participate as appropriate (providing timely comments, etc) in the BLM/USFS plan amendment processes for inclusion of stipulations for sage-grouse into Resource Management Plans and Forest Plans.

Major issues for the UBARM group continue to include finding a balance between energy development (including extraction and other infrastructure, such as transmission lines). The inclusion of private landowners and in sage-grouse conservation and habitat improvement efforts, both via voluntary work and carefully planned county-level programs or stipulations, will be a primary concern and ongoing challenge. The group has a wide participation from many industries, agencies, levels of government, and private concerns, so has excellent opportunities to address these challenges.

Table 9. Relative importance/contribution of individual threats (given current and foreseeable scenarios) to reducing or degrading aspects of sage-grouse populations in the UBARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

	Aspects of Sage-grouse population in the UBARM Resource Area							
Threat	Reduced population size	Population distribution	Reduced lek habitat quality	Reduced nesting/early brood-rearing habitat quality	Reduced summer/late brood-rearing habitat quality	Reduced winter habitat quality	Reduced connectivity of seasonal habitat types	Reduced connectivity of populations & sub-populations
Home and cabin development	Low	Low	Low	Low	Low	Low	Low	Low
Powerlines & other tall structures	Medium	Medium	High	High	Medium	Medium	Low	Low
Fences	Low	Low	Medium	Low	Low	Low	-	-
Oil & gas development	Medium	High	Medium	Medium	Medium	Medium	Medium	High
Roads	Low	Medium	Medium	Medium	Low	Low	High	Medium
Drought and weather	High	-	Low	High	High	High	-	-
Hunting pressure	Low	Low	-	-	-	-	-	-
Incompatible fire management practices	-	High	High	High	High	High	High	Medium
Incompatible livestock management (overgrazing)	-	Low	Low	High	High	Low	-	-
OHV recreation	-	Low	Medium	Low	Low	Low	-	-
Invasive/noxious weeds	Low	Medium	High	Very High	Very High	High	Medium	Low
Parasites and disease	Low	Low	-	-	-	-	-	-
Predation	Very High	High	-	-	-	-	-	Low
Incompatible vegetation management	-	-	Low	Low	Low	Medium	Low	Low
Pinyon/juniper encroachment	-	Medium	High	Medium	Medium	High	High	High

West Desert Adaptive Resource Management Local Working Group

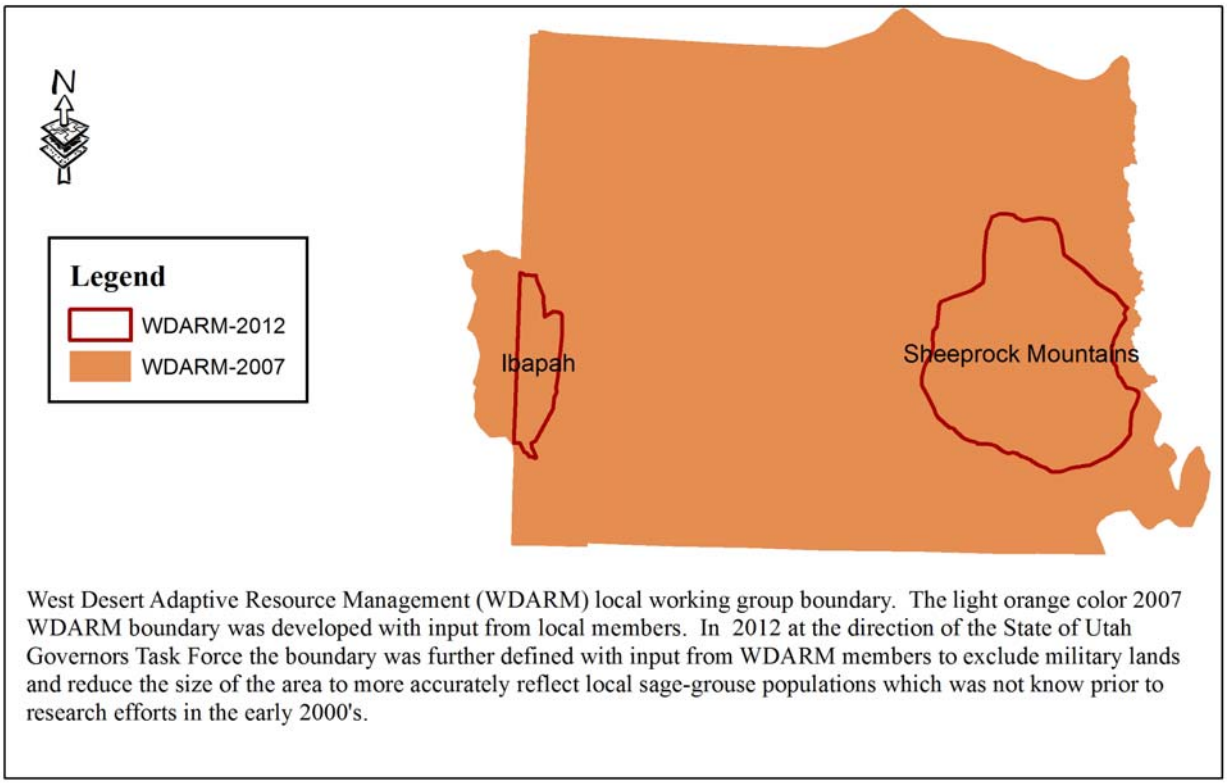

Figure 12. The West Desert Adaptive Resource Management (WDARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). The Ibapah and Sheeprock Mountains SGMA are located within the WDARM conservation area.

The West Desert Basin Adaptive Resource Management (WDARM) sage-grouse local working group is facilitated by Ms. Lorien Belton. WDARM meets three times yearly: a spring meeting, a summer field tour, and a fall meeting. The group may meet more frequently as the need arises. The following updates reflect the combined efforts of the group and individual agencies, landowners, and others on behalf of sage-grouse conservation in the West Desert.

Description of Area and General Population Information

The West Desert Adaptive Resource Management LWG conservation area encompasses sage-grouse habitats in Tooele and Juab counties. The two primary population locations are far apart: one in western Tooele County in the Ibapah region (including the Goshute Tribe's land), and the other at the eastern side of the two counties, known as the Sheeprocks. These more eastern populations include birds in the Vernon area as well as in the Tintic Mountains. Population trends in the area have declined over the last few years. From population highs in 2005-2006, small, isolated populations have declined in both the Ibapah and Sheeprock areas. Cheatgrass

and fire are of serious concern to the birds, and recent droughts and fires have exacerbated concerns about these populations.

2012 Conservation Strategies and Actions

The WDARM LWG focused on both planning processes and project implementations. Group members provided comments, suggestions, and discussion in the following ways:

- Updates to the threats chart and the strategies and actions in the WDARM local sage-grouse conservation plan, toward the goal of upcoming full plan revisions
- Detailed feedback to the Governor's Task Force sage-grouse working group on proposed sage-grouse management area boundaries for the Sheeprock and Ibapah areas
- Individual and group comments provided on potential stipulations in sage-grouse management areas
- Attendance at the Salt Lake City scoping meeting in January 2012, and providing other relevant comments, regarding the BLM's scoping process for revision of land use plans throughout Utah, including the West Desert (Salt Lake and Fillmore BLM Districts)
- Facilitator attendance at July 2012 meetings between Utah Governor's office staff and County Commissioners regarding the development of the state sage-grouse plan

In addition to extensive involvement with planning processes, WDARM participants individually and with their organizations continued to make progress on the strategies and actions outlined in the plan. This included:

- Funding and implementation of sage-grouse surveys on Dugway Proving Grounds. Dugway employees are conducting the research
- Participation in the Tooele County trails planning meetings, to encourage collaboration and joint efforts to achieve parallel goals
- Facilitator attendance at an August 2012 Tooele county planning meeting, to provide information on current planning processes as relevant to the county
- Attendance at the July 2012 Six-Counties Association of Governments field tour in July 2012, to provide sage-grouse information during that field tour
- Broad assistance with lek counts, coordinated by the DWR
- NRCS work on the SGI; SGI biologist Tammy Koldyke and other NRCS staff worked with landowners interested in doing proactive sage-grouse habitat work on their properties
- A SGI project on private land included mowing for a lek, water improvements, and fencing to improve grazing management. The project was completed in winter/spring of 2012. Matt Phillippi of NRCS was involved in project planning
- Spring lek-viewing field trip prior to the March 2012 sage-grouse working group meeting
- Installation of additional fence markers in areas near leks where fences may pose a flight hazard to sage-grouse
- Projects designed by BLM, USFS, DWR, and NRCS to improve habitat for sage-grouse. Seven projects were proposed and funded in early 2012 that would likely provide sage-grouse benefits. They include pinyon-juniper removal, weed management, and road closure projects
- Work by the BLM to improve recreation management on the Pony Express Trail, including restrictions on permitted activities in sage-grouse areas

- Continued raven control efforts

Project and Research Highlights

Dugway Proving Grounds has begun exploratory research to determine if sage-grouse are using areas of the DPG. Ground surveys, including pellet counts, were conducted in fall of 2012. Research results are not yet available. If evidence of sage-grouse use is found in the area, further research programs will be considered.

Researchers associated with the WDARM group have been very cautious about conducting research that might disrupt already stressed populations in areas where lek counts have been declining. Although there is a strong interest in documenting sage-grouse use of habitat treatment areas to better understand how sage-grouse are responding to those treatments, no collaring studies are being proposed, in order to minimize disturbance to current vulnerable populations.

Multiple habitat projects have been done recently for sage-grouse. Numbers in parentheses refer to WRI project numbers in the publicly accessible project database. Through the UPCD Central Region team, the WRI and other partners have paid for projects to remove pinyon-juniper encroaching into sage-grouse habitat, manage weeds, and seed or close roads in some cases. Projects completed in 2011 include pinyon-juniper removal in the Government Creek area (1927) and Ibapah (1928). Projects funded for 2012 with sage-grouse as a primary benefiting species, include the Clover Creek Bullhog Phase 4 (2221), The Onaqui East Bench Sagebrush Enhancement project (2220), The East Vernon Habitat Restoration (2292), the West Vernon Part 2: Black Crook (2293), and the Tintic Junction North Squarrose Knapweed Control (2232). Additional projects, particularly those involving pinyon-juniper removal, may be beneficial for sage-grouse long term because, although they are not directly improving habitat, they may provide firebreaks during future fires, or gradually contribute to corridors between isolated sage-grouse populations, if enough PJ is removed long term in the areas (e.g. East Tintic Bullhog (2222)).

Revision of Threat Matrix and Strategies Sections of Local Plan

The threat matrix was revised by the group over a series of meetings extending through the past year and a half (Table 10). Each individual threat level (the intersection of a specific threat and a specific element of the sage-grouse life cycle) in the plan was considered separately. The group debated whether additional information was known, or if conditions had changed from when the plan was written, when considering adjustments to any threat level. Numerous threat levels were adjusted accordingly. The group also clarified the wording of several of the threats. In general, changes from the original threat levels include:

- Decreased concern about home/cabin development
- Decreased concern about disease/parasite issues for sage-grouse
- Increased concern about fire, particularly in winter habitat
- Increased concern about invasive weed issues, particularly cheatgrass and knapweed
- Increased concern about energy development, particularly with regard to transmission lines and renewable energy potential impacts

Map Revisions

During the Governor's Task Force planning process in the spring of 2012, draft statewide maps for Sage-Grouse Management Areas were developed. Unique SGMAs were proposed for the Sheeprocks area and Ibapah. In June 2012, the group provided very detailed recommended edits to the maps. As part of that process, the Goshute Tribe requested that their full land be included in the Utah sage-grouse planning process by inclusion in the maps of any relevant lands for sage-grouse that fall within the boundaries of the Goshute Reservation. Comments were submitted to the state of Utah as part of the plan development process. The final version of the maps are not yet available.

Summary of Major Issues and/or Concerns

The WDARM LWG continued to develop projects and conduct outreach according to the revised strategies and actions in the local conservation plan. In the upcoming year, particular focus will be placed on:

- Public information and outreach activities , specifically those focused on recreational users of sage-grouse habitats
- Continue efforts to engage and assist counties in sage-grouse planning processes, particularly with respect to travel planning and assistance with county-level participation in the governor's sage-grouse planning efforts
- Research planning, as possible, to study the impacts of habitat improvement projects on sage-grouse movements and populations. Research on predation issues as red fox move into the Vernon area may be important to consider.
- Additional proposals for private lands projects to improve sage-grouse habitat where needed
- Additional revisions to the local conservation plan to address new information
- Continued efforts to plan and fund habitat improvement projects, with a strong focus on pinyon-juniper removal and protection of winter habitat areas

Primary threats to sage-grouse in the West Desert include cheatgrass and fire in all habitat areas, and the impacts of dispersed recreation, particularly in the Sheeprocks area. Concerted efforts will be needed to ensure that vegetation management strategies minimize weed concerns, provide firebreaks, and protect critical habitat. Efforts to reduce the negative impacts of recreation on weed dispersal, fire likelihood, and habitat fragmentation will be needed. In addition, predation management to understand and minimize the impacts of red fox invasion on sage-grouse populations appears to be an increasing need, and further discussion will be needed to determine an appropriate course of action.

Table 10. Relative importance/contribution of individual threats to reducing or degrading aspects of sage-grouse populations in the WDARM Resource Area. Threats are described in the "Threat Analysis" section of this Plan. Ranks are defined according to TNC (2005).

	Aspects of sage-grouse ecology						
Threat	Population size	Population distribution	Breeding habitat quality	Late summer/fall habitat quality	Winter habitat quality	Connectivity of seasonal habitat types	Connectivity of populations & sub-populations
Altered water distribution	-	Very High	Very High	Medium (all but Ibapah), High (Ibapah)	Low	Low	Medium
Drought	High	High	High	High	Low	Low	Low
Severe winter weather	High	High	-	-	Medium	-	-
Existing and new fences near leks	Medium	Medium	Medium	Medium	-	Medium	-
Home and cabin development	-	Low	Low	Low	Low	Low	Low
Power lines and other tall structures	-	Medium	Medium	Medium	-	Medium	-
Renewable and non-renewable energy development	-	High	Very High	High	Medium	Medium	Medium
Roads	-	Medium	Medium	Medium	Medium	Medium	Medium
Incompatible management of vegetation	Low	Medium	High	Low	Medium	Medium	Medium
Poaching	High	Low	-	-	-	-	-
Fire in sagebrush communities	-	-	Very High	Very High	Very High	Very High	High
Incompatible livestock grazing	Low	Low	High	High	Low	Low	Low
Recreation	Very High	Very High	High	Medium	Very High	Medium	Medium
Invasive/noxious weeds	-	-	Very High	Very High	Very High	High	Medium
Parasites and disease	Low	Low	-	-	-	-	-
Predation	Very High	Medium	-	-	-	-	-
Pinyon-juniper encroachment	-	-	High	High	High	High	-
Conversion to agriculture	-	-	Low	Low	-	-	-

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List of Acronyms

4WD – Four Wheel Drive vehicle
AGG - Agriculture
APHIS - Animal and Plant Health Inspection Service (under USDA)
ATV – All TerrainVehicle
BARM – Box Elder Adaptive Resource Management
BBC - Bill Barrett Corporation
BI – Berryman Institute
BLM – Bureau of Land Management
BYU – Brigham Young University
CaCoARM – Castle Country Adaptive Resource Management
CBCP – Community-Based Conservation Program
CCAA – Candidate Conservation Agreement with Assurances
CCARM – Color Country Adaptive Resource Management
CCFO – Cedar City Field Office
CCNR - Color Country Natural Resource Camps
CRM – Coordinated Resource Management
CRP – Conservation Reserve Program
CWMU – Cooperative Wildlife Management Units
DLL – Deseret Land and Livestock
DPG - Dugway Proving Grounds
EA - Environmental Assessment
EIS – Environmental Impact Statement
EQIP - Environmental Quality Incentives Program
FOSV - Friends of Strawberry Valley
LWG – Local Working Group
MSARM – Morgan/Summit Adaptive Resource Management
NEPA – National Environmental Policy Act
NRCS – Natural Resources Conservation Service
NSO – No Surface Occupancy
OHV – Off-highway Vehicle
PARM – Parker Mountain Adaptive Resource Management
PECE – Policy for Evaluation of Conservation Efforts
PJ – Pinyon Juniper
RC&D – Resource Conservation & Development Council, Inc.
RICHCO – Rich County Coordinated Resource Management
SCD – Soil Conservation District
SITLA – Utah School and Institutional Trust Lands Administration
SGI – Sage-grouse Initiative
SUU – Southern Utah University
SVARM – Strawberry Valley Adaptive Resource Management
SWARM – Southwest Desert Adaptive Resource Management
UBARM – Uintah Basin Adaptive Resource Management
UBPCD - Utah Partners for Conservation and Development
UDOT – Utah Department of Transportation
UDWR – Utah Division of Wildlife Resources
UFBF – Utah Farm Bureau Federation
UPCD – Utah Partners for Conservation and Development
USDA – United States Department of Agriculture
USDA/WS – United States Department of Agriculture Wildlife Services
USFS – United States Forest Service
USFWS – United States Fish and Wildlife Services
USU – Utah State University
USUEXT – Utah State University Extension

WDARM – West Desert Adaptive Resource Management
WHIP - Wildlife Habitat Incentives Program
WIC -- Wyoming Interstate Company
WMA – Wildlife Management Area
WMU – Wildlife Management Unit
WNV – West Nile Virus
WRI – Watershed Restoration Initiative
WS - Wildlife Services (under USDA)