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

2014-2015 Annual Report

Photo by Todd Black

March 2016

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

Submitted to

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Preface

In September 2015, the U.S. Fish and Wildlife Service (USFWS) determined that the greater sage-grouse (*Centrocercus urophasianus*; sage-grouse) did not warrant protection under the Endangered Species Act of 1973 (USFWS 2015). This report summarizes 2014-2015 actions implemented by Utah's Adaptive Resource Management Greater Sage-grouse Local Working Groups (LWGs) that contributed to this decision. During this period, the LWGs were facilitated by faculty and staff affiliated with the Utah Community-Based Conservation Program (CBCP). The LWG sage-grouse conservation plans, previous annual reports, research summaries, and meeting minutes can be accessed at www.utahcbcp.org.

Utah State University Extension, through the CBCP, in partnership with the Utah Governor's Office, federal, state, industry, and private partners began working with stakeholders in 1996 to organize 11 community-based local sage-grouse working groups (LWGs) throughout Utah. The CBCP enhanced information flow and stimulated involvement in incentive-based conservation. The CBCP assisted federal, state, and local governments, private landowners, and wildlife managers in learning more about sage-grouse ecology as they developed and implemented strategies to achieve species conservation, and community social and economic objectives. The success of the program was directly related to the early involvement of local leadership, CBCP facilitation, and access to emerging ecological and sociological research. The CBCP process has translated conservation planning and research to habitat management, and habitat management to population stability. Sage-grouse population trends in the CBCP area have stabilized. The CBCP provided the basis for Utah's on-going Greater Sage-grouse Conservation Strategy.

The CBCP continues to work closely with LWG members, state and federal, and private partners to implement the Utah's Plan goal of protecting high-quality sagebrush habitats to 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 Greater Sage-grouse Conservation Strategy (Utah Plan 2013) was built largely upon the earlier efforts of LWGs to develop local conservation plans and conduct research to describe sage-grouse ecology and responses to management in Utah.

Executive Summary

The CBCP encompasses the historical range of sage-grouse in Utah. The CBCP has focused on implementing conservation strategies in the sage-grouse management areas (SGMAs) identified in the Utah Plan (Figure 1). The Utah Plan reinforced the role of local sage-grouse working groups (LWGs) in developing and implementing voluntary sage-grouse conservation plans for the SGMAs. The CBCP supports LWG administrative needs. Since inception, the CBCP has been financially supported by Utah Division of Wildlife Resources (UDWR), Utah State University Extension (USUEXT), the Jack H. Berryman Institute, private landowners, public and private natural resources management and wildlife conservation agencies and organizations.

The Utah Plan was based largely on LWG efforts (Utah Plan 2013). Successful 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 local conservation plans. The LWGs include representatives from state and federal

agencies of land and resource management, non-governmental organizations, private industry, local communities, and private landowners.

During 2014-2015, the CBCP, in addition to facilitating the LWGs, focused on preparing and publishing peer-reviewed manuscripts which report the scientific basis supporting the Utah Plan goals, objectives, and strategies. A list of these publications can be found in the Appendix. Additionally, the CBCP in cooperation with the Western Association of Fish and Wildlife Agencies (WAFWA) organized and conducted the 2014 International Sage-grouse Grouse Forum, which was held in Salt Lake City, Utah November 12-15, 2014. The Forum attracted over 350 participants from over 20 states and three Canadian provinces. Utah Governor, The Honorable Gary R. Herbert, provide the keynote address. In addition to the on-site participants, over 1000 joined the Forum on-line or viewed the presentations after the Forum. The web site address is www.sage-grouseforum.org.

In July 2015, the CBCP began collaborating with WAFWA and the Great Basin Consortium to organize the 2016 Sagebrush Ecosystem Conservation Conference which was held in Salt Lake City, Utah, February 22-26, 2016. This Conference drew over 500 participants on-site and another 300 on-line participants.

Lastly, the CBCP was recognized in 2015 with the Award of Excellence presented by the Western Extension Directors Association for program sustainment and impacts. In this report we summarize LWG efforts completed in 2014-2015 to implement the conservation strategies and actions identified in the Utah Plan.

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Introduction

In 1996, Utah State University Extension (USUEXT) and UDWR began collaborating to develop a community-based conservation (CBCP) sage-grouse (*Centrocercus* spp.) local working group (LWG) process throughout Utah to begin addressing localized threats to the species. The CBCP goal was to enhance communication among private stakeholders, local, regional and state governments, and state and federal management agencies to decrease regional and statewide threats to sage-grouse and increase collaborative conservation management practices.

To facilitate LWGs in Utah, the UDWR entered into a cooperative agreement in 2001 with USUEXT to develop a Utah CBCP program. This base funding supports one staff specialist position and funds LWG administration to include monitoring sage-grouse response to management actions. These funds have been matched by USUEXT with on-going legislative funding provided through the Jack H. Berryman Institute to support two additional coordinators and an administrative assistant. Additional funding has been received through various contracts and grants from over 40 federal, state, and private partners. Annually, the CBCP partners have contributed over $300,000 to support the LWG through the CBCP process. An additional $200,000 has been generated annually through grants and contracts to support graduate students and research technicians to conduct the research identified by the partners.

Eight years subsequent to the first CBCP meetings, environmental organizations petitioned the U.S. Fish and Wildlife Service (USFWS) to list the sage-grouse as endangered under the federal Endangered Species Act (ESA). By 2002 six petitions had been filed with the USFWS to list sage-grouse as an endangered or threatened species. Three of these petitions directly affected Utah. In March 2010, the USFWS designated greater sage-grouse (*C. urophasianus*) as a candidate species for ESA protection (USFWS 2010). Their decision was based on continued habitat fragmentation and inadequate regulatory mechanisms at the local, state, and federal levels to curtail the impacts. Because sage-grouse are landscape species that inhabit lands owned and managed by multiple jurisdictions, the preservation of large tracts of suitable habitat and the management of these areas to maintain connectivity between populations will be paramount to their conservation. A range wide listing of the sage-grouse for protection under the ESA would limit state management authority and impact local, state and regional economies (Messmer 2013a).

Within Utah, Governor Gary H. Herbert chartered a Task Force to develop recommendations for a statewide plan for the conservation of sage-grouse and provide for the continued economic health of the state. In 2013, the Conservation of Greater Sage-grouse in Utah (Plan) was published (State of Utah 2013). The Plan was built on nearly two decades of research and community involvement accomplished under CBCP guidance. The Plan was designed to eliminate the threats facing the sage-grouse while balancing the economic and social needs of the residents of Utah through a coordinated program which provides for **incentive-based programs on private lands** and **reasonable and cooperative regulatory programs**. In February 2015, Governor Herbert signed an Executive Order (EO) to fully implement the Plan (http://blog.governor.utah.gov/wp-content/uploads/2015/02/Implementing-the-Utah-Conservation-Plan-for-Greater-Sage-Grouse.pdf). The CBCP core team consists of specialists and collaborators with training and experience in wildlife biology, ecology, sociology, human dimensions, conflict resolution, law, business, range management and ecology, agriculture, public administration, communication, petroleum engineering, public land policy, community and regional planning.

Collaborators include faculty and staff in the Quinney College of Natural Resources, College of Agriculture and Applied Sciences, College of Humanities and Social Sciences, College of Mathematics and Science at Utah State University, S.J. Quinney College of Law at the University of Utah, The Ruckelshaus Institute, Haub School of Environment, and Natural Resources at the University of Wyoming. These collaborators provided expertise in facilitating and evaluating the process, conducting and reporting ecological and human dimensions research, and organizing and facilitating state, regional, and international meetings and forums to maximize both process and content delivery. These efforts where showcased at the International Sage-grouse Forum (http://www.sage-grouseforum.org/) which was held in Salt Lake City November 13-14, 2014.

Federal, state, and private partners include the Western Association of Fish and Wildlife Agencies, Western Governors Association, Western Rural Development Center, Utah Watershed Initiative, USFWS, Bureau of Land Management, US Forest Service, NRCS, Utah Department of Natural Resources, American Farm Bureau Federation, The Wildlife Society, Western Landowners Alliance, Utah Governors' Office, TNC, Berry Petroleum LLC, Anadarko Petroleum, Rocky Mountain Power, PacifiCorp, Avian Powerline Interaction Committee, Alton Coal, Foundation for Quality Resource Management, Rich and Box Elder County Coordinated Resources Management, Parker Grazing Association, Summit and Morgan County, US Geological Service, and the Audubon Society. These partners have provided financial, administration, technical, and organization support of LWGs conservation projects, publications, events, and sponsored research.

The EO specifically credited the CBCP for conducting the baseline research and community involvement essential to building the Plan. Prior to the first listing petitions, the CBCP process engaged hundreds of stakeholders through working groups (LWGs) to increase local ownership and involvement in the development of community-based sage-grouse conservation plans. Because of CBCP research efforts, the State of Utah was also fortunate to have unparalleled knowledge about the factors essential to species conservation. When CBCP LWG-based, state agency and federal agency efforts were aggregated into a statewide plan for sage-grouse, the collective result provided an organized approach for addressing the factors used by the USFWS to measure the success of conservation efforts.

Since inception, the CBCP has generated over 60 peer-reviewed journal articles, dissertations and theses which represent and report the basic and applied research completed by over 30 graduate students. The faculty and student affiliated with the program have delivered over 200 scholarly presentations at professional meetings and public forums. The CBCP has developed and maintains two program websites, conducted 2 regional and one international forum on sage-grouse, produced an app, written dozens of fact sheets, special and annual reports, and published and distributed over 60 quarterly newsletters which reach over 1,500 stakeholders. Papers published during 2014-2015 can be found in Appendix of this report. A complete archive of the scholarly and outreach products developed can be found at www.utahcbp.org.

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.

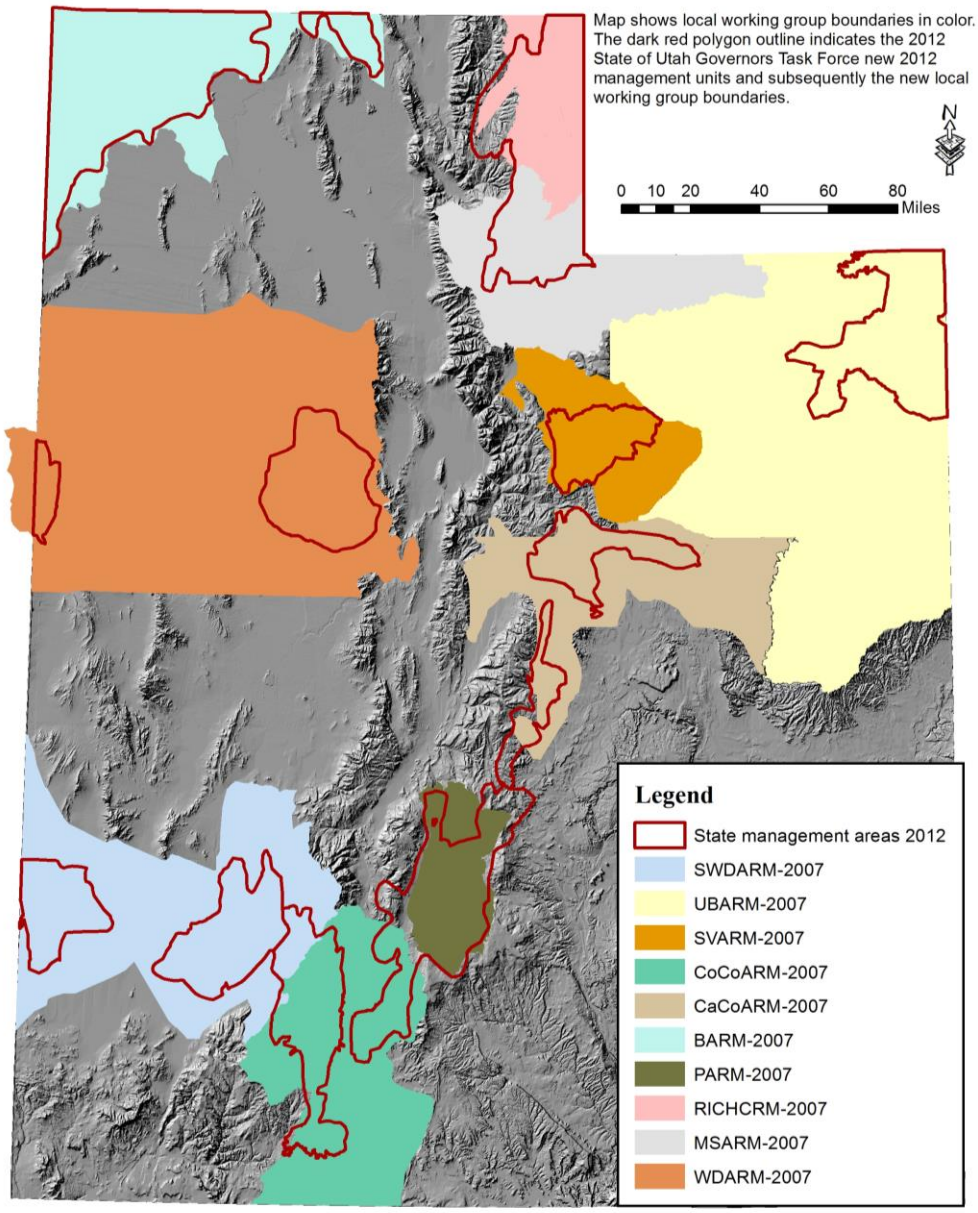

Figure 1. Location of Sage-grouse Management Areas (SGMAs) within Utah Sage-grouse Conservation Areas (Utah Plan 2013). The SGMAs (outlined in red) represent the best opportunity for high-value, focused conservation efforts for the species in Utah. This approach outlined in the Utah Plan recognized current 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.

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

The Box Elder Adaptive Resource Management Plan (BARM) Sage-grouse LWG was organized in 2001 by Terry Messmer. In 2011 the West Box Elder Coordinated Resource Management (WBECRM) was organized and the effect of the LWG combined into the WBECRM plan. The CRM 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 throughout the year to address and discuss sage-grouse specific issues of concern, management actions, and strategies. The subcommittee reports these to the WBECRM. Diane Tanner is the facilitator for the group. David Dahlgren is the CRM sage-grouse committee chairperson.

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. Although our knowledge of sage-grouse populations in the area was incomplete in 2001, 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 Meetings

Type	Date	Location	No.	Comments
Face to Face	February 4, 2015	Park Valley School, UT	78	Landowner appreciation dinner and presentation
Face to Face	February 17, 2015	Park Valley School, UT	31	The CRM is the clearing house for all projects in West Box Elder, Grouse Creek Bullhog phase III project update, other conifer removal project updates, firebreaks, Utah Plan for Wildfire and Threat Reduction Analysis
Face to Face	April 21, 2015	Park Valley School, UT	27	Covered hot topics for the CRM group, Beaver Project Proposal, BLM updates, IWJV grant process, Cell coverage in Grouse Creek, Milk Vetch update, Sage-Grouse Research Plans
Field Tour	June 2, 2015	West Box Elder County	60	toured projects across the county, mostly conifer treatment areas
Field Tour	June 11, 2015	Park Valley, UT	25	looked at sagebrush treatments to determine management in Utah
Face to Face	September 15, 2015	Park Valley School	28	Sub Committee Reports, PJ Committee 5-year Plan, Invasive Weed projects, Wildlife future projects, Beaver project, Urban Deer

				Translocation, Raven Control, Sage-Grouse Research update
Field Tour	October 21, 2015	Grouse Creek, UT	18	Conducted a field tour for SGI biologists and modelers on PJ Treatments throughout West Box Elder
Face to Face	November 17, 2015	School, Park Valley, UT	20	Fuel mitigation, conservation mapping, transplants from Box Elder to Sheeprocks, IWJV grants for Cons. District, Raven Control, PJ treatment and burning, Dry Basin Project Update

Current Projects by the West Box Elder CRM:

Name	Treatment Type	Proposed Date	Partners	Comments
Dry Basin Project	Pinyon-Juniper removal and fire break	Fall 2015-Spring 2016	Cons. District, GIP, UDWR, USFWS, BLM	Near a large sage-grouse lek, fire breaks evaluated by GIP and USU Ext.
Warm Springs Project	Pinyon-Juniper Removal	Fall 2016	BLM, UDWR, USU Ext.	Being evaluated by BLM and USU Ext.
Multiple SGI PJ Removal on Private Lands	Pinyon-Juniper Removal	Fall 2016	NRCS-SGI, GIP, Cons. District	This includes various PJ projects across West Box Elder

Project and Research Highlights

Recent research completed by graduate student Charles Sandford, under Terry Messmer's guidance, has confirmed the positive impacts that management within the CRM area is having. We confirmed immediate sage-grouse use of active conifer treatments. A radio-marked female was documented nesting in a treatment area with active mastication. A field note was published in The Prairie Naturalist Journal in December 2015. Our research has evaluated nest and brood resource selection and the effects on nest and brood success. We confirmed that nest and brood success were higher with female sage-grouse that selected for areas near or within conifer treatments compared to females that did not. This is the first research connecting conifer removal treatments to sage-grouse vital rates. This work is currently under review in a peer-reviewed journal.

The 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. 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.

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

The Castle Country Adaptive Resource Management Plan (CaCoARM) Sage-grouse LWG was organized in 2004 by Terry Messmer. Lorien Belton is the group facilitator.

Description of Area and General Population Information

The CaCoARM conservation area encompasses occupied sage-grouse habitats primarily in Carbon County, with portions of Utah and Sanpete County. Sage-grouse habitat in this area is naturally fragmented by both geology and topography. Although the sage-grouse habitat locally in in the Carbon SGMA boundary, the Tavaputs Plateau is outside the SGMA, the LWG continues to work with landowners in the Tavaputs area and watch the population dynamics there in addition to the primary focus on the birds within the SGMA.

CaCoARM Meetings and Field Tours, October 2014 – January 2016

Type	Date	Location	No.	Comments
Meeting	December 9, 2014	Price, UT	15	Refine state pinyon-juniper map locally, discuss possible project proposals
Meeting	January 13, 2015	Price, UT	13	Review of WRI sage-grouse projects, discuss state plan disturbance mapping
Meeting	April 22, 2015	Price, UT	19	Population updates, BLM planning updates, state plan updates
Field Tour	July 14, 2015	Joe's Valley	9	Tour of sage-grouse areas, conifer treatments, and equipment options
Meeting	October 21, 2015	Price, UT	12	Presentation by BLM on new land use plan amendments
Meeting	January 20, 2016	Price, UT	12	Review of WRI sage-grouse projects, landowner dinner planning, and private lands initiatives

Project and Research Highlights

The CaCOARM group has continued to develop strong relationships between key players in the local area. Group members have put substantial effort into ensuring that elements on the state sage-grouse conservation plan, such as the pinyon-juniper priority mapping and disturbance mapping, reflected local understandings of needs and realities on the ground.

There is a gradually growing conversation about pinyon juniper treatment in the area, including increased efforts by the NRCS Sage-Grouse Initiative biologist to engage local landowners in project planning, and a field tour to visit several in-progress project sites and talk with operators about the pros and cons of different types of equipment. The group has also begun regularly discussing WRI projects with potential benefit to sage-grouse before the projects are ranked by the regional UPCD teams. This gives project proponents of those projects time to learn recommendations from the LWG beyond the level of detail at which conversations are likely to

happen in the comments field. For example, CaCoARM discussed one projects' seed strategy at great length, considering the history of the area, potential drivers of the problems currently occurring in the system, and the possible effectiveness of different approaches to reseeding the area with more desirable vegetation.

The CaCoARM group also solicited BLM participation in the LWG to discuss the proposed Resource Plan Amendments. Last but not least, there are several very active private landowners who are working to improve habitat for sage-grouse in the area in ways that also support working agricultural lands and other private enterprise. The group meets regularly in the evening to accommodate the schedules of landowners who work during the day and can only attend meetings after business hours.

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

The Color Country Adaptive Resource Management (CCARM) Sage-grouse LWG is facilitated by Nicki Frey. The main purpose of the LWG is to provide a framework of strategies and associated actions that can be implemented to abate threats, address information gaps, and guide monitoring efforts. 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 LWG continues meets every other month. We typically have 20 people in attendance depending on the topic of conversation. We continued to provide assistance to Alton Coal for mitigation planning. The group continued to provide assistance to UDWR, FS, and BLM WRI projects in the proposal phase and on the ground. The Upper Sevier Watershed Project kept them busy. CCARM hosted field work day in August to cut "whips" from a recently treated field that is used by sage-grouse.

Nicki has continued work on the project started in 2013 (mostly 2014) to study grouse response to treated areas, and connectivity among leks. She is deploying GPS transmitters on sage-grouse in Dog Valley, the missing link between Bald Hills SGMA and Panguitch SGMA.
The UDWR will use these data to also support an employee's Masters of Natural Resource program through Utah State University.

Nicki implemented the Wildlife Research Education Network program in Kanab for the second time. Students were shown about radio-telemetry, collected field data on sage-grouse habitat, learned tracking and other field ID tools, and hiked through grouse country, seeing 3 sage-grouse along the way. During the fall, 40 students from two high schools (Kanab and Cedar City) participated in the program.

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

The East Box Elder LWG was formed in November 2015. The LWG group consists of private landowners, state and federal agency personnel, and conservation district members. The group elected C. J. Roberts and Brett Selman as their co-chairs for the group. The first objectives of the group are to learn more about the sage-grouse population in their area, which consists of nearly all private land. This included lek searches, recording wintering grouse, and communicating with landowners for their knowledge.

The group met again in early January 2016 and decided to have an education meeting for the group and community to learn more about sage-grouse and invite landowners and other community leaders. This meeting will be held on February 18, 2016. This is a fledging group and the future will tell if members can continue to work together, though a very strong start has occurred. Four individuals in the group have donated money to buy a GPS-radio for a sage-grouse. The group plans to start their own research project after some initial data gathering and identifying a funding source.

East Box Elder LWG meetings.

Type	Date	Location	No.	Comments
Face to Face	November 12, 2015	USU Branch Campus, Tremonton, UT	28	Kick-off Meeting, Organization, Co-Chair Persons, Need, Objectives discussed
Face to Face	January 7, 2016	USDA Offices, Tremonton, UT		Discussed the direction of the group, lek searches for the spring, recording wintering grouse locations, set educational meeting Feb. 18

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

The Morgan-Summit Adaptive Resource Management (MSARM) sage-grouse LWG is facilitated by Lorien Belton. The Morgan-Summit group focuses on southern half of the Rich-Morgan-Summit Sage-Grouse Management Area (SMGA).

Description of Area and General Population Information

The LWG area falls in 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.

MSARM Meetings and Field Tours, October 2014 – January 2016

Type	Date	Location	No.	Comments
Meeting	December 11, 2014	Coalville, UT	14	State plan implementation, research project, east canyon area development
Meeting	February 10, 2015	Morgan, UT	11	East canyon development, research updates, easement conversations, predator info
Field Tour	cancelled	East Canyon area	-	
Meeting	November 4, 2015	Coalville, UT	11	Preliminary research findings, easement strategy, and USFS plan implementation
Landowner dinner	January 26, 2016	Morgan, UT	38	New research findings presentation, Q&A

Project and Research Highlights

During 2014, several private developers who own land in sage-grouse habitat in Morgan County brought forward a proposal to the county for steps to be taken toward allowing the land to be developed. The local working group was involved as a center for information provision and discussion for those interested in the issue. Many MSARM members attended county planning and council meetings in addition to regular local working group meetings, and helped ensure that county officials had relevant science and information regarding the sage-grouse to make in their decision. The county eventually declined to change the County General Plan as the owners had

requested, so the sage-grouse habitat area remains for the time being in an agriculture and recreation area, zoned agricultural-160.

The MSARM group was pleased to have a research project initiated in the area in 2014. Brandon Flack, a graduate student at USU working with Terry Messmer, has been trapping and radio-marking of sage-grouse in MSARM area, and has almost one full year of data on bird movements, habitat selection information, and other information. This information will be useful for helping understand where areas are key habitat for local sage-grouse populations in different seasons. It is also crucial to beginning to understand where best habitat projects might improve the situation for sage-grouse. Because until recently we have had very little information about the birds' seasonal movements, habitat projects have generally not been being done in the area due to an abundance of caution and the likelihood that they were using some areas year-round.

A final topic of considerable discussion in the MSARM group has been easements. There are a large number of individual landowners in the general area of the sage-grouse habitat in Morgan and Summit counties would have expressed interest in conservation easements. However, due to limited funding, high demand, and uncertainty about which areas sage-grouse needed most critically, fewer easements have been put in place than might otherwise have been. A small sub-team of the MSARM group has been working to articulate the interest levels and need, so that it can be combined with newly emerging data on grouse habitat use. This information may be helpful in future funding or information requests about needs in the area.

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

The Parker Mountain Adaptive Resource Management Plan (PARM) Sage-grouse LWG was organized in 1998 by Terry Messmer. 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 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. The sage-grouse populations at Wildcat Knoll and Horn Mountain have been included with the Parker Mountain SGMA. The stakeholders (e.g., USFS, Emery County, etc.) working on these two populations have joined PARM.

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. The Wildcat Knoll and Horn Mountain had two years of research with radio-marked grouse from 2008-2009.

PARM meetings and field tours.

Type	Date	Location	No.	Comments
Face to Face	March 11, 2015	Courthouse, Loa, UT	20	Discussed future events (lek counts), research update from spiked pastures, cheatgrass issues and plans, PARM became the official Pronghorn Committee for the UDWR
Field Tour	April 8, 2015	Parker Mountain, UT	15	Conducted lek counts across Parker Mountain covering all known leks
Field Tour	June 10, 2015	Parker Mountain, Red Knoll	12	PARM members searched the area for cheatgrass invasion and recorded observations
Field Tour	July 1, 2015	Parker Mountain, UT	~80	Six County AOG Summer Natural Resource Field Tour
Field Tour	September 17, 2015	Mytoge Mtn. Project	8	Did a site visit to the Mytoge Mtn. Project area with USFS, UDWR, and USU Ext. personnel

Face to Face	October 15, 2015	Courthouse, Loa, UT		Planned upcoming cheatgrass treatment, BLM Update on RMP.
Field Activity	November 2, 2015	Parker Mountain, Red Knoll	7	Sprayed spot treatments of Plateau on cheatgrass areas
Face to Face	January 27, 2016	Courthouse, Loa, UT	16	New PARM members introduced, cheatgrass WRI project, Mytoge Mtn. Project update, Research Update Spike Pastures, Pronghorn Research Proposal

Projects Proposed with benefit for sage-grouse:

Name	Treatment Type	Proposed Date	Partners	Comments
Red Knoll Cheatgrass WRI Project	Plateau	Fall 2016	UDWR, PARM, SITLA, BLM, WRI	Large aerial treatment, extending onto BLM if possible
Mytoge Mountain Watershed Restoration	Pinyon-Juniper removal, Spike, Aspen Regeneration	Fall 2017	USFS, BLM, UDWR	NEPA to be done by this Fall, BLM working on a project adjacent to USFS property

Project and Research Highlights

The research project conducted by USU in association with SITLA and GIP has been completed and Nate Dulfon (graduate student working with Eric Thacker) is currently writing research results. 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. Spiked areas have been shown to increase forage for livestock and are used more by sage-grouse broods than nearby untreated reference areas. Additionally, the research followed up on the Parker Lake Pasture treatments and found long-term positive impacts of treatment, especially spike to vegetation and sage-grouse use. Lawson aerator and Dixie Harrow plots had sagebrush canopy cover return to pre-treatment levels within 5-10 years, while spiked areas continued to have reduced shrub canopy cover.

PARM is proceeding with two important projects with the Mytoge Mountain project which will reduce conifer cover near two leks in the corridor leading to populations farther north. The BLM is also preparing a project to do similar treatments on adjacent areas to USFS property. PARM is

trying to find resources to have GPS-marked grouse in these areas prior to and after treatment occurs to document the impact of these management practices on the sage-grouse population in the area. PARM is also working to treat cheatgrass invasion that is occurring near Red Knoll and is invading sagebrush communities in the area. Cheatgrass poses an imminent fire threat to Parker Mountain sagebrush habitat for multiple species, including livestock.

Rich County Coordinated Resource Management Sage-grouse Local Working Group

The Rich County Coordinated Resource Management (CRM) Sage-grouse LWG (RICHCO) is facilitated by 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. 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 has remained stable with a slight decline in population numbers and male lek attendance since 2010. However, a strong increase in males/lek has occurred for the last 4 years. 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.

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. All WRI projects that are going to be implemented are reviewed by the CRM with at least one county commissioner present. This allows for greater inter-organizational communication of projects and more informed representatives of all participating entities.

Rich County CRM meetings and field tours.

Type	Date	Location	No.	Comments
Face to Face	March 2, 2015	Senior Citizen Center, Randolph, UT	18	Discussed the Gov. Executive Order, Update CRM Plan, Planned landowner appreciation dinner
Field Tour	April 17, 2015	Sage Junction, UT	12	Conducted lek counts in north Rich County

Face to Face	May 7, 2015	Senior Citizen Center, Randolph, UT	62	Landowner appreciation dinner and presentation
Field Tour	June 10, 2015	Rich County, UT	25	Combined CRM and WRI tour looking at management projects in Rich County
Face to Face	October 23, 2015	Senior Citizen Center, Randolph, UT		Research project discussed, results from USU Grazing Study presented
Field Tour	November 16, 2015	North Rich County and Crawford Mtns	11	Sagebrush treatments Duck Creek Allotment, Pinyon-Juniper Treatments on Crawfords
Face to Face	January 5, 2016	Senior Citizen Center, Randolph, UT	21	WRI Proposals for Rich Co. Presented, Board Meeting followed, discussed hiring someone to update CRM Plan

Projects Proposed to Rich County CRM

Name	Treatment Type	Proposed Date	Partners	Comments
Crawford Mtn PJ treatment BLM	Pinyon-Juniper removal	Fall 2016	BLM, Rich CRM	Sagebrush focal area
Bearlake WUI Fuels project, USFS	Conifer, Aspen, and sagebrush treatments	Fall 2016	USFS, WRI	Fuels reduction near communities
GIP – SGI projects (multiple)	Pipeline development, fencing, etc.	Fall 2016	GIP, SGI, Private Producers	Taylor Payne project lead
Three Creeks – Grazing Improvement	Grazing System Changes	2015	GIP, Producers, SGI, USU	High Intensity – Short Duration Grazing System

Project and Research Highlights

The first four years of a long-term grazing study has been completed by Seth Dettenmaier, under the direction of Terry Messmer. Nest success was higher on Deseret Land and Livestock (DLL) than Three Creeks BLM Allotment. DLL rangelands exhibited taller grass cover at nest and brood sites in comparison to Three Creeks. This first study to the direct effects of grazing on sage-grouse vital rates. Wayne Smith, a new USU graduate student working with Terry Messmer has also marked sage-grouse with GPS-radios in DLL pastures where cattle with GPS-collars were being grazed. This research will analyze the behavioral response of sage-grouse to grazing.

The Three Creeks project (conversion to short-duration high intensity grazing) is still under review. The projected release date for the NEPA has been postponed to Spring/Early Summer 2016. Once the management shift occurs monitoring of the sage-grouse population response to this change will continue.

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

The Southwest Desert Adaptive Resource Management sage-grouse LWG (SWARM) consists of community members from Beaver and Iron Counties and is facilitated by Nicki Frey. The LWG meets every other month to discuss issues and concerns with grouse management and conservation in our region. The Governor's Task Force has recommended the development of two SGMAs in the LWG conservation area; Hamlin Valley and Bald Hills.

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

Work on the sage-grouse research project for Sigurd-Red Butte transmission line continued and will be completed in 2016. Data will be reported at the February SWARM meeting. In 2015 group members deployed 10 GPS transmitters in Hamlin Valley to begin to assess sage-grouse use of treated areas in the valley. Data collected by group members during 2011-2012 will be used to compare pre-and post-use in some areas. We will continue to monitor those transmitters through 2016.

We sponsored an open house to discuss telemetry data results and WRI project plans in February 2015. Nicky Frey implemented the Wildlife Research Education Network program in Cedar City for the third time. Students were shown about radio-telemetry, collected field data on sage-grouse habitat, learned tracking and other field ID tools, and hiked through sage-grouse country.

We didn’t see grouse in the fall, but we did see pellets. During the fall, a total of 40 students from two high schools (Kanab and Cedar City) participated in the program.

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

The Strawberry Valley Adaptive Resource Management (SVARM) sage-grouse LWG is facilitated by Lorien Belton.

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.

SVARM Meetings and Field Tours, October 2014 – January 2016

Type	Date	Location	No.	Comments
Meeting	December 4, 2014	Heber, UT	13	Disturbance and conifer mapping, planning
Meeting	January 15, 2015	Heber, UT	10	Sagebrush condition assessment, BYU research updates
Lek visit 5:30 am	April 30, 2015	Wildcat lek	3	Wildcat lek visit
Field Tour	August 4, 2015	Strawberry Reservoir area	10	Habitat project tour retrospective and future planning
Meeting	November 18, 2015	Heber, UT	8	BYU research updates, future project plans

Project and Research Highlights

The Strawberry Valley sage-grouse areas are relatively stable and there are not many urgent threats. Long-term maintenance efforts for the populations are done through weed management districts and gradual habitat improvement projects.

Brigham Young University students and faculty have maintained a long-running presence in the Strawberry Valley area, collaring birds and observing their locations and habitat usage. The working group gets regular updates from the BYU researchers, and often questions the students to gain specific on-the ground knowledge to improve habitat project design. The researchers, in addition to tracking the sage-grouse, observe how the birds respond to newly treated areas, by comparing their locations to the polygons of treatment areas done on past projects. Overall, the

results suggest that the birds select the treated areas. This has generated interest in continuing the process of treating specific areas.

Several years ago, the last of a series of habitat improvement projects was finished up in the area, most involving sagebrush mowing or other disturbance methods in high-elevation brood-rearing habitat. The first of those projects has now grown in somewhat, and other project areas have been discussed by the group. Considerations such as whether the area is grazed, weed concerns in the adjacent areas, and wet meadow locations were taken into account. A new NEPA process to cover the next set of projects (one project to be implemented every year or two) has been begun, and is being led by the Forest Service. Some additional retreatment will be proposed in previously treated areas in order to maintain good habitat for sage-grouse in those areas as well.

As needed, the group discusses potential concerns, such as proposed developments and power transmission lines when they come through the county.

Uintah Basin Adaptive Resource Management Local Working Group

The Uintah Basin Adaptive Resource Management (UBARM) sage-grouse LWG is facilitated by Lorien Belton.

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.

UBARM Meetings and Field Tours, October 2014 – January 2016

Type	Date	Location	No.	Comments
Meeting	December 16, 2014	Vernal, UT	14	Pinyon juniper strategy, other updates
Meeting	February 17, 2015	Vernal, UT	10	Governor's Executive Order, other updates
Field Tour	May 19, 2015	Little Mountain	11	Visit to recently located lek, local sage-grouse use areas and migration corridors
Meeting	November 17, 2015	Vernal, UT	18	BLM plan amendments presentation, projects, other updates

Project and Research Highlights

The UBARM group, which functions in close partnership with the Uintah Basin Utah Partners and Conservation Development, has developed multiple habitat improvement projects for sage-grouse, including a large number of conifer-removal projects across the basin. Recently, the Ute Tribe has become more involved in project discussions and planning, sharing knowledge and ideas with others in the group. The NRCS Sage-Grouse Initiative has increased its impact on the area as well, working with private landowners, often those near existing or planned projects on public lands.

The UDWR, Forest Service, and BLM, in addition to wildlife partners in Colorado, have been working together on increased monitoring of sage-grouse in areas where bird movements were

previously unknown or only anecdotal. Many collars, including GPS-enabled transmitters, have been placed around the basin, including on Blue Mountain, the three corners area, Little Mountain, and other areas. The information provided is helping provide a more complete picture of bird movements and habitat use in the area.

The UBARM group has also been actively engaged in state plan implementation work, such as conifer removal strategy assistance, and painstaking review of the disturbance map baseline layers.

West Desert Adaptive Resource Management Local Working Group

The West Desert Basin Adaptive Resource Management (WDARM) sage-grouse LWG is facilitated by Lorien Belton. The group covers two areas: Ibapah and the Sheeprock. Due to alarm over recent population declines in the Sheeprock, the WDARM group has also become the Technical Committee tasked for overseeing a series of enhanced efforts in the Sheeprock to reduce threats to sage-grouse and help the population rebound. Since July 2015, WDARM has increased its meeting frequency from three-four times a year to every 1-2 months. The group will continue its increased activity until the urgent need for coordination and implementation returns to lower levels. Although the focus is on the Sheeprock, the group has one meeting per year, normally in the spring, in the Ibapah area.

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 Sheeprock. 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. In 2015, lek counts which rebounded in other part of the state, including Ibapah, did not rebound in the Sheeprock.

Meetings and Field Tours, October 2014 – January 2016

Type	Date	Location	No.	Comments
Meeting	February 12, 2015	Tooele, UT	25	Prospector Trail, conifer removal projects
Meeting	March 24, 2015	Ibapah, UT	31	Population reports, NRCS and SGI updates
Field Tour	July 6, 2015	Vernon, UT; nearby areas	25	Conifer removal projects, recreation concerns, population decline issues
Meeting	August 3, 2015	Tooele, UT	16	Brainstorm session to address critical threats to sage-grouse in the Sheeprocks
Meeting	September 9, 2015	Tooele, UT	23	Conifer removal strategy, predation management, other updates
Meeting	November 3, 2015	Tooele, UT	36	Population baseline info, recreation planning systems, BLM plan amendment presentation
Meeting	January 28, 2015	Tooele, UT	25	WRI project reviews, Sheeprocks Task Force efforts updates, hydrology/conifer questions

Project and Research Highlights

With the 2014 lek counts, the WDARM group ramped up efforts to address a wide variety of threats to sage-grouse in the Sheeprock SGMA. This includes conifer removal planning, predation management, recreation enforcement improvements, and planned translocations and associated research, in addition to other topics.

A sub-team from WDARM formed to develop a long-range strategy for more extensive and strategic conifer removal in the Sheeprock area. Those plans were brought to the working group several times for comment and refinement. Other separate efforts are also taking place, through agencies with plans already in place and other goals for conifer management, but many of the projects are being linked together to provide short- and long-term habitat expansion opportunities for sage-grouse in the Sheeprock population.

Recreation management and planning has become a key topic in the WDARM group over the last year. Much of the conversation focuses around the Prospector Trail system, but other more diverse topics arise as well. Both the potential impacts of recreation on sage-grouse and sage-grouse habitat, as well as ways to address those issues, are part of a long and complex conversation that the group is undertaking.

Among the primary concerns of the group is that red foxes and ravens may be having a large impact on the areas' sage-grouse populations. The WDARM group identified areas most in need of predator control, and key individuals worked a strategy for increasing funding and effort to tackle the issue. The additional first on-the-ground work was done in late 2015. Having predation management in place was an important precursor to additional grouse being moved to the area.

Translocations and research are also tools planned to address the sage-grouse population drop in the Sheeprock SGMA. Sage-grouse will be brought from two other locations in the state to augment existing populations. Translocated and resident birds will be radio-marked and monitored to learn more about seasonal habitat use, nest success, and other information that will help identify limiting factors or risk factors for the Sheeprock population more generally. USU, BLM, USFS, and DWR are working jointly on the translocation and research efforts.

In addition to the intense focus currently in the Sheeprock SGMA, the yearly meeting in Ibapah serves to connect the Goshute Tribe to the ongoing conversations about sage-grouse. The meeting is help in conjunction with other regular meetings conducted by NRCS, to endure the best attendance at all meetings. The Tribe has generously hosted this meeting.

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Appendix – List of Publications - 2014-2016

Caudill, D., M.R. Guttery, B. Bibles, T.A. Messmer, G. Caudill, E. Leone, D.K. Dahlgren, and R. Chi. 2014. Effects of climatic variation and reproductive trade-offs vary by measure of reproductive effort in greater sage-grouse. *Ecosphere*. http://www.esajournals.org/doi/abs/10.1890/ES14-00124.1

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