

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

2013-2014 Annual Report



Photos by Todd Black

October 2014

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*; sage-grouse) as a candidate species for listing for protection under the Endangered Species Act of 1973 (USFWS 2010). This report summarizes the 2013-14 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.utahcbc.org. In 2013-14 each LWG reviewed their conservation plan to ensure the plan embraced and fully implemented the objectives and strategies contained in the Utah Sage-grouse Conservation Plan (Utah Plan).

The CBCP worked closely with LWG members, state and federal, and private partners to implement the Utah's Plan goal of protecting 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 earlier efforts of LWGs to protect sage-grouse.

Executive Summary

The Utah Community-based Conservation Program (CBCP) encompasses the historical range of greater sage-grouse in Utah as identified in the Strategic Management Plan for Sage-grouse (Figure 1) that 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 April of 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 Utah Plan was based largely on LWG efforts. 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 completed in 2013-2014 to implement the conservation strategies and actions identified in the Utah Plan. In February 2014, the Utah CBCP organized and conducted a Utah Sage-grouse Summit. Hosted by the UDWR in their main auditorium, the Summit drew over 250 participants on-site and another 80 participants range wide for two days to discuss important conservation issues. The purpose of the Summit was to enhance participant understanding of the Utah Plan and more specifically the roles they could play in its successful implementation. The Utah CBCP is also coordinating the International Sage-grouse Forum which will be held in Salt Lake City, Utah, November 13-14, 2014. The Forum has been sanctioned by the Western Association of Fish and Wildlife Agencies. The web site address is www.sage-grouseforum.org.

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CBCP 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, Utah Plan 2013).
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.

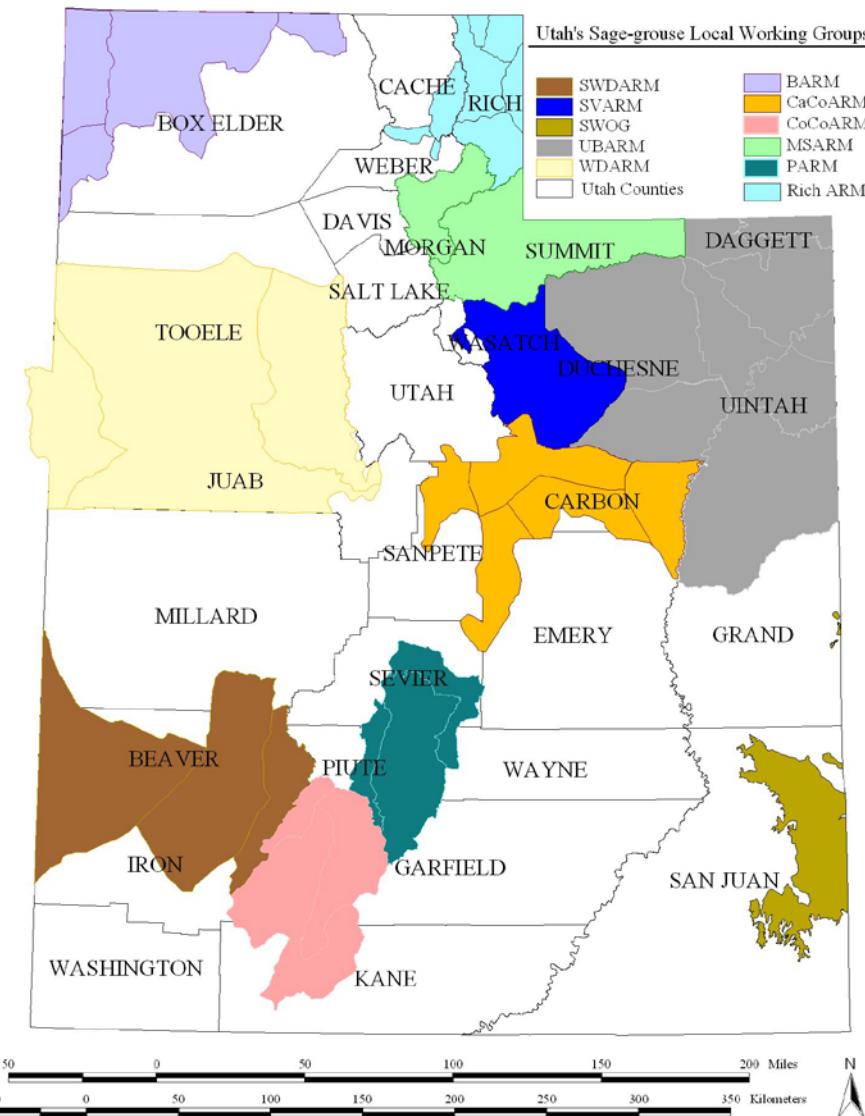


Figure 1. Utah Sage-grouse Conservation Areas, Utah Strategic Management Plan for Sage-grouse (UDWR 2009).

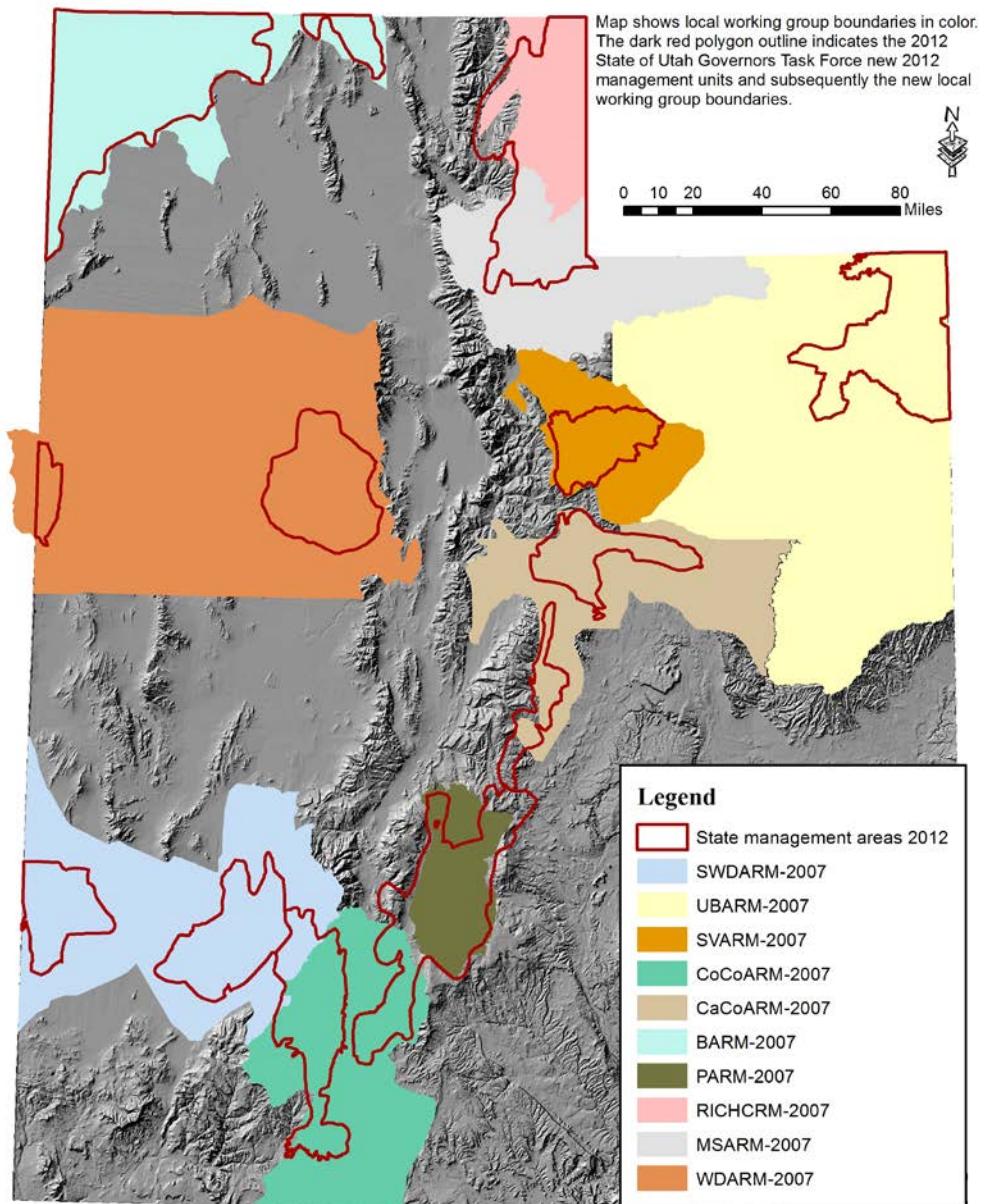


Figure 2. Location of Sage-grouse Management Areas (SGMAs) within Utah Sage-grouse Conservation Areas (Utah Plan 2013). The SGMAs (outlined in red) represent the best opportunity for high-value, focused conservation efforts for the species in Utah. This approach outlined in the Utah Plan recognized current land uses as 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

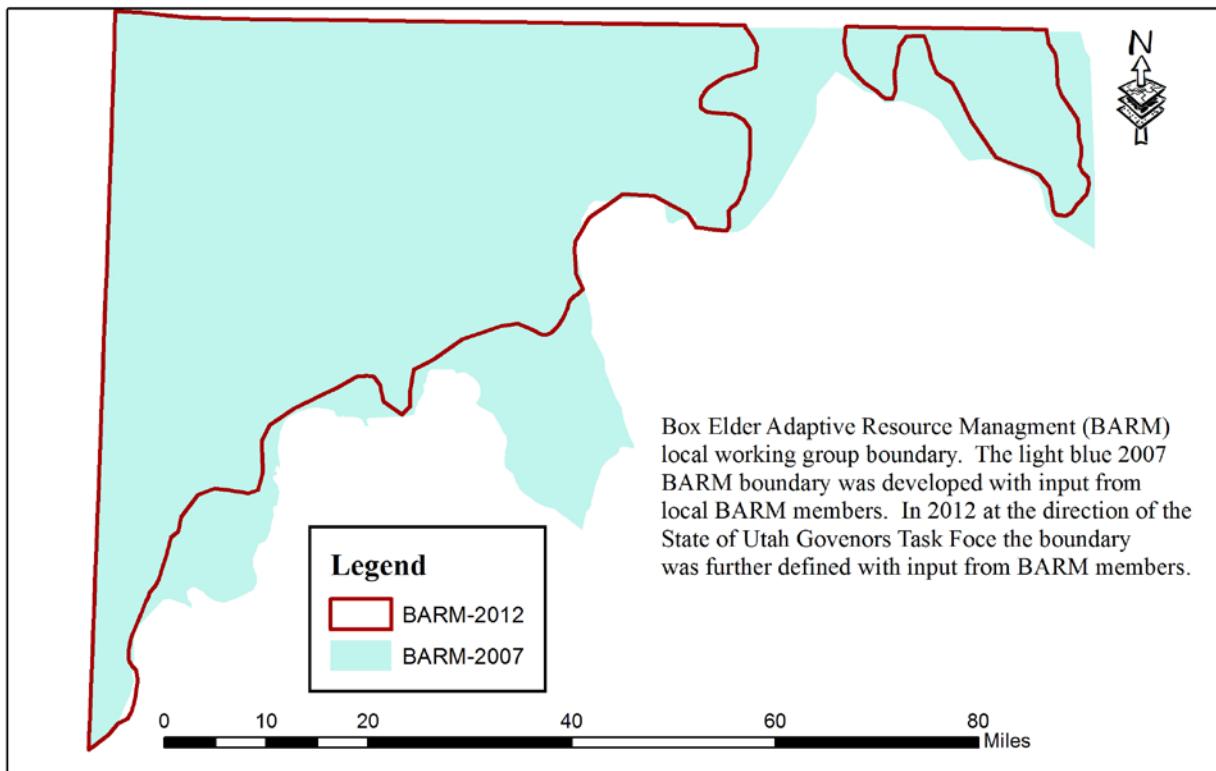


Figure 3. The Box Elder Adaptive Resource Management (BARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.



The Box Elder Adaptive Resource Management Plan (BARM) Sage-grouse Local Working Group (LWG) was organized in 2001. In 2011 the West Box Elder Coordinated Resource Management (WBECRM) was formed. The WBECRM 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 during the year to address and discuss sage-grouse specific issues of concern, management actions, and strategies. The subcommittee reports these to the WBECRM. Dr. David Dahlgren is the sage-grouse committee representative to the CRM group.

Description of Area and General Population Information

The WBECRM 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://utahcscp.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.

CRM/Sage-grouse Committee Meetings:

Jul. 16, 2013 – 10-15 attendees
Sept. 17, 2013 – 15-20 attendees
Nov. 19, 2013 – 20-25 attendees
Jan. 21, 2014 – 20-25 attendees
Apr. 15, 2014 – 15-20 attendees
Jun. 17, 2014 – 15-20 attendees

Field Tours:

Date: Sept. 3-4, 2013 - Attendees: 21 (Organizations: Region 6 USFWS Staff, UDWR, Box Elder and Rich County Commissioners, USU Extension, Landowner/Producers, UDAF GIP, BLM)

Topics: The primary purpose of this tour was to show Region 6 USFWS staff the efforts Utah was making to implement the Sage-Grouse Plan and to connect federal staff with local government and landowners. We visited multiple sites in West Box Elder County on the first day. We visited conifer removal sites across the SGMA. We saw high quality sage-grouse habitat on private lands and talked about the importance of private land conservation in our very public land state. We visited low elevation sagebrush sites used as winter, lek, and nesting habitat, and how we are using fire-breaks to protect these areas. We then returned to Logan, and had a presentation by UDAF GIP on the Three Creeks project in Rich County. We talked about grazing systems and how they might influence vegetation across the landscape. We visited Rich County the following day, visiting Three Creeks along Big Creek where future projects are planned. We also visited DLL, and talked about various management practices they have used to work within sagebrush systems. During the entire 2-day tour we discussed the use of science and monitoring to help evaluate implementation of Utah's Sage-Grouse Plan and how they related to sage-grouse conservation.

Date: July 9, 2014 - Attendees: 15 (Organizations: BLM, GIP, Conservation District, USU Ext, UDWR, UDNR, Private Producers, USFWS Partners Program)

Topics: Our primary objective was to revise the Dry Basin Proposed Project (Pinyon-Juniper [PJ] treatment and fire breaks). This project was set to be completed in the Fall 2014. However, there was disagreement on how the fire breaks were going to be implemented, and the project was postponed. We discussed the importance of the area for sage-grouse, as a very large lek is located within the basin. Plans were made for two different firebreaks along the outside edge of the basin. We also discussed the PJ treatment and how much area would be removed with various methods.

Projects Proposed by the CRM and Sage-grouse Committee:

Name	Treatment Type	Proposed Date	Partners	Comments
Dry Basin Project	Pinyon-Juniper removal and fire break	Fall 2015	Cons. District, GIP, UDWR, USFWS, BLM	Near a large sage-grouse lek, fire breaks evaluated by GIP

				and USU Ext.
BLM PJ Park Valley	Pinyon-Juniper Removal	Fall 2014	BLM, UDWR, USU Ext.	Being evaluated by USU Ext.
Multiple SGI PJ Removal on Private Lands	Pinyon-Juniper Removal	Fall 2014	NRCS-SGI, GIP, Cons. District	This includes various PJ projects across West Box Elder

Project and Research Highlights:

USU graduate student, Charles Sanford, and technicians trapped and marked over 50 sage-grouse this last late winter and spring. Of the marked birds, 42 were tracked throughout the field season. Nest initiation was 79% (n=33), and apparent nest survival was 72% (n=24). These are higher than average reproductive rates compared to reported literature and past years. Brood survival was also good this summer, and we expect a good population going into the fall. Notably, 5 radio-marked females suffered mortality during reproductive activities. PJ removal areas were monitored with sage-grouse pellet counts and vegetation transects, and then compared to nearby untreated PJ areas and intact sagebrush communities. So far it looks like many treated PJ areas are being used, even newly treated locations, but not to the extent of intact sagebrush. Untreated areas have by far the least amount of pellet detections. Raven surveys were set up in Grouse Creek Valley, Lynn Valley, Park Valley, and Dove Creek (heading south) areas. These are in an attempt to consider raven control measures in West Box Elder. No data is available at this time.

The West Box Elder CRM group is an active and self-sufficient group, with a local facilitator (i.e., Diane Tanner, local landowner). They have been meeting regularly to discuss project in support of the Utah Plan implementation. They have also dealt with conflict and setbacks in a productive way. For example, the Dry Basin Project hit a road block this last spring because of regulatory decisions and lack of communication within the group. Instead of letting this experience dissuade them, the group decided to come up with a better communication system for project planning and a yearly schedule of meetings, each with a specific purpose and some for projects, was set up so that clear and open project planning could occur between all stakeholders. This demonstrated a resiliency for the group as a whole, and provides confidence in future endeavors. Additionally, the sub-committees are meeting regularly and many projects are moving forward, specifically PJ treatment projects. The landscape is clearly changing across West Box Elder where PJ has encroached into sagebrush communities. West Box Elder continues to be the place where significant amounts of NRCS-SGI funds are being spent on PJ removal, not only within the state but across sage-grouse range.

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

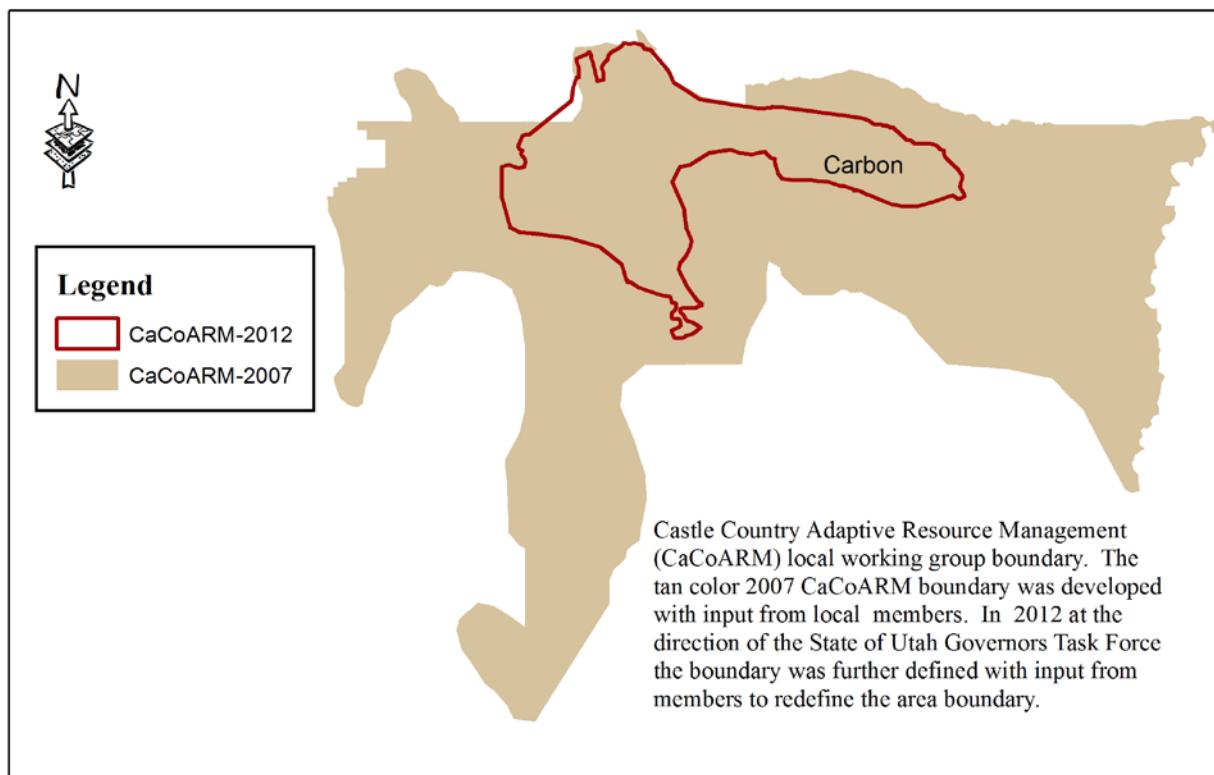


Figure 4. The Castle Country Adaptive Resource Management (CaCoARM) Sage-grouse Local Working Group and new Sage-grouse Management Area. The SGMA include parts of Carbon County.

The Castle Country Adaptive Resource Management Plan (CaCoARM) Sage-grouse Local Working Group was organized in 2004. Lorien Belton is the current facilitator.



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://utahcbc.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 CaCoARM LWG have been included in the Parker Mountain - Emery Sage-grouse Management area.

Project and Research Highlights

The CaCoARM group transitioned to a new facilitator just prior to the beginning of this reporting period. When not focused on understanding or critiquing current policy issues, much of the work in the last year and a half has been focused on knowledge sharing and relationship building. In July 2014, a field tour to the Tavaputs Plateau provided an opportunity for several landowners to showcase their management projects and for all LWG members in attendance to continue building relationships and learning about their respective programs. Other meetings have provided opportunities for group members to learn more about the NRCS Sage-Grouse Initiative, and the Watershed Restoration Initiative Funding opportunities as they pertain to sage-grouse.

The LWG provide a unique and personal opportunity for communication and feedback among stakeholders. One key role is facilitating communication between the diverse members of the group and any entities which seek input based on local knowledge. Another is ensuring that large scale processes, such as federal planning efforts, are represented accurately and in a timely manner to the local participants in the group. Between January 2013 and August 2014, the LWGs provided an avenue for information flow about the federal planning processes, including facilitated comment opportunities on the BLM/USFS Draft EIS for sage-grouse in Utah. Updates to the state plan were also communicated via the LWG.

The CaCoARM group reviewed key sections of the BLM-USFS draft sage-grouse EIS for Utah. Although the group did not reach consensus on all topics, multiple areas of agreement and concern were submitted to the federal agencies during the comment period.

The CaCoARM group did not have any WRI projects for sage-grouse proposed in the area during this reporting period. However, additional project development for submission to the WRI funding may be a future opportunity for the LWG. CaCoARM meetings also provide opportunities for energy industry representatives to ask questions, get new representatives up to speed on sage-grouse issues, present concerns, and see habitat work.

Continuing to develop trust relationships and empowering a diversity of local individuals to address local sage-grouse resource concerns are the primary (if informal) goals of the LWG. Moving forward, it will be critical to develop a variety of projects within the group that will appeal to the diversity of challenges and constituencies within the group.

The following update comes directly from Natasha Gruber, a Sage-Grouse Initiative Biologist in Utah. "Local Boy Scouts, Utah State University- Price Wildlife club, Utah Dedicated Hunters, private landowners, NRCS, and UT DWR all came together to help accomplish a large scale fence marking project for greater sage-grouse. Forty-two motivated volunteers came to help mark 10 miles of barbed wire fence to prevent sage-grouse collisions near leks (breeding grounds) in Emma Park, just north of Price, Utah. The white vinyl markers were donated by the Natural Resource Conservation Service (NRCS) of Utah and also hunters who are part of the Dedicated Hunter Program here in Utah. Recent research has shown that these fence markers can help reduce sage-grouse fence collisions by 83%."

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-renewable 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

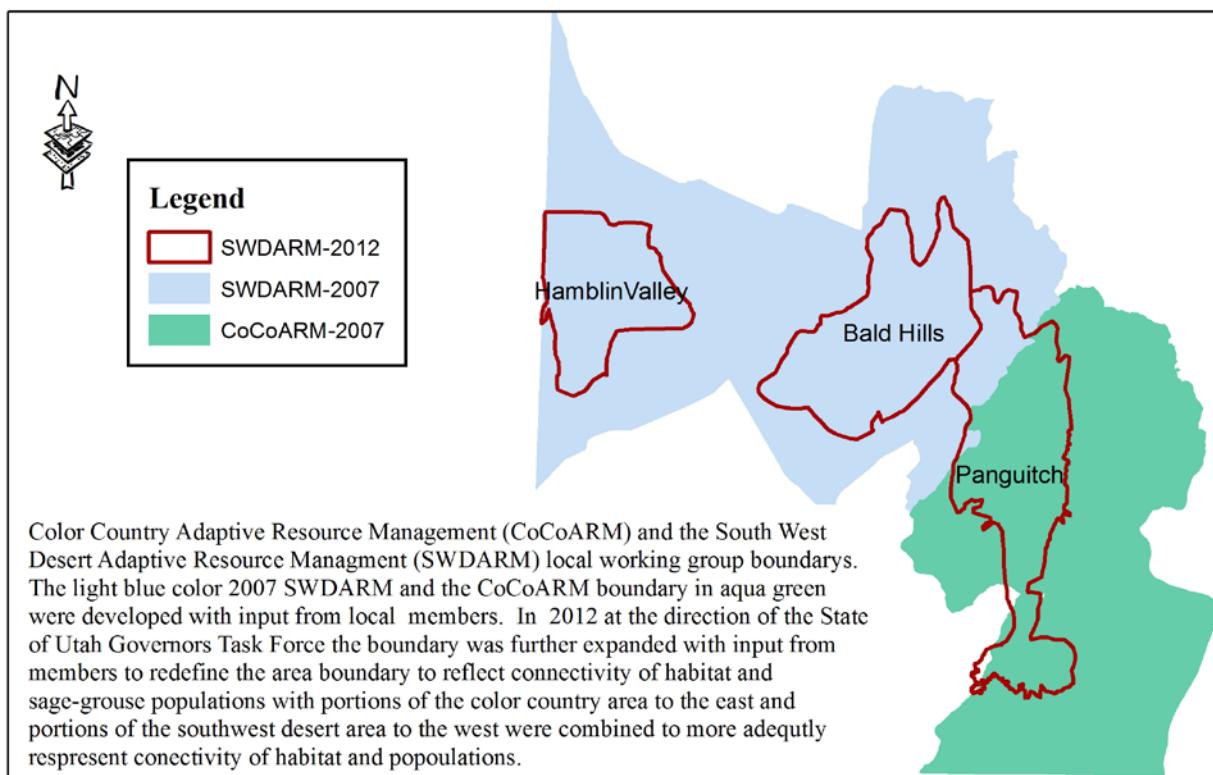


Figure 5. The Color County Adaptive Resource Management (CCARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.



The Color Country Adaptive Resource Management (CCARM) Sage-grouse Local working Group is facilitated by Dr. Nicki Frey. 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.

Description of Area and General Population Information

The Panguitch Management Area is located in southern Utah, in Kane, Garfield, Paiute and Wayne Counties, incorporating more than a dozen, often connected leks. 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.

Project and Research Highlights

The Color Country local working group is currently working collaboratively on a satellite telemetry project funded by the BLM. This project is conducted by Dr. Frey; however members of CCARM regularly volunteer their time to assist with trapping, gain private lands access, and troubleshoot the project.

The study began in 2013, to investigate Greater sage-grouse use of Ford Pasture and Sink Valley, critical areas in the Panguitch WMA. Currently we are following 8 grouse from Panguitch to Sink Valley. We are gathering information on inter-lek movements, corridors, habitat use, and use of habitat treatments.

To assist the Alton Coal Development LLC with their mitigation, we will also deploy 2 transmitters for this company in the coming fall. The data from these 2 transmitters will be pooled with the data collected from BLM to increase our sample size. However, the data will also be kept separate to allow for individual reports for mitigation.

Our annual field tour was conducted in August rather than June this year. This allowed time for advertising the field tour, to increase public participation. We focused on the information we are gaining from the telemetry project; we traveled to the focal points of grouse activity from Sink Valley to Panguitch.

In 2013, Dr. Frey initiated her Wildlife Research Education Network program. In this program, she instructs high school students on the scientific method, using actual data to allow students to investigate. In 2013, she instructed 20 students from Kanab during a 2-day module. In this time, students used real-timed data collected from a satellite telemetry study to pose questions and formulate hypotheses about Greater sage-grouse.

Additionally, Dr. Frey participated in the Upper Sevier River Natural Resources Field Day, organized by Kevin Heaton, an active member of CCARM. This field day educates 400 K-6 students. As an instructor, Dr. Frey taught students about Greater sage-grouse conservation and the things being done in the Panguitch WMA to promote Greater sage-grouse.

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).

Threat	Aspects of Sage-grouse population in the CoCARM Resource Area								
	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

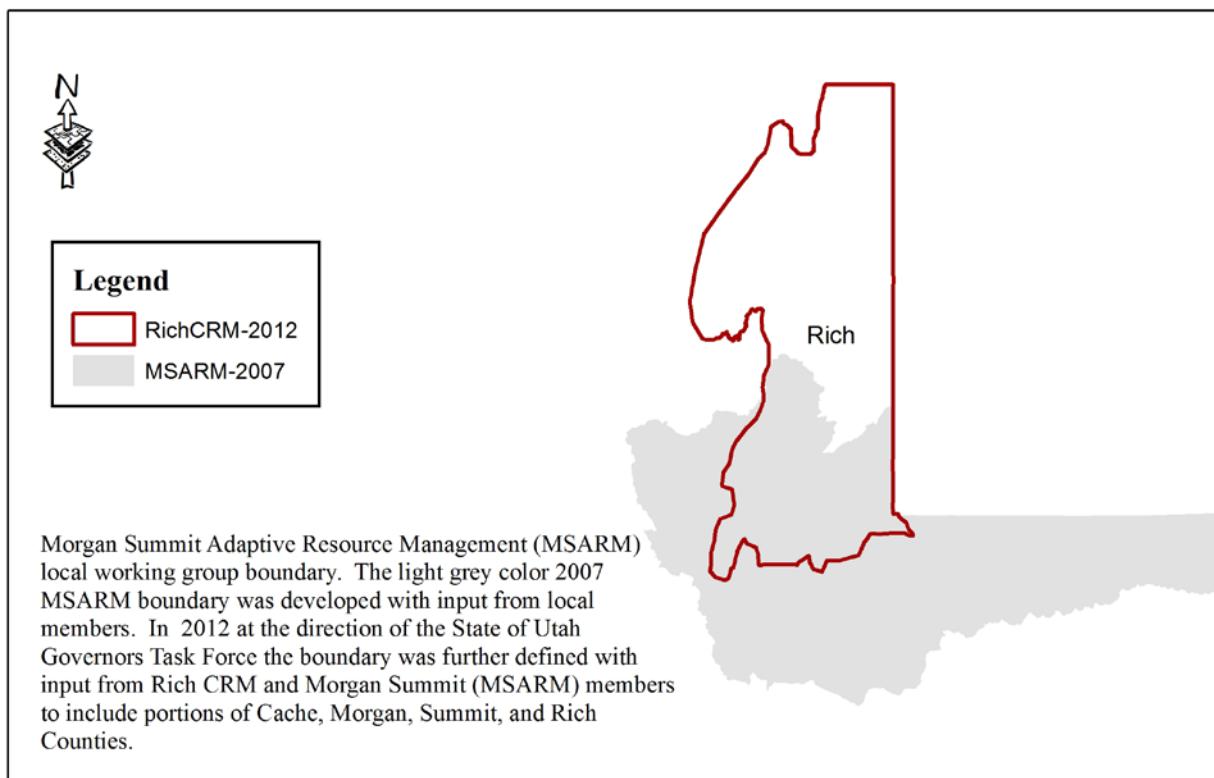


Figure 6. The Morgan-Summit Adaptive Resource Management (MSARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). The MSARM has been incorporated into the Rich-Morgan-Summit SGMA.

The Morgan-Summit Adaptive Resource Management (MSARM) sage-grouse local working group is facilitated by Ms. Lorien Belton.



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. 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.

Project and Research Highlights

Early in the reporting period, this group experienced a great deal of turnover, with changes within key positions at UDWR, both counties, NRCS's SGI, and the conservation district. The strength of the local working group model, however, is the group provides a structure for new people to quickly learn about local sage-grouse issues and become quickly linked in to a network that would otherwise take many years to build personally. Introductions are made quickly and new participants have access to past minutes and other information stored on the Utah CBCP website.

Updates regarding both state and federal planning processes, as well as implementation details for the Utah state sage-grouse plan, were presented and discussed at all pertinent meetings. In several cases, clarification questions or concerns that arose during meetings were relayed to appropriate authorities in the state government.

After several years of planning, a research project has been funded to study the sage-grouse population in the MSARM area for the first time. This is a critical first step in understanding the birds' movements in the area. Data collection will begin in the spring of 2015, using both radio collars and GPS collars on the birds. The knowledge gained in this study will be instrumental in designing future habitat improvement projects.

Several sage-grouse habitat improvement projects on private land in the area have been done or are in the planning and implementation phases. These include firebreaks in known sage-grouse nesting habitat, which will likely also improve understory diversity and quality, grazing changes designed to improve visibility on lek areas, and grazing improvement and water development efforts that will benefit both sage-grouse and livestock.

County planning staff from both Morgan and Summit Counties have been receptive to information about sage-grouse. Ensuring that County staff and other local government officials are aware of sage-grouse issues has been a long-term goal for the MSARM group. During the reporting period, members of the LWG have worked together to ensure that county staff have access to and knowledge of critical sage-grouse information. This is important since the majority of land in both counties is private, and conservation measures are voluntary. Therefore, county actions based on full knowledge of the sage-grouse ecological and political context is critical to conservation efforts in the area. Most recently, the MSARM LWG has become a clearinghouse for information regarding a potential development in the East Canyon reservoir area. LWG members have attended county planning meetings to help ensure that accurate information is available.

Of most immediate concern to the MSARM group is the potential development in the East Canyon area. LWG members attend appropriate public meetings, provide information on sage-grouse to local officials, and will continue to monitor the situation. The new research project will be critical to many future efforts within the group. Development, conservation easements, and strategic protection of sage-grouse in the primarily private land areas with the MSARM boundary will continue to be an ongoing challenge. Additional efforts will be made to ensure that MSARM area livestock producers with interests in other areas (for example, Strawberry

Valley or West Desert grazing leases) with sage-grouse habitat are given the opportunity to comment on and understand sage-grouse issues in appropriate non-MSARM areas.

As relevant, MSARM will review UPCD/WI projects proposed in the area. In 2013-14, only one project was applicable. The group provided design and implementation suggestions for the project, which focused on mowing sagebrush strategically for fire protection in a sage-grouse habitat areas. The project was subsequently removed from WRI funding channels and managed by the Grazing Improvement Program.

The Morgan Conservation District will sponsor the 2014 field tour as an extension of an existing event generally well-attended by local livestock producers and landowners.

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.

Threat	Aspects of Sage-grouse population in the MSARM Resource Area								
	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 (<i>very little known</i>)	Connectivity of populations & sub-populations (<i>very little known</i>)
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 (<i>very little known</i>)	-	Medium	Medium	-	-	-	-	-	-
Pinyon-juniper encroachment	-	-	-	Low	Low	Low	Low	Low	Low

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

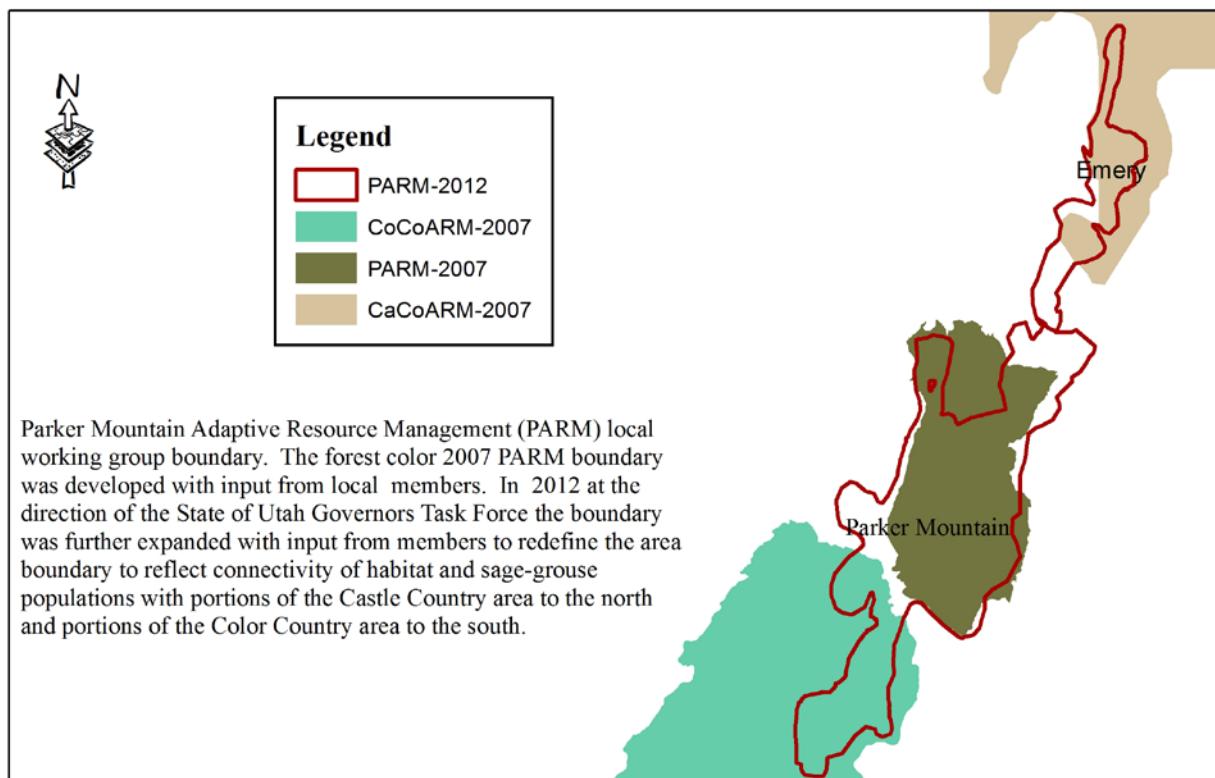


Figure 7. The Parker Mountain – Emery County Adaptive Resource Management (PARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). Emery County has been incorporated into Parker Mountain – Emery SGMA.



The Parker Mountain Adaptive Resource Management Plan (PARM) Sage-grouse Local Working Group was organized in 1998. PARM consists of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals. This LWG is currently facilitated by Dr. Dave Dahlgren.

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://utahcscp.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.

Meetings:

Nov. 7, 2013 – 18 attendees (Loa Courthouse)

Feb. 4, 2014 – 20 attendees (Loa Courthouse)

Apr. 14, 2014 – 16 attendees (Loa Courthouse) – meeting and morning Lek Count

Field Tours:

Date: Aug. 8, 2013 - Attendees : 21 (Organizations Represented: USFS, UDWR, BLM, USFWS, Grazing Association, Wayne County Commission, SITLA, GIP, USU Extension)

Topics: We discussed sage-grouse use of livestock areas for lekking habitat. Parker Mountain has a long history of sage-grouse males selecting areas where livestock have bedded or watered in combination for their leks. We visited a recently renovated pond where a new sage-grouse lek began in 2013. We also discussed Utah Prairie Dog issues, and why the USFWS cannot count dogs on SITLA towards recovery goals. We visited Forshea Draw which was treated with Spike Fall 2012. We discussed treatment and kill rates on sagebrush. Some felt the effect was just right, others felt like the overall kill on sagebrush was a little too much. All agreed that in the long run it probably wouldn't hurt the sage-grouse population overall, and that mountain big sagebrush communities on Parker Mountain tend to recover rather quickly (< 10 years) and continued sagebrush treatment in mountain sagebrush communities at the higher elevations should be part of future conservation efforts both for sage-grouse and livestock.

Date: June 26, 2014 - Attendees: 29 (Organizations Represented: USFS, UDWR, BLM, USFWS, TNC, Grazing Association, Wayne County Commission, Emery County Commission, SITLA, GIP, RC&D, Farm Bureau, USU Extension)

Topics: Utah Prairie Dog habitat was discussed and future management on USFS lands, especially near Big Lake on the Dixie National Forest. SITLA received a proposal from TNC and USFWS to purchase land through a federal grant near the Tanks Colony and Forshea Draw on the Parker SITLA Block for prairie dog conservation. Approximately 1500 acres was proposed in total. Discussions ensued to consider concerns over such a purchase. Local grazing association and county commissioners were concerned about philosophical differences for using federal funds to purchase private lands, future grazing rights, past investments, and maintaining current grazing regimes. USFWS and UDWR expressed interest in purchasing the land so that prairie dogs within those areas could be counted towards a delisting of the species. Currently only dogs on federal or conservation easement lands are counted towards population objectives within the Utah Prairie Dog Recovery Plan. All involved came to a better appreciation of local concerns as well as larger scale issues for prairie dogs. Sagebrush treatments, especially past large scale spike treatments in Butte, South, Nick's, Forshea, and Chicken Springs pastures were discussed. We discussed USU's, in association with SITLA and GIP, vegetation study within

these areas. USU is monitoring vegetation response over time scales (time since treatment – each pasture was treated in a different year going back to the mid-2000s) by treatment, response of passerine sagebrush obligates and sage-grouse as well.

Projects Proposed with benefit for sage-grouse:

Name	Treatment Type	Proposed Date	Partners	Comments
Cedar Groves	Pinyon-Juniper removal	Fall 2014	BLM, UDWR, WRI	Near multiple sage-grouse leks
Grass Valley East Rim	Pinyon-Juniper removal	Fall 2014	BLM, UDWR, WRI	Sage-grouse winter and nesting habitat
Bar J Ranch	Dixie Harrow Pinyon-Juniper Removal	NA	UDWR, WRI, Private	Expanding fragmented sagebrush areas
Mormon Peak	Pinyon-Juniper removal	2015 WRI Cycle	WRI, UDWR, SITLA	Expanding space in sage-grouse habitat
Mytogi Mountain Watershed Restoration	Pinyon-Juniper removal, Spike, Aspen Regeneration	TBD	USFS, BLM, UDWR	NEPA would need to be completed for USFS and BLM

Project and Research Highlights:

Currently there is a research project being conducted by USU in association with SITLA and GIP. Large (~500 – 1000 ac) sagebrush areas on Parker Mountain were treated with Tebuthiuron (i.e., Spike) over the last 10 years, each in a different year, in the upper elevation Nick's, Chicken Springs, South, Forshea, and Buttes pastures. Nearby untreated reference areas have also been established to provide baseline information within pastures. Time since treatment is successively different for each pasture. Therefore, we can consider forage, vegetation community, and wildlife response to these treatments over successive recovery periods. The objectives are to; 1) model a forage response curve against shrub cover for time since treatment, 2) evaluate herbaceous and shrub cover since treatment, and 3) monitor sagebrush obligate bird use of treated areas. Additionally, random vegetation sampling transects across the entire sage-grouse breeding habitats on Parker Mountain have been established based on historic nesting data. These transects will be used to describe sage-grouse breeding habitat on the mountain.

PARM proposed a boundary change to the Parker-Emery SGMA in February 2014. An exclusion for agricultural lands in Fremont River Valley (near Loa and Bicknell) was proposed (~35,000 ac). An addition (~28,000 ac) north of Koosharem Reservoir encompassing Mormon

Mountain and other SITLA, USFS, and private lands was also proposed. The Public Lands and Policy Coordination Office is currently reviewing this request. Articles in the local newspaper and The Communicator (USU Extension) were published detailing PARM's proposal.

PARM includes a diverse group of stakeholders. Federal, State, and County level personnel regularly attended and participated in this local community-based process. During the June 2014 field tour multiple private landowners and permittees attended to discuss issues with state and federal agency personnel. Additionally, an uncontested candidate running for the Wayne County Commission also attended and commented how impressed he was with how PARM addresses complex issues. The LWG process helps with local and regional communication, not only for project implementation but to resolve conflict and increase communication between constituent groups. For example, the proposed boundary changes for the Parker-Emery SGMA demonstrated to local stakeholders that PARM has their interest at heart while also providing important data-driven justification for proposed changes to fit within regional and statewide sage-grouse conservation objectives. This is an example of a benefit the LWG process provides which is difficult to quantify and assess impact.

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

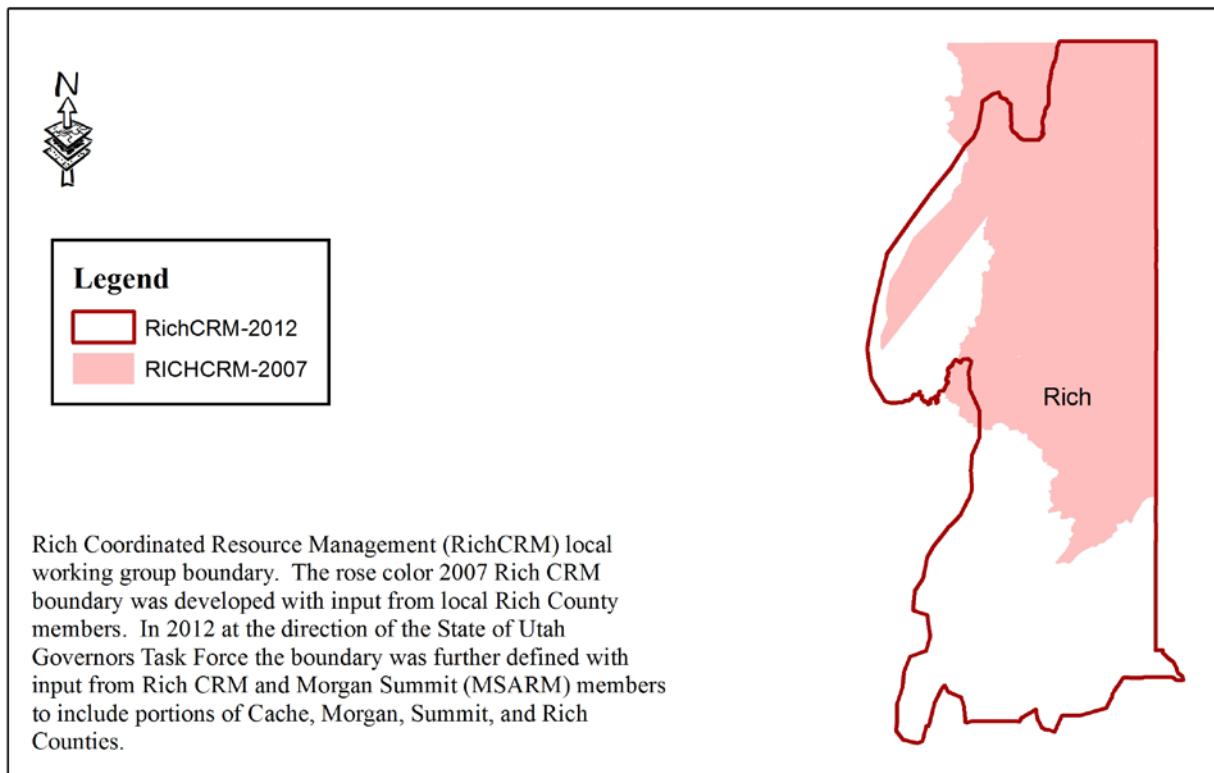


Figure 8. The Rich County Coordinated Resource Management (RICHCO) Sage-grouse Local Working Group and the new Sage-grouse Management Area (SGMA). The SGMA includes portions of Morgan and Summit Counties.



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

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.

Meetings:

Nov. 21, 2013 (Board Meeting) – 10 attendees

Dec. 2013 – weather delay

Jan. 2014 – weather delay

Apr. 10, 2014 – 20 attendees

Field Tours:

Date: July 16, 2013- Attendees: 18 (Organizations Represented: UDWR, UDNR, USFS, USU Ext., BLM, QRM, NRCS, Conservation District, Grazing Association)

Topics: We met at the DLL Ranch gate just south of Woodruff. We visited an alfalfa seeding on DLL, where sage-grouse broods have been spending the summer. We also visited the UDWR Woodruff Coop Wildlife Area and looked at recent and older sagebrush treatment sites. We talked about sage-grouse and big game use of these areas. Sage-grouse primarily use the area in the winter with some lekking present on the Coop. We then visited some historic treatment areas on DLL at lower elevations. They had crested wheatgrass in them, and were at one time crested wheatgrass monocultures, but sagebrush has returned, albeit at lower sagebrush canopy cover than ecological site descriptions. The area is used as wintering grounds as long as snow pack is not too much. We talked about sage-grouse winter habitat and future management within WRI.

Date: Sept. 4-5, 2013- Attendees: 21 (Organizations: Region 6 USFWS Staff, UDWR, Box Elder and Rich County Commissioners, USU Extension, Landowner/Producers, UDAF GIP, BLM)

Topics: The primary purpose of this tour was to show Region 6 USFWS staff the efforts Utah was making to implement the Sage-Grouse Plan and to connect federal staff with local government and landowners. We visited multiple sites in West Box Elder County on the first day. We visited PJ treated sites across the SGMA. We saw high quality sage-grouse habitat on private lands and talked about the importance of private land conservation in our very public land state. We visited low elevation sagebrush sites in Box Elder County used as winter, lek, and nesting habitat, and how we are using fire-breaks to protect these areas. We then returned to Logan, and had a presentation by UDAF GIP on the Three Creeks project in Rich County. We talked about grazing systems and how they might influence vegetation across the landscape. We visited Rich County the following day, visiting Three Creeks along Big Creek where future projects are planned. We also visited DLL, and talked about various management practices they have used to work within sagebrush systems. During the entire 2-day tour we discussed the use of science and monitoring to help evaluate implementation of Utah's Sage-Grouse Plan and how they related to sage-grouse conservation.

Date: June 24, 2014 - Attendees: 13 (Organizations Represented: UDWR, USFS, USU Ext., BLM, QRM, NRCS, Conservation District, Grazing Association)

Topics: We met in Woodruff and drove south to a private land property where a bullhog was in the middle of treating a Pinyon-Juniper stand. We witnessed how the bullhog works up close. We traveled through the proposed treatment site, which would connect lekking and nesting habitat to higher elevation summer habitat, and possibly serve as wintering area. We then traveled up to the USFS property north and west of Big Creek. A sagebrush treatment with Dixie Harrow (2-way) was implemented the previous growing season. We looked at the treatment response and how a mosaic of treatment can take place within mountain big sagebrush for sage-grouse brooding habitat. We then traveled to a lower elevation site just west of Randolph, where Adam Brewerton (UDWR Sensitive Species Biologist) had set traps for pocket gophers. We witnessed the trapping of an Idaho Pocket Gopher. Adam explained the biology of this rodent and how Idaho Pocket Gophers have been recently rediscovered in northern Utah.

Projects Proposed:

Name	Treatment Type	Proposed Date	Partners	Comments
North of Woodruff	Pinyon-Juniper removal	Summer 2014	NRCS – SGI, producers	Near a couple sage-grouse leks
Water Improvement and PJ removal	Tank and waterline development	Fall 2014	NRCS – SGI, Producers, DLL	Sage-grouse Habitat
USFS Aspen Regeneration and Fuels Reduction	Fire – Aspen Stands	Fall 2014	BLM	Douglas Fir encroachment
Three Creeks – Grazing Improvement	Grazing System Changes	2015	GIP, Producers, SGI, USU	High Intensity – Short Duration Grazing System

Project and Research Highlights:

Total male lek counts during the spring of 2014 are up by 74% compared to 2013 counts. After a successful trapping season, USU graduate student Seth Dettenmaier and his technicians captured over 90 female sage-grouse, and ended up with 28 and 21 hens remaining on Three Creeks and DLL, respectively. Nest initiation rates continued to be lower than expected on DLL, while Three Creeks improved considerably with 52% (n=11) and 85.7% (n=24) of radio-marked hens initiating nests on DLL and Three Creeks, respectively. Modeled nest survival was 39.5% (n=6) and 10.6% (n=6) on DLL and Three Creeks, respectively. There were also 3 renest attempts after first nest failures at Three Creeks. Brood survival was particularly good this year compared to previous years.

The Rich CRM includes a diverse group of stakeholders from private and public organizations. The communication and collaborative process of the CRM allowed for increased understanding of various view points as well as oversight to upcoming projects. The Rich County Commission considers the CRM its official body for reviewing and approving projects that occur within the county. For example, all WRI projects that are going to be implemented are reviewed by the CRM with at least one county commissioner present. This allows for much greater inter-organizational communication of projects and more informed representatives of all participating entities.

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

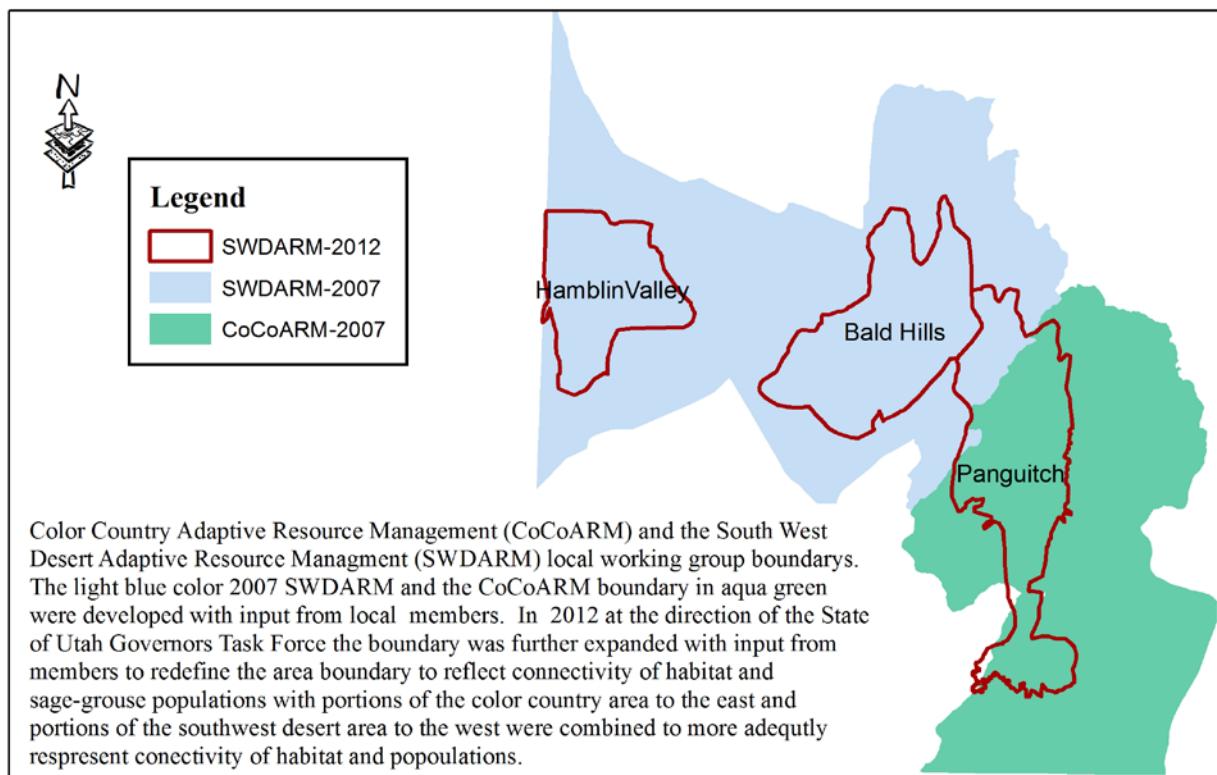


Figure 9. The Southwest Desert Adaptive Resource Management (SWARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). The SWARM area includes the Hamlin Valley and Bald Hills SGMA.



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. We continue to meet every other month to discuss issues and concerns with grouse management and conservation in our region.

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 SGAs 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.

Project and Research Highlights

BLM Cedar City Field Office fuels team has started coming to the meetings to discuss fire rehabilitation projects, seed mixes, and project fuels treatments. There are many WRI projects in action in this region, we have requested that the WRI data be capable of filtering by target species so that we could find those projects that are working directly for Greater sage-grouse. Then we could be proactive in assisting with management plans for all agency projects.

To date, many project leaders discuss projects potentially affecting GRSG with the local working group, particularly those of BLM. But often, we won't know of a project until the WRI projects are presented in December/January of each year.

The big project in our local working group is the Sigurd to Redbutte Transmission line project. The transmission line is a project by Rocky Mountain Power/Pacificorp; the work is conducted in the Bald Hills WMA. The mitigation for the project includes off-site mitigation in the form of habitat treatments, mostly pinyon-juniper removal, and Greater sage-grouse monitoring.

BLM has conducted vegetation treatments to increase connectivity in the landscape that will help grouse and several other species. We reviewed those treatments in our annual field tour in June 2014. We are very excited about the possibilities of this project and how we think grouse in the Parowan Gap and Long Hollow regions will respond.

Dr. Frey initiated a satellite telemetry study in 2014 to monitor sage grouse response to transmission line development. The acquisition of this project was a direct result of the collaboration of SWARM members over the last 10 years. This graduate research project monitors 20 grouse from the Mud Springs and Little Horse Valley leks. The research will also answer questions regarding movement patterns, timing of movements, use of habitat treatments and connectivity. Only 4 months into data collection, we have already documented some very interesting movements. We have demonstrated connectivity across Interstate 15, which is extremely exciting.

The success of the Sigurd-Red Butte telemetry study has renewed interest in studying Hamlin Valley, a key population of grouse in southern Utah. Hamlin Valley may provide connectivity of Utah grouse to Nevada. We are discussing this project with in SWARM currently.

We hosted a field tour in June 2014 to highlight the activities of the Sigurd-Red Butte mitigation projects, and to discuss fire rehabilitation in the Bald Hills area. The “objectives based” field tour was attended by 10 people, including 2 representatives of Rocky Mountain Power.

In 2013, Dr. Frey initiated her Wildlife Research Education Network program. In this program, she instructs high school students on the scientific method, using actual data to allow students to investigate. In 2013, she instructed 34 students from Iron County during a 6-day module. In this time, students used real-timed data collected from a satellite telemetry study to pose questions and formulate hypotheses about Greater sage-grouse. They analyzed the data using Excel, created graphs and tables, and used power-point to present their results to the class. Two students were interested enough to carry-on with their research. Dr. Frey mentored them for 2 months to continue to evaluate the grouse data; they presented their research at an FFA contest in Logan, Utah, in March 2014, winning second place.

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).

Threat	Aspects of Sage-grouse population in the SWARM Resource Area							
	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

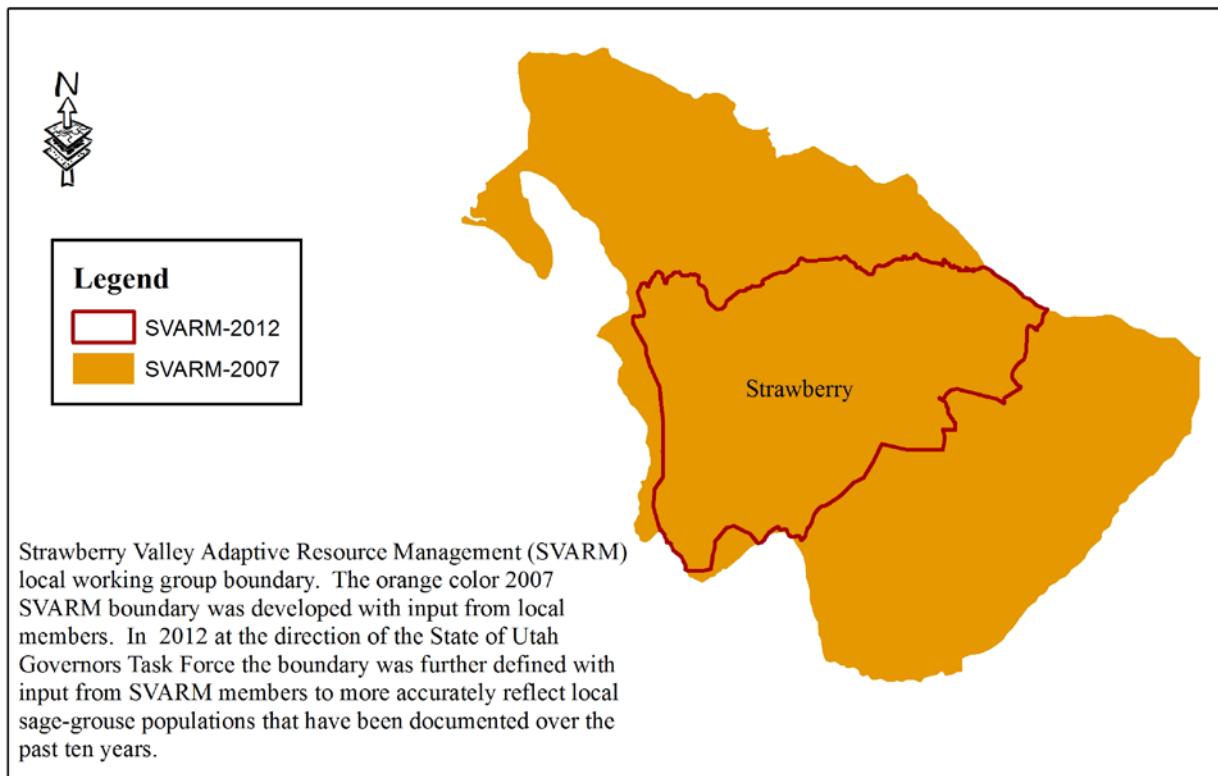


Figure 10. The Strawberry Valley Adaptive Resource Management (SVARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.



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.

Project and Research Highlights

The SVARM group participates in reviewing projects proposed by the Central Region team of the Utah Partners for Conservation and Development. In the 2013-2014 project cycle, SVARM reviewed proposed projects in sage-grouse areas, to ensure that projects intended to improve sage-grouse habitat were appropriately designed, and to identify any projects which might create concerns for sage-grouse. Although only a few projects each year are proposed, the LWG provides key input on the appropriateness of the projects, and any needed additional detail, such as post-project weed management plans for coordinating with Wasatch County weed management.

The SVARM group also pays attention to ongoing developments which could impact sage-grouse. Although action may not be needed frequently, the group continues to educate itself about potentially concerning issues, such as proposed disturbances or developments in sage-grouse habitat.

SVARM has supported a series of habitat projects (primarily sagebrush mowing in high-elevation, high-precipitation zones) over the last 7-8 years. The NEPA which covered those multiple project phases has expired, and a new NEPA document for future habitat improvement projects in the Strawberry area is being developed. Although potential development concerns occasionally arise, the group has generally been able to focus on proactive work to improve conditions for sage-grouse on the ground.

BYU students continue to work on analysis and publishing peer-reviewed studies based on more than 13 years of research in the area. Among the questions their work addresses is how sage-grouse use the previous habitat treatments in the SVARM area. The SVARM group reviewed key sections of the BLM-USFS draft sage-grouse EIS for Utah and provided comments during the winter 2013-14 comment period.

A new lek was confirmed during 2014 in the Fruitland area.

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).

Threat	Aspects of Sage-grouse population in the SVARM Resource Area								
	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

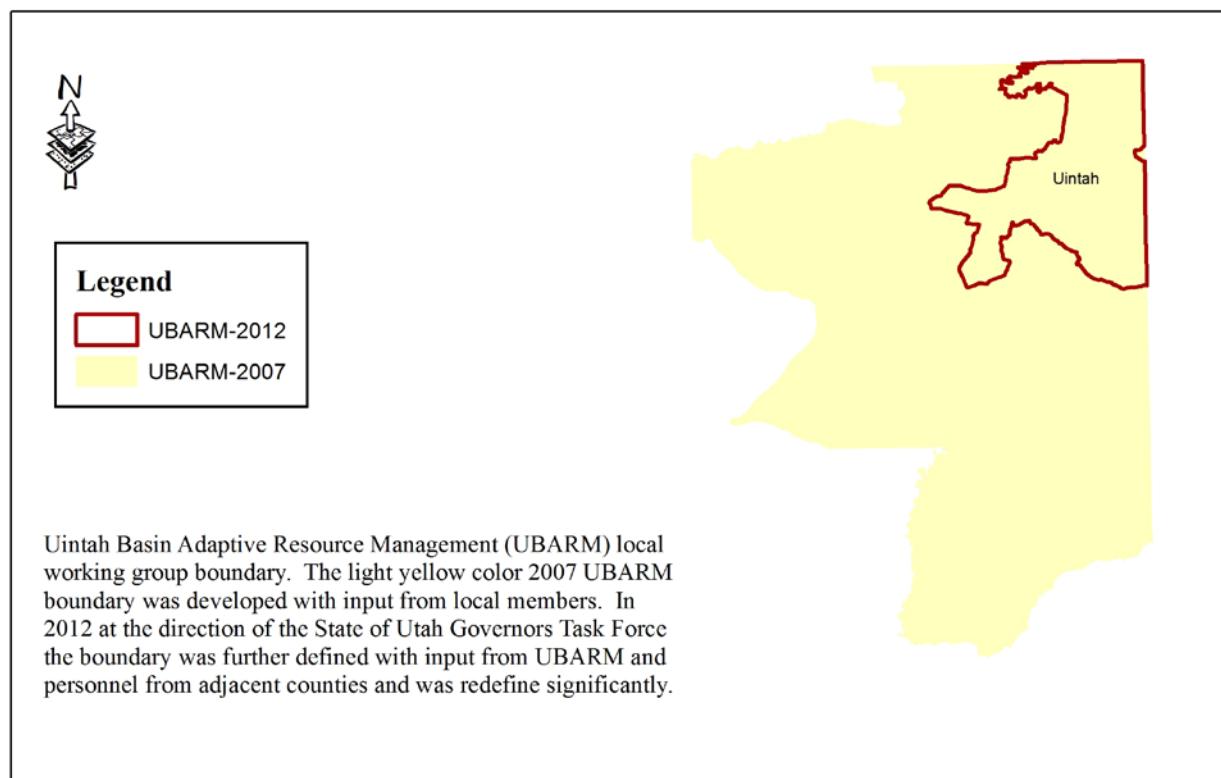


Figure 11. The Uintah Basin Adaptive Resource Management (UBARM) Sage-grouse Local Working Group and new Sage-grouse Management Area.



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.

Project and Research Highlights

The UBARM group coordinates closely with the Utah Partners for Conservation and Development northeastern region team based in Vernal. Generally, the two groups merged meetings in order to discuss the many projects related to sage-grouse habitat. During the meetings, projects were presented and discussed. In some cases, recommendations and adjustments to the techniques, seed mixes, etc. were suggested and incorporated into the project plans by the project managers in attendance. At least 14 projects related to sage-grouse were reviewed in the most recent project cycle. The LWG facilitator is a member of the ranking subcommittee for northeastern region WRI projects. LWG meetings are generally held on the same day as UBPCTD meetings.

The UBARM group has increased coordination across the border with the Colorado LWG, beginning with a well-attended field tour in September 2013 on Blue Mountain. The state line crosses Blue Mountain, but sage-grouse use both sides. On the field tour, led by a local rancher, individuals from both states learned from one another about project possibilities, local landscape history, and other topics which will allow more educated project designs. Several project proposals were developed as a direct result of the conversations during that field tour. In addition, Dinosaur National Monument employees have now joined the LWG. They share data resources, suggestions for projects, and local knowledge about on-the-ground habitat condition and project needs with other LWG members.

Scott Chew, a local rancher, has done extensive on-the-ground mapping of sage-grouse habitat on Blue Mountain. He has showcased his work around the state as an example for others interested in supporting both wildlife and livestock. The mapping information was shared and discussed during the Blue Mountain field tour noted above.

The UBARM group reviewed key sections of the BLM-USFS draft sage-grouse EIS for Utah and provided comments during the winter 2013-14 comment period. The facilitator also worked with Uintah County and others between meetings to better understand the alternatives presented in the draft EIS.

The LWG serves as a useful point of contact for the energy industry in the area. Although most energy company representatives do not attend regularly, they stay informed and attend meetings where specific agenda items (such as BLM comment periods) are pertinent to their work.

UDWR biologists in the UBARM group have been very proactive, keeping up with data from Colorado, and working to collar and track small numbers of birds in areas where additional information can assist with the development of key habitat projects. For example, based on birds collared on Little Mountain, the LWG was able to better understand how to design a project to address limiting factors for that population of sage-grouse. Projects designed using that information have been submitted to the UBPCTD/WRI funding mechanism.

NRCS has a substantial local presence and assists local landowners with a variety of projects, such as pinyon-juniper treatments and sage-grouse-friendly grazing management plans. During the reporting period, many miles of fence in sage-grouse habitats have been marked with fence markers. SGI/NRCS biologists have primarily coordinated these efforts, utilizing Dedicated Hunters, Boy Scouts, and many other volunteer groups.

NRCS and Sage-Grouse Initiative biologists have been instrumental in involving local landowners in sage-grouse projects, generally funded by the Sage-Grouse Initiative. These include pinyon-juniper removal and making long-term, sage-grouse friendly grazing plans. Due to confidentiality requirements for NRCS, those projects cannot be formally recorded in this report.

Sage-grouse lek attendance numbers in the reporting period have increased dramatically, particularly in the spring of 2014. Two new possible leks on Diamond Mountain were identified during 2014, and will be checked again in 2015.

UBARM continues to focus on the extensive conifer encroachment into sage-grouse habitat, and the group's role in coordinating with the UBPCD group will continue to be an important part of many discussions. The group is also very interested in the implementation strategy and details for the state sage-grouse plan. Additional upcoming topics of interest will be mitigation and federal land management agency planning changes resulting from the EIS process.

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).

Threat	Aspects of Sage-grouse population in the UBARM Resource Area								
	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

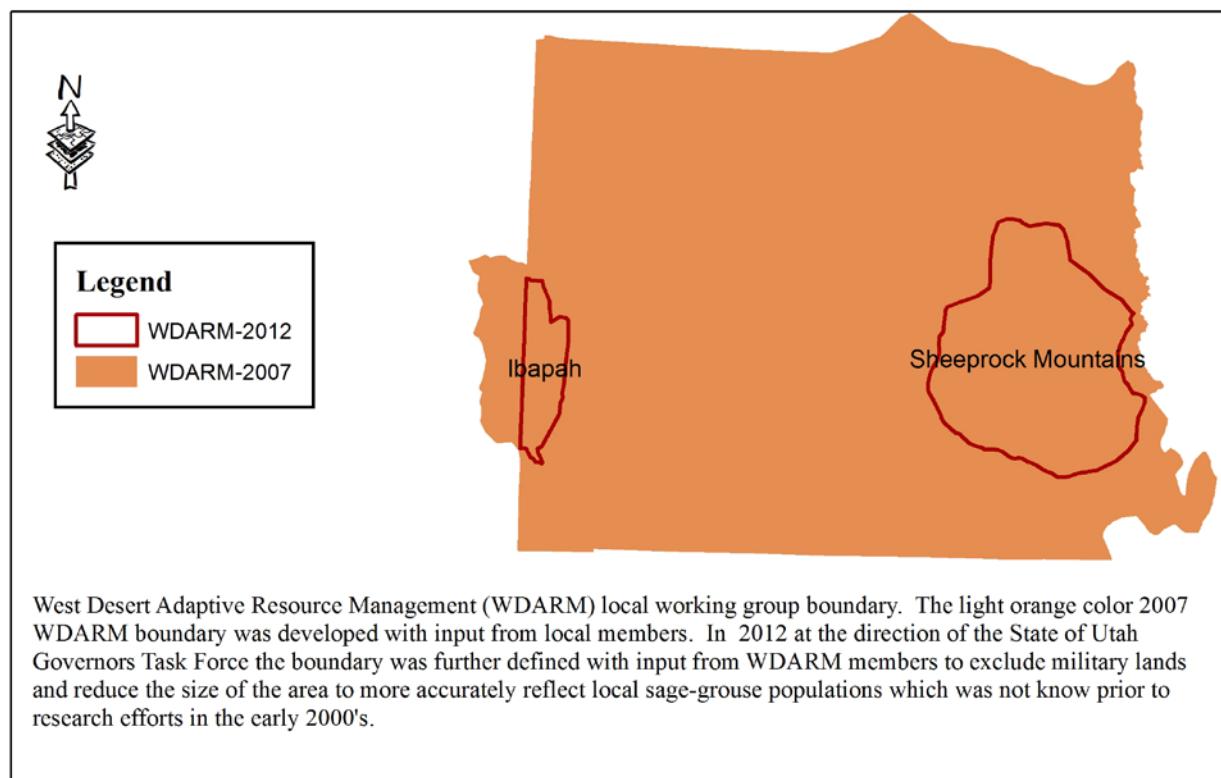


Figure 12. The West Desert Adaptive Resource Management (WDARM) Sage-grouse Local Working Group and new Sage-grouse Management Area (SGMA). The Ibapah and Sheeprock Mountains SGMA are located within the WDARM conservation area.



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.

Project and Research Highlights

During this reporting period, extensive staff turnover has been a challenge for the WDARM group. However, the LWG is an excellent mechanism to ensure that new employees with sage-grouse responsibilities within NRCS, UDWR, BLM, tribal government, and others have the chance to connect quickly and efficiently to partners in other agencies, get up to speed on projects, and feel part of the community.

The WDARM group participates in reviewing projects proposed by the Central Region team of the Utah Partners for Conservation and Development. In the 2013-2014 project cycle, WDARM reviewed a long list of proposed projects in sage-grouse areas, to ensure that projects intended to improve sage-grouse habitat were appropriately designed, and to identify any projects which might create concerns for sage-grouse. The changes suggested (and generally incorporated into the projects, to the best of our knowledge) included such details as increased percentage of pinyon-juniper removal for sage-grouse habitat improvements projects proposed by several different entities.

The WDARM group reviewed key sections of the BLM-USFS draft sage-grouse EIS for Utah and provided comments during the winter 2013-14 comment period.

The WDARM group is increasing looking to coordinate across political boundaries. In 2014, the group facilitator initiated contact with the White Pine LWG across the border in Nevada. Although no joint projects have been developed yet, the possibilities of a joint field tour, research project, or other coordination is gaining traction.

WDARM also met once in Ibapah in 2013, in conjunction with a lek counting trip. The Goshute Tribe was interested in exploring a variety of ways to assist with sage-grouse conservation efforts. Although tribal leadership has changed during this reporting period, individuals from NRCS have been critical to maintaining continuity in the relationship with tribal members interested in sage-grouse conservation efforts.

Project development and coordination is one of the strengths of this local working group. Issues are often raised informally during discussion, resulting in a coordinated plan for moving forward. A recent example related to coordination and decision making needed for grazing management on land owned by the Conservation District.

The presence of non-native red foxes in the area has been of concern to the group as well. During the planning period, the group discussed important next steps toward being able to more effectively address the threat of red fox depredation of sage-grouse.

Noxious weeds are of substantial concern for sage-grouse in the WDARM area. The Tooele County Weed Manager is actively involved in the LWG and works with members to address infestations as they are identified.

During the reporting period, a substantial percentage of the fences in areas known to have sage-grouse populations have been marked with fence markers. SGI/NRCS biologists have primarily coordinated these efforts.

The WDARM group will continue to focus on specific habitat issues (weeds, fires, conifer encroachment, etc.) as they arise. The red fox predation issue has the potential to create significant concerns for the low sage-grouse populations in the area, and the group will continue to monitor the situation and develop strategies for mitigating the concern as much as possible.

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).

Threat	Aspects of sage-grouse ecology							
	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
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
GIP – Grazing Improvement Program
GRSG – Greater Sage-grouse
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
SGMA – Sage-grouse Management Area
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
UDAF – Utah Department of Agriculture and Food
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
WBECRM – West Box Elder Coordinated Resource Management
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
WREN - Wildlife Research Education Network
WRI – Watershed Restoration Initiative
WS - Wildlife Services (under USDA)