

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

Accomplishment Report

2010-2011



Photo by Todd Black

September 2011

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Submitted to

Michael, J. Styler, Executive Director, Utah Department of Natural Resources

Jim Karpowitz, Director, Utah Division of Wildlife Resources

Submitted by

**Noelle Cockett, Vice President for University Extension and Agriculture,
Utah State University, Logan**

Staff Members

**Terry A. Messmer, Lorien Belton, Todd Black, S. Nicole Frey, Rae Ann Hart
Utah Community-Based Conservation Program, Jack H. Berryman Institute
Department of Wildland Resources, and Utah Extension Service, Utah State
University, Logan.**

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Preface

In 2010, the U.S. Fish and Wildlife Service (USFWS) designed greater sage-grouse (*Centrocercus urophasianus*, hereafter referred to as sage-grouse) as candidate species for listing for protection under the Endangered Species Act of 1973 (USFWS 2010). A key factor in this decision was the determination by the USFWS that the regulatory mechanisms to ensure the continued existence of the species are lacking. This report summarizes the 2010-2011 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). This 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). Specific topics addressed by the LWGs plans include:

1. Staffing, funding, funding sources, and other resources necessary to implement LWG's plans.
2. Legal authority of the partners to implement the plan.
3. The legal procedural requirements (environmental reviews) needed to implement the plans and how this will be accomplished.
4. Authorizations or permits that may or will be needed and how these will be obtained.
5. The type and level of voluntary participation (number of landowners involved, types of incentives used to increase participation).
6. Regulatory mechanisms (laws, ordinances, etc.) that may be necessary to implement the plans.
7. A statement regarding the level of certainty that the funding to implement the plans will be obtained.
8. An implementation schedule to include incremental completion dates. (The LWG sage-grouse conservation plans, previous annual reports, and meeting minutes can be accessed at www.utahcbcp.org.)

The conservation plans discuss the level of certainty that the management efforts identified and implemented will be effective. Specific topics addressed in the conservation plans include:

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

Executive Summary

The Utah Community-based Conservation Program (CBCP) encompasses the historical range of greater sage-grouse (*Centrocercus urophasianus*, hereafter sage-grouse) in Utah as identified in the 2002 Strategic Management Plan for Sage-grouse (Figure 1). The plan, approved originally approved by the Utah Wildlife Board on 1 June 2002 was revised 2009 (Utah Division of Wildlife Resources [UDWR] 2009). This plan identified the need to organize local sage-grouse working groups (LWGs) to develop and implement voluntary sage-grouse conservation plans. The CBCP is intended to be a long-term collaborative effort to support LWG administrative needs. 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 2010-2011, Utah's Adaptive Resources Management Greater Sage-grouse LWGs continued implementation of their sage-grouse conservation plans (Plan). The LWGs include representatives from state and federal agencies of land and resource management, non-governmental organizations, private industry, local communities, and private landowners.

In this report we summarize efforts of the LWGs to implement the conservation strategies and actions outlined in their Plans. Please note that if a strategy or an action number is missing from this report or no comments are reported under a specific strategy; it means that no action(s) were reported during the period towards its completion. These strategies meet the guidelines set forth by the U.S. Fish and Wildlife Service (USFWS) in their Policy for Evaluation of Conservation Efforts (PECE) standards. The conservation strategies and actions address the five USFWS listing factors as they apply to sage-grouse in each LWG area. Plan recommendations and guidance are voluntarily being implemented by all LWGs. The LWGs meet regularly to review actions and encourage adoption of Plan conservation strategies and actions. In 2010-2011, additional emphasis was placed on updating the Plans to incorporate strategies to address the conservation threats identified in the USFWS (2010) decision to designate sage-grouse as a candidate species for protection under the Endangered Species Act of 1973). Each LWG plan contains a table of ranked threats that currently or potentially affecting sage-grouse and sagebrush habitats in their area. This threat analysis, combined with recommended strategies and actions, provided a framework for LWGs to implement their Plans over the next five years. Plans are being implemented using an adaptive resource management approach. As new information emerges from local and range wide conservation efforts, the LWGs are using it to update management strategies, and priorities in their area. All 10 Utah LWGs have completed sage-grouse conservation plans. These plans and summaries of LWG activities can be found online at www.utahcbcp.org.

In 2010, the USUEXT/UDWR LWG partnership (Utah Community-based Conservation Program) was recognized by the Utah Center for Rural Life at Southern Utah University with a 2010 Utah Rural Honors Award. The award was presented by Gov. Gary Herbert at the 2010 Utah Rural Summit, held in Cedar City, Utah on the SUU campus. The award recognizes the unique partnership for engaging Utah rural communities in proactive efforts to conserve sage-grouse and other sagebrush obligate species.

Staff

Project Director:

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

Project Staff:

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

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

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

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

Michael R. Guttery, Post-Doctoral Fellow, Department of Wildland Resources, Utah State University, Logan.

Funding:

In July 2006, Utah State University entered into a 5 year agreement with the Utah Division of Wildlife Resources (UDWR) to develop and facilitate the Utah Community-Based Conservation Program. This agreement provided up to \$136,000 annually in funding and in-kind matches through June 30, 2011, to conduct the program. Additional funding of up to \$160,000 a year was provided through by the Jack H. Berryman Institute through Utah State University Extension. Additional support in terms site and agency specific grants and contracts in the amount of \$300,000 were entered into in 2010-2011 to support LWG activities, project monitoring and evaluation. In June 2010, the 5 year agreement between UDWR and USU supporting CBCP staff efforts to facilitate LWGs was completed. During 2010, UDWR provide \$92,000 to support CBCP LWG facilitation. In July 2010, the UDWR and USU entered a one year collaborative agreement to continue LWG facilitation. This agreement was for \$49,275. During 2011, the UDWR experienced a significant budget shortfall. However, even given drastic program cuts, the UDWR found funding to support the LWGS. These actions attest to the UDWR's commitment to fulfill the state sage-grouse strategy. Additional funding of \$163,300 was provided by USUEXT to support CBCP staff and operations. In 2011, additional financial support was received from Deseret Land and Livestock (\$9,250), Utah State University Extension (\$8,090), Berry Petroleum Company (\$25,000), the Natural Resources Conservation

Service (NRCS) Sage-grouse Initiative (\$69,000), and the Utah Watershed Restoration Initiative (\$130,000) to support LWG research and project monitoring efforts.

Legal Authority

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

Project Goals

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

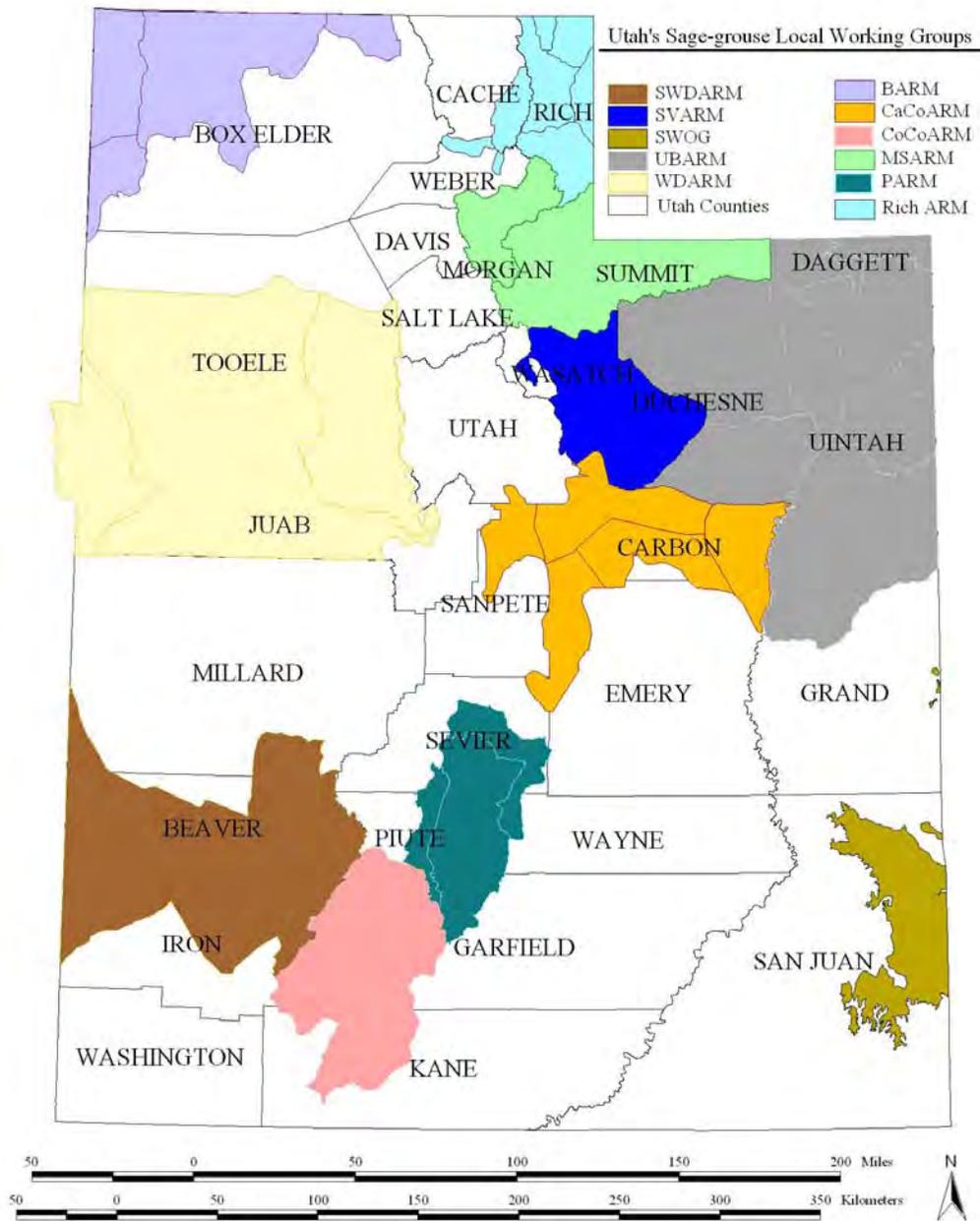


Figure 1. Utah Sage-grouse Conservation Areas, Utah Strategic Management Plan for Sage-grouse (UDWR 2009). (Note this report summarizes conservation actions completed to benefit greater sage-grouse. Thus it does not include Gunnison sage-grouse (*C. mimimus*) conservation actions. This species inhabits San Juan County).

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

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

The conservation actions and strategies of the BARM LWG were reviewed and updated in 2010-2011. Actions continue to be implemented by partners. Specific highlights included a field tour conducted June 2010 in conjunction with the Utah Chapter of the Society for Range Management and the West Box Elder Soil Conservation District.

In March of 2011, the Soil Conservation District approached the BARM group and asked the group to merge with the newly formed Coordinated Resource Management (CRM) effort. The CRM will oversee resource management plans, implementation and coordination with state, private, and federal partners. The West Box Elder Soil Conservation District in conjunction with Box Elder County are working on a comprehensive conservation plan for West Box Elder County and will incorporate the BARM sage-grouse plan. Names have been submitted to the West Box Elder CRM for approval of a sage-grouse sub-committee. Once this sub-committee is approved, the first task will be to evaluate and update the sage-grouse plan.

The new CRM group will meet bi-monthly to include an annual summer field tour.

Conservation Actions and Strategies

1. Strategy: By 2016, identify PJ stands within the resource area that encroaching in key sage-grouse habitat.

1.1. Action: Revisit and make recommendations to retreat as needed PJ removal sites.

BARM members continue to work on identifying areas where PJ is encroaching and working with the Watershed Restoration Initiative (WRI) to secure funding and to reduce this threat.

2. Strategy: By 2011 make an assessment of cheat grass and other non-desirable species in sage-grouse habitats.



Figure 2. The Box Elder Adaptive Resource Management (BARM) Sage-grouse Local Working Group Conservation Area consists of 1,702,251 acres located in northwestern Utah.

2.1. Action: Review and monitor all vegetative sampling by all partners (range trend crew completed surveys in 2006 and again in 2011).

BARM data suggested that cheatgrass is increasing in abundance and at higher elevations. This could be in response to observed increases in average temperatures.

2.2. Action: Avoid using fire in sage-grouse habitats prone to invasion by cheatgrass or other invasive weed species.

No fires were used for habitat restoration in areas where cheatgrass was present in 2009-2010.

2.3. Action: Evaluate all wildfires and prescribed burns and reseed with appropriate species to prevent establishment of cheatgrass and other invasive weed species.

Lynn seeding area was evaluated and BLM will take action in 2010 to complete the reseeding.

2.4. Action: Work with and identify other partners (County, UDOT, and private industry) to establish fire breaks in key areas to protect important sage-grouse habitat.

BARM partners met with BLM to discuss areas to establish fire breaks to protect key wintering and lekking areas for sage-grouse in and around Badger Flats, Dairy Valley, and Curlew Junction.

2.5. Action: Treat areas where undesirable vegetation has become, or is at risk of becoming, a factor in sage-grouse habitat loss or fragmentation.

BLM completed a fire break for the Badger Flat area to protect sage-grouse lekking habitat. Project is being monitored by USU.

2.6. Action: Work with existing weed management programs to control noxious weeds in the Resource Area.

BARM members continue to work with County weed boards in identifying any areas of concern.

2.7. Action: Identify large areas of introduced plant species that are not meeting sage-grouse habitat needs and reseed with native species where appropriate.

No action taken in 2010/2011.

2.8. Action: Identify areas where pinyon or juniper trees are encroaching on good quality sagebrush habitat and treat as needed.

See strategy 1 action 1

2.8. Action: Manage fire, transportation, and vegetation treatments to minimize undesirable vegetation where possible.

No action taken in 2009-2010.

3. Strategy: By 2011, complete an assessment on the condition of available water sources and identify potential new water improvement/development projects.

3.1. Action: Manage vegetation and artificial structures to increase water-holding capabilities of likely habitat.

No action taken in 2010/2011.

3.2. Action: Install catchment structures to slow run-off, hold water, and eventually raise water tables.

BARM members were assigned areas within each of their respective jurisdictions to identify potential areas and will report in late 2011.

3.3. Action: Modify or adapt pipelines or developed springs to create small wet areas.

No action taken in 2010/2011.

3.3. Action: Locate projects to minimize potential loss of water table associated with wet meadows.

BARM members were assigned areas within each of their respective jurisdictions to identify potential areas and will report in late 2010. This report will be included in our 2011 summary.

3.3. Action: Identify key elements of various water projects by developing partners to work cooperatively to maintain existing water sources.

No action taken in 2010/2011.

4. Strategy: By 2011, identify key public, private, and Utah School and Trustlands Administration (SITLA) lands in the Conservation Area (specific locations to be selected) that are protected and/or managed so as to conserve/improve sage-grouse nesting habitat.

4.1. Action: Encourage use of BARM defined desired conditions for state, private, and federal lands and influence management actions in order to move toward those conditions.

BARM partners discuss these areas as projects they are developed.

4.2. Action: Support partner efforts for special designations that protect sage-grouse nesting habitat on public, private, and SITLA lands.

The BARM group identified the Rosebud/Muddy/Upper Dove Cr./Upper Grouse Cr./Cotton Thomas/Upper Meadow Cr. lek complexes as areas that need special protection and consideration. Almost 80% of all west Box Elder lekking birds and the corresponding nesting occur in an area from Immigration road north to middle/upper Dove Creek, upper Lynn Valley west to Kimbell Cr., north through Cotton Thomas Basin and southwest into the upper Meadow Cr./Joe Dahr Cr. Basin. This relatively small area is the core of the BARM's sage-grouse population with corresponding metapopulation extensions into Idaho and NE Nevada.

4.3. Action: Use available grouse and brood telemetry data to identify key nesting/brooding habitat areas within the Grouse Creek sub unit.

Ongoing research work; USU graduate students are continuing research to identify important areas. This work will be completed by 2012.

4.4. Action: Pursue habitat improvement projects (to meet Desired Conditions) on private and SITLA lands in areas used by sage-grouse for nesting habitat.

All habitat improvement projects are approved and presented to WRI and have BARM support.

4.5. Action: Identify research needs to address sagebrush treatments at 'lower' elevations where the majority of these nesting activities occur.

BARM has identified additional research needs for wintering areas and creating fire breaks and improving wintering habitat in the Badger Flat and Dairy Valley area of the Grouse Creek sub unit and in the Park Valley area.

4.6. Action: Use mechanical or chemical treatments to reclaim and/or reseed areas (when necessary) using suitable seed mixtures.

No action taken in 2009. In the fall of 2010, BLM completed green stripping to mitigate wildfire potential on Badger flats. USU will be evaluating the vegetation and sage-grouse responses in 2011-2013.

4.7. Action: Where economically feasible, restore understory vegetation in areas lacking desirable quality and quantity of herbaceous vegetation.

On going with WRI projects, all WRI funded projects are reviewed by BARM members and reseeding efforts are a wildlife/sage-grouse approved mix.

4.8. Action: Conduct vegetation treatments to improve forb diversity (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed area, if needed.

On going with WRI projects, all WRI funded projects are reviewed by BARM members and reseeding efforts are a wildlife/sage-grouse approved mix.

4.9. Action: Develop management techniques to increase forb diversity and density in sagebrush steppe, within limits of ecological sites and annual variations.

On going with WRI projects, all WRI funded projects are reviewed by BARM members and reseeding efforts are a wildlife/sage-grouse approved mix.

5. Strategy: By 2011, identify key public, private, and SITLA lands in the Conservation Area (specific locations to be selected) are protected and/or managed so as to conserve/improve sage-grouse lekking areas/habitat.

5.1. Action: Open lek areas that have been invaded by sagebrush and other shrubs.

No action taken in 2010/2011.

5.2. Action: Encourage use of defined desired conditions for state, private, and federal lands and influence management actions in order to move toward those conditions.

On-going

5.3. Action: Support partner efforts for special designations that protect sage-grouse lekking habitat on public, private, and SITLA lands.

No action taken in 2010/2011.

5.4. Action: Pursue habitat improvement projects (to meet Desired Conditions) on public, private, and SITLA lands in areas used by sage-grouse for lekking.

No action taken in 2010/2011.

6. Strategy: Minimize the impact of excessive predation.

6.1. Action: Begin site-specific predation management considering all predator species (especially common raven) where necessary and appropriate.

No action reported by partners at the time of this report for 2010/2011.

6.2. Action: Support efforts of USDA-WS to remove red foxes and ravens in areas used by sage-grouse for nesting and brood-rearing during spring and early summer.

See 6.1

7. Strategy: Through 2016, avoid natural resource development within important sage-grouse use areas. If development does occur, work with industry to minimize impacts.

7.1. Action: Participate in county planning efforts for natural resource exploration and development to ensure that biodiversity impacts are minimized.

BARM members commented on various aspects of the project, see Ruby pipeline EA

7.2. Action: Cooperate with partners (BLM/USFS/SITLA/NRCS) planning efforts to minimize impacts on sage-grouse and sage-grouse habitat.

BARM members commented on various aspects of the project, see Ruby pipeline EA

8. Strategy: By 2016, identify measures to protect key wintering areas available to sage-grouse.

8.1. Action: Use available grouse telemetry data in the Grouse Creek sub unit and local knowledge in other sub units to map these areas.

USU researchers started working on this in 2010 to map these areas and expect to be completed by late 2012.

8.2. Action: Work with public and private partners to identify areas through winter locations (Dry Basin, Montgomery Ranch, South Kilgore, Dakes Pass).

Ongoing USU research has identified additional wintering areas. These areas have been mapped. BARM partners met with BLM to discuss areas to establish fire breaks to protect key wintering and lekking areas for sage-grouse in and around Badger Flats, Dairy Valley, and Curlew Junction.

8.3. Action: Use UDWR fixed wing winter surveys for big game to identify areas.
No action taken in 2010 with the UDWR.

9. Strategy: By 2009, maintain or increase populations of sage-grouse in the Conservation Area.

9.1. Action: Support continued sport hunting within current UDWR models.

BARM group supports current UDWR harvest recommendations and models.

9.2. Action: BARM group will consider support of any translocation of sage-grouse hens from the Conservation Area.

No birds were translocated in 2010/2011.

9.3. Action: Work with UDWR to explore other methods (Selected lek or lek complexes counts and statistical inferences).

Post doc work by USU to explore and evaluate these methods. Results expected by 2012.

10. Strategy: Increase cooperation and coordination between BARM and other public and private partners.

10.1. Action: Continue with quarterly BARM meetings. Review and assess our local plan and MOU.

BARM partners meet 3-4 times a year as a group with three meetings and a field tour in 2010/2011. See BARM meeting schedule on the web at

<http://utahcbcp.org/html/groups/boxelder>

11. Strategy: Through the duration of the plan, continue looking at and evaluating current predator management strategies especially in areas used by sage-grouse for nesting and brood-rearing.

11.1. Action: Modify power lines and wood fence posts (to remove raptor perches) in important sage-grouse areas, where feasible and where predator concerns have been identified.

USU published results of these monitoring efforts in;

http://utahcbcp.org/files/uploads/boxelder/Thacker_Dissertation%20.pdf and

http://utahcbcp.org/files/uploads/boxelder/2008BARM_Final.pdf

11.2. Action: Remove trees, remove/modify raptor perches, and maintain quality sagebrush habitat, where predation concerns on sage-grouse have been identified.

BLM ongoing lop and scatter and brush hog work east of Badger flat and up Pole Creek and Dry Canyon area.

11.3. Action: Maintain or increase site-specific predation management to consider all predator species (especially common ravens and red fox) where necessary and appropriate.

See strategy and action 6 above.

11.4. Action: Initiate research on direct and indirect impacts of predation during each sage-grouse life history phase.

No action taken to date by any working groups.

11.5. Action: Coordinate management and research with USDA-WS.

See strategy and action 6 above.

11.6. Action: Support efforts of USDA-WS to remove mammalian predators and corvids in areas used by sage-grouse for nesting and brood-rearing during spring and early summer.

See strategy and action 6 above.

11.7. Action: Identify additional sources of funding to continue current predator removal efforts.

Ongoing

Major Needs and Concerns

In early 2011, the sage-grouse local working group known as BARM was dissolved into a Coordinated Resource Management group (CRM) at the decision of BARM members and the West Box Elder Watershed team. This larger group will form a sage-grouse subcommittee and this subcommittee will function as a smaller group of the CRM. Nominations for the sage-grouse plan sub-committee membership were submitted and will be ratified by CRM board before the end of the year. The sub-committee will re-evaluate the BARM sage-grouse plan and update Actions and Strategies prior to 2012.

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

The Castle Country Adaptive Resource Management Plan (CaCoARM) Sage-grouse Local Working Group was organized in 2004. This LWG is facilitated by Mr. Todd A. Black. CaCoARM consists of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals.

The information below summarizes efforts completed in 2010-2011 individual and partners to address threats identified in the Castle Country Greater Sage-grouse Local Conservation Plan, October 2006 and by the USFWS (2010). This adaptive plan is in effect until the year 2016. CaCoARM partners reported on specific actions completed or addressed in 2010-2011 and identified steps to be taken to implement addition actions into subsequent years of the plan. For action items completed in 2010/11 see the italicized text below. For the complete list of threats identified by the CaCoARM group, see page 64 of the conservation plan located on line at

http://utahcbcp.org/files/uploads/carbon/CaCoARM_final-01-07.pdf



Figure. 3. The Castle Country Adaptive Resource Management (CaCoARM) Sage-grouse Local Working Group Conservation Area consists of 1,906,443 acres located in eastern Utah.

Conservation Strategies and Actions

1. Strategy By 2011, make an assessment of pinyon-juniper (PJ) stands in key sage-grouse habitat throughout the resource area.

1.1. Action Revisit and make recommendations to treat or retreat as needed PJ removal sites (West Tavaputs, Horn Mountain, Price Airport (West) Benches, Gordon Creek, and Sanpete County).

BLM EIS approved for West Tavaputs Plateau (Bill Barrett Cooperation [BBC] Oil/Gas lease) and is working with UDWR and partners to identify sites and recommend sites on BLM and SITLA grounds. A West Tavaputs mitigation team was formed by the BLM and CaCoARM has a representative on this team. Potential projects for PJ removal were discussed for the Ford Ridge Emma Park area, these to be discussed further in 2012.

Partners: BLM, UDWR, NRCS, USFS, Private Landowners

Threats Addressed: Vegetation management, incompatible livestock grazing management, drought and weather, PJ encroachment

Aspects of Sage-grouse Ecology Addressed: winter habitat quality, summer/late brood rearing habitat quality, connectivity of seasonal habitat types

2. Strategy: By 2011, make an assessment of non-desirable vegetative species in sage-grouse habitats.

2.1. Action Review and monitor all vegetative sampling data collected by all partners and monitor as needed.

Private landowners are working with NRCS to spray and remove rabbit brush in sage-grouse habitat in the Emma Park area. Weed management groups in various districts continue to address noxious weeds through chemical spraying in sage-grouse habitat.

2.2. Action Avoid using fire in sage-grouse habitats prone to invasion by cheat grass or other invasive weed species.

No fires were used as treatments in areas prone to invasive species in 2010/11.

2.3. Action Evaluate all wildfires and prescribed burns and reseed with species that are adapted to the site and/or competitive with non-desirable plants.

There were several controlled fires in the LWG area but none of them were conducted in areas where there were any concern with non desirable species or in sage-grouse habitat.

Partners: UDWR, NRCS, USFS, BLM

Threats Addressed: Vegetation management, incompatible livestock grazing, drought, invasive/noxious weeds, lack of proper range management, incompatible fire management practices.

Aspects of Sage-grouse Ecology Addressed: Nesting/early brood rearing habitat quality, summer/late brood rearing habitat quality, connectivity of seasonal habitat types

3. Strategy: By 2011, assess mesic vegetation sites and identify potential new water projects.

3.1. Action Identify key elements of various water/erosion projects by developing partnerships to work cooperatively to maintain existing water sources (natural and/or man made) and control erosion.

Ongoing – The UDWR completed a project in Gordon Creek to reduce erosion. The group discussed potential future work in the Emma Park area to reduce the erosion. These discussions will be worked into WRI proposals for future funding.

3.2. Action Identify key elements of various water projects by developing partnerships to work cooperatively to develop new water sources.

Ongoing with Canyon Fuel Company, LLC dba as SUFCO Corp on Wildcat Cat Knoll.

3.3. Action: Work with the NRCS and private partners to develop NRCS, WHIP, and EQIP projects that would increase mesic sites and brood-rearing habitat quality in the Resource Area.

The group discussed potential for work in the Emma Park area to reduce the erosion and working with NRCS and landowners to identify needs and potential projects. Additional sites have been identified on the east end of West Tavaputs on private land.

3.4. Action: Work with agency partners to develop projects that would increase mesic sites and brood-rearing habitat quality in the Resource Area.

SUFCO Corp and USFS are proposing developing water sources on Wildcat Knoll. Dixie harrow work was completed on private property north of Scofield in upland habitat to increase wet meadow area. The UDWR completed a project in Gordon Creek to reduce erosion and improve mesic sites, more information on this project is available on the Utah Watershed Initiatives web page see <http://wildlife.utah.gov/watersheds/>

3.5. Action: Work with private and public partners to monitor effects of water improvement projects on vegetation and sage-grouse habitat use.

No action to monitor effects of water improvement projects were taken in 2010/11.

3.6. Action: During times of drought, coordinate with public and private partners to maintain water available for sage-grouse during late summer and early fall in areas used by sage-grouse during this time.

No action taken. 2010-2011 were non-drought years.

Partners: UDWR, NRCS, USFS, UFB, SCD, USUEXT, Private landowners

Threats addressed: Vegetation management, drought and weather, water distribution

Aspects of Sage-grouse Ecology Addressed: Nesting/early brood rearing habitat quality, summer/late brood rearing habitat quality, connectivity of seasonal habitat types

4. Strategy Through 2016, identify key public/SITLA and private lands in the Resource Area (specific locations to be selected) that are recognized by the group as critical to be protected and/or managed to effectively conserve/improve sage-grouse nesting/brood rearing habitat.

4.1. Action: Encourage the use of group defined, desired conditions for state and federal lands and influence management actions in order to move toward those conditions.

This has been and will continue to be an ongoing process with partners and WRI Southeastern Region team.

4.2. Action: Support partner efforts for special designations that protect sage-grouse nesting/brood rearing habitat on public/SITLA and private lands.

This has been and will continue to be an ongoing process with partners and WRI Southeastern Region team.

4.3. Action: Use available grouse and brood telemetry data to identify key nesting/brood rearing habitat areas within the Emma Park and Tavaputs subunit.

This is underway state wide with USU research project. BBC completed GIS project mapping sage-grouse habitat on Tavaputs. Radio telemetry work to describe sage-grouse ecology and habitat use was started by UDWR in 2010 on the Tavaputs and will continue through 2012.

4.4. Action: Support partner efforts to rehabilitate historical nesting/brood rearing habitat within Sanpete subunit.

The group is fully supportive of any efforts to restore sage-grouse habitat in the area, however currently no sage-grouse are found in the area. Monitoring efforts will continue by UDWR and other partners.

4.5. Action: Pursue habitat improvement projects (to meet desired conditions) on public/SITLA and private lands in areas used by sage-grouse for nesting/brood rearing habitat.

This is accomplished through the WRI process. The LWG identifies needs and areas and discusses these possibilities. Once identified, they are presented to the WRI southeastern region team for approval and funding. Additional efforts and projects are discussed within the LWG with mitigation funds from oil/gas development.

4.6. Action: Identify research needs to address sagebrush treatments at 'lower' elevations where the majority of the nesting/brood rearing activity occurs.

This has been and will continue to be an ongoing process with partners and Open Range Consulting.

4.7. Action: Work with the NRCS and private partners to develop NRCS, WHIP, and EQIP projects that would increase nesting/brood rearing habitat quality in the Resource Area. *The group discussed potential for work in the Emma Park area to reduce the erosion and working with NRCS and landowners to identify needs and potential projects. Additional sites have been identified on the east end of Tavaputs on private property.*

4.8. Action: Work with agency partners to develop projects that would increase brood-rearing habitat quality in the Resource Area. *This is accomplished through the WRI process. The LWG identifies needs and areas and discusses these possibilities. Once identified, they are presented to the WRI southeastern region for approval and funding.*

4.9. Action Work with private and public partners to monitor effects of habitat improvement projects on vegetation and sage-grouse nesting/brood rearing habitat use. *This was accomplished with the UDWR range trend studies and through monitoring UPCD projects. The Southeastern range trend sites were monitored summer of 2010. For more information see http://wildlife.utah.gov/range/pdf/2010_WRI_Report.pdf*

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners

Threats Addressed: Vegetation management, livestock grazing, drought and weather, invasive/noxious weeds, PJ encroachment

Aspects of Sage-grouse Ecology Addressed: Nesting/early brood rearing habitat quality, summer/late brood rearing habitat quality, connectivity of seasonal habitat types

5. Strategy: Through 2016, identify key public/SITLA and private lands in the Resource Area (specific locations to be selected) that are recognized by the group to be protected and managed to conserve and improve sage-grouse lek areas and habitat.

5.1. Action: Encourage the use of group defined desired conditions for state and federal lands and influence management actions in order to move toward those conditions. *This has been and will continue to be an ongoing process with partners and WRI Southeastern Region team.*

5.2. Action: Support partner efforts for special designations that protect sage-grouse lek habitat on public/SITLA and private lands. *In 2010, BLM released the range wide lek/breeding density maps. See http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs.Par.46599.File.tmp/GRSG%20Rangewide%20Breeding%20Density.pdf for more details.*

5.3. Action: Use available grouse and brood telemetry data to identify key lek habitat areas within the Emma Park subunit. *This is underway state wide with UDWR seasonal technicians.*

5.4. Action: Support partner efforts to rehabilitate historical lek habitat within Sanpete subunit.

No action taken—the group discussed the possibility to remove this action from the plan. Currently no sage-grouse leks are known to exist in the Sanpete subunit and habitat has been altered such that year round habitat including lekking habitat is no longer available.

5.5. Action: Pursue habitat improvement projects (to meet desired conditions) on public/SITLA and private lands in areas used by sage-grouse for lek habitat. *The group discussed the need to identify leks that could use habitat improvement projects. UDWR will work through 2012 to identify needed improvements.*

5.6. Action: Identify research needs to address sagebrush treatments at ‘lower’ elevations where the majority of the lek activity occurs.

This has been and will continue to be an ongoing process with partners.

5.7. Action: Work with the NRCS and private partners to develop NRCS, WHIP, and EQIP projects that would increase lek habitat quality in the Resource Area.

This has been and will continue to be an ongoing process with partners and NRCS. In 2010 Sage-grouse Initiative (SGI) monies were identified and ear marked and NRCS is holding meetings with and working with landowners to identify projects.

5.8. Action: Work with agency partners to develop projects that would increase lek habitat quality in the Resource Area.

The group discussed the need to identify leks that could use habitat improvement projects.

UDWR will work through 2012 to identify needed improvements.

5.9. Action: Work with private and public partners to monitor effects of these habitat improvement projects on vegetation and sage-grouse lek habitat.

NRCS is working with private contractors and landowners to identify projects and needed monitoring to evaluate the identified projects from the SGIP funded projects.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners

Threats Addressed: Vegetation management, livestock grazing, drought and weather, invasive/noxious weeds, PJ encroachment

Aspects of Sage-grouse Ecology Addressed: Nesting/early brood rearing habitat quality, summer/late brood rearing habitat quality, connectivity of seasonal habitat types

6. Strategy: Change lek vegetation conditions to allow for predator recognition and visibility.

6.1. Action: Open lek areas that have been invaded by sagebrush and other shrubs.

Work continued on private lands in Emma Park. A landowner cleared brush in and around a historical lekking area on approximately 40 acres.

6.2. Action: Map and inventory leks with potential for restoration.

This is underway statewide with UDWR seasonal technicians.

6.3. Action: Maintain and enhance desired conditions for leks.

This is underway statewide with UDWR seasonal technicians.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners

Threats Addressed: Predation, invasive/noxious weeds, PJ encroachment, power lines, fences, and other tall structures

Aspects of Sage-grouse Ecology Addressed: Population size, lek habitat quality, population distribution

7. Strategy: Increase cooperation and coordination between CaCoARM and public and private partners.

7.1. Action: Work with the NRCS to review and potentially endorse NRCS WHIP and EQIP projects that would benefit sage-grouse in the Resource Area.

Conducted a field tour and attended meetings with West Tavaputs mitigation meeting with all major partners to discuss West Tavaputs in summer of 2010. The field tour was held in summer of 2011 to look at the Emma Park and Scofield area projects.

7.2. Action: Continue to work with and identify key landowners within the Resource Area that have sage-grouse or sage-grouse habitat.

This has been and will continue to be an ongoing process with NRCS and other partners.

Partners: USUEXT, UDWR, NRCS

Threats addressed: Vegetation management

Aspects of Sage-grouse ecology addressed: population size, population distribution, seasonal habitat quality.

8. Strategy: Increase informational and educational opportunities with local community and CaCoARM partners.

8.1. Action: By 2008, develop informational handouts about sage-grouse ecology and CaCoARM activities.

USU CBCP newsletter. Local paper (Sun Advocate) attended and reported on annual field tour. NRCS held an open house to with landowners to discuss SGI funding and other wildlife programs.

8.2. Action: Through 2016, include information about CaCoARM activities in County Extension newsletter.

USU County Extension Agent reports on various programs and activities for landowners to participate in.

8.3. Action: Work with NRCS, UDWR and SCD to schedule spring field tour of habitat management projects on private lands.

UDWR spring annual lek watch tour. The 2010 field tour included Hunt Oil and Butch Jensen's property to discuss sage-grouse projects and habitat.

8.4. Action: Coordinate workshops for private partners to share information about habitat enhancement, funding opportunities, and other relevant topics to be identified as needed.

NRCS mailed out flyers (40+) and held an open house to with landowners to discuss SGI funding and other wildlife programs. NRCS has held other meetings with private landowners.

Partners: USUEXT, UDWR, USFS, BLM, SITLA, NRCS, Utah Farm Bureau Federation (UFBF), private partners, SCD.

Threats Addressed: Inability to maintain local control and have local input on sage-grouse conservation issues, OHV Recreation

Aspects of Sage-grouse Ecology Addressed: Population size, population distribution, connectivity of populations and subpopulations

9. Strategy: Through 2011, work with industries involved in natural resource development within important sage-grouse use areas to minimize impacts.

This has been and will continue to be an ongoing process with partners.

9.1. Action: Participate in county planning efforts for natural resource exploration and development to ensure that impacts to biodiversity are minimized.

In 2010 Blue Tip Energy converted a gas fired pump to an electric pump to reduce and mitigate noise around on Jensen's lek. CaCoARM and other partners continue participation in the West Tavaputs Mitigation committee/team.

9.2. Action: Evaluate the interest and possibly develop a demonstration garden for the common vegetative species used in restoration.

No action taken to date on this item.

9.3. Action: Cooperate with partners' planning efforts to minimize impacts on sage-grouse and sage-grouse habitat.

CaCoARM and other partners continue participation in the West Tavaputs Mitigation committee/team. BBC West Tavaputs meetings through EIS reducing the number of oil pads and impacts. Two (Gateway South and Transwest) distribution power lines were originally proposed to bi-sect the West Tavaputs area but due to potential impacts, the routes were altered.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners

Threats Addressed: Power lines, fences, and other tall structures, predation, renewable and non-renewable energy development, roads

Aspects of Sage-grouse Ecology Addressed: Population size, population distribution, connectivity of populations and subpopulations

10. Strategy: Through 2016, increase population and habitat monitoring efforts for sage-grouse in the Resource Area.

10.1. Action: Encourage public and private partners to use techniques from Connelly et al. (2003a) "Monitoring of Greater Sage-grouse Habitats and Populations."

This has been and will continue to be an ongoing process with partners.

10.2. Action: Through 2009, search additional areas (TBD by the group) for new active lek sites.

New strutting areas were found in 2011, UDWR will monitor these areas for the next 3 years. Three new leks found prior to 2009, were included in the UDWR database and added as new leks.

10.3. Action: Work with UDWR to enlist and coordinate private volunteers and/or other agency biologists to search for new leks and conduct lek counts on active leks.

UDWR uses dedicated hunters to assist with lek counts.

10.4. Action: Coordinate with UDWR, public, and private partners to conduct terrestrial lek searches in areas suspected to contain undiscovered active leks. These sites include the area around Scofield Reservoir, portions of the Tavaputs Plateau, and portions of the South Manti populations.

See 10.2 above.

10.5. Action: Through 2016, test dead sage-grouse for West Nile Virus and any other parasites/pathogens of importance.

No recorded dead birds to test.

10.6. Action Coordinate with UDWR to conduct aerial surveys in areas (Tavaputs and Scofield areas) suspected to contain undiscovered active leks.

See 10.2 above.

Partners: NRCS, UDWR, USFS, BLM, Ute Tribe, SITLA, USUEXT , private partners

Threats Addressed: Parasites/disease, vegetation management

Aspects of Sage-Grouse Ecology Addressed: Population size, population distribution, connectivity of populations and subpopulations

11. Strategy: By 2016, minimize effects of roads and utilities in areas used by sage-grouse. *This has been and will continue to be an ongoing process with partners. Team members will continue to work with industry and new roads on private lands to avoid impacts.*

11.1. Action: Re-vegetate utility corridors with sage-grouse seed mixes.

None to date in 2011.

11.2. Action: Avoid placement of new roads and utilities near lek sites (specific distances should be site specific).

Moved access roads out of sage-grouse habitat into PJ sites in the Tavaputs/sagebrush flats area.

11.3. Action: Where possible, install perch deterrents on tall structures located in areas used by sage-grouse.

None in 2011.

11.4 Action: Where practical, install low-profile tanks in areas used by sage-grouse.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners, County Governments

Threats Addressed: Power lines, fences, and other tall structures, predation, renewable and non-renewable energy development, roads

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, connectivity of seasonal habitat types

12. Strategy: Through 2016, avoid locating homes or cabins within important sage-grouse use areas, within limits of private property rights. When necessary development does occur, work to minimize impacts to biodiversity.

12.1. Action: Participate in county planning efforts for home and cabin development to ensure that biodiversity impacts are minimized.

This is ongoing; a member of the CaCoARM is on the county planning and zoning board as a county representative.

12.2. Action: Educate County planning departments about where important sage-grouse use areas are located.

In March of 2011 USUEXT presented a sage-grouse status and LWG update to county commissioners and other county employees. A copy of this presentation can be found on the website www.utahcbcp.org.

12.3. Action: Establish easements or other land protection in crucial habitat.

None in 2011

12.4. Action: Work with county planners and county council to establish zoning ordinances for crucial habitat that protect those areas from inappropriate development.

This is ongoing; a member of the CaCoARM is on the county planning and zoning board as a county representative.

Partners: NRCS, UDWR, SITLA, USUEXT, County Planning departments, private partners.

Threats Addressed: Home and cabin development, roads, power lines, fences, and other tall structures.

Aspects of Sage-Grouse Ecology Addressed: Seasonal habitat quality, connectivity of seasonal habitats, connectivity of populations and subpopulations

13. Strategy: Through 2016, avoid locating oil and gas roads or pads near lek sites. Where impacts do occur, implement interim reclamation to well sites as soon as practical.

13.1. Action: Participate in county planning efforts for oil and gas exploration and development to ensure that sage-grouse impacts are minimized.

This is ongoing; a member of the CaCoARM is on the county planning and zoning board as a county representative. Additionally, UDWR comments to BLM before leases are sold to mitigate any impacts to lek locations and nesting/brooding habitat. Additionally onsite visits are made to further reduce impacts.

13.2. Action: Influence BLM/USFS/SITLA/private enterprise planning efforts to minimize impacts to sage-grouse.

UDWR comments to BLM before leases are sold to mitigate any impacts to lek locations and nesting/brooding habitat. Additionally onsite visits are made to further reduce impacts.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners

Threats Addressed: Renewable and non-renewable energy development, roads, power lines, fences, and other tall structures

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, connectivity of seasonal habitat types, connectivity of populations and subpopulations

14. Strategy: Provide for a use level and management system of domestic livestock grazing that maintains and improves both the long-term stability of sage-grouse populations and habitats and the livestock industry in the Resource Area.

14.1. Action: Coordinate grazing management with livestock operators to reduce negative resource and timing conflicts on leks and prime nesting habitat when possible.

This has been and will continue to be an ongoing process with partners through outreach and education and presentations and LWG meetings and field tours.

14.2. Action: Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site.

Partners are working with landowners who have sage-grouse projects to develop grazing management plans and in areas where re-seeding is involved the areas will receive two years (growing seasons) of rest.

14.3. Action: Encourage implementation of grazing systems that provide for areas and times of deferment, while taking into consideration the resource capabilities and needs of the livestock operator.

This has been and will continue to be an ongoing process with partners.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, UFBF, private partners

Threats Addressed: Livestock grazing

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality

15. Strategy: Maintain and, where possible, improve the perennial forb component in the understory.

15.1. Action: Reclaim and/or reseed areas disturbed by treatments using seed mixtures high in native bunch grasses and desirable forbs.

Ongoing, UDWR completed a project in Gordon Creek to reduce erosion; the area was harrowed and seeded.

15.2. Action: Restore understory vegetation in areas lacking desirable quality and quantity of herbaceous vegetation where economically feasible.

Ongoing, UDWR completed a project in Gordon Creek to reduce erosion; the area was harrowed and seeded. Ongoing process with partners through UPCD/WRI see <http://wildlife.utah.gov/watersheds/> for more details.

15.3. Action: Conduct vegetation treatments to improve forb diversity, (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed area, where appropriate.

Ongoing, UDWR completed a project in Gordon Creek to reduce erosion; the area was harrowed and seeded. Ongoing process with partners through UPCD/WRI.

15.4. Action: Develop management techniques to increase forb diversity and density in sagebrush steppe, within limits of ecological sites and annual variations.

Ongoing, UDWR completed a project in Gordon Creek to reduce erosion; the area was harrowed and seeded. Ongoing process with partners through UPCD/WRI.

Partners: NRCS, UDWR, USFS, BLM, SITLA, USUEXT, private partners

Threats Addressed: Vegetation management, fire, renewable and non-renewable energy development, roads, PJ encroachment, invasive/noxious weeds

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality

16. Strategy: Minimize impacts of agricultural conversion on sage-grouse.

Currently there are no areas that are currently occupied by sage-grouse that have a threat of conversion of agriculture. However, this is likely the major cause for decline and the loss of sage-grouse numbers in the Sanpete subunit. There are no recent reports of sage-grouse in this area.

16.1. Action: Maintain the Grassland Reserve Program (GRP) and improve its benefit to wildlife by altering seed mixes.

None in 2011.

16.2. Action: Expand GRP opportunities in sage-grouse habitats.

None in 2011.

16.3. Action: Maintain or reestablish sagebrush patches of sufficient size and appropriate shape to support sage-grouse between agricultural fields.

None in 2011.

16.4. Action: Work with NRCS and others to maintain the GRP program and enroll important sage-grouse habitats that are currently in grain production.

None in 2011.

16.5. Action: Encourage use of sage-grouse friendly seed mixes, including bunchgrasses, forbs, and big sagebrush in GRP and other grassland plantings.

None in 2011.

16.6. Action: Rehabilitate old, low diversity, sod-bound GRP fields with sage-grouse friendly seed mixes including bunchgrasses, forbs, and big sagebrush.

None in 2011.

16.7. Action: Encourage interest and enrollment of key sage-grouse habitats in relevant Farm Bill programs.

NRCS mailed out flyers (40+) and held an open house to with landowners to discuss SGI funding and other wildlife programs. NRCS has held other meetings with private landowners.

Partners: NRCS, UDWR, SITLA, SCD, USUEXT, private partners

Threats Addressed: Vegetation management

Aspects of Sage-grouse Ecology Addressed: Lek habitat quality, nesting/early broodrearing habitat quality, summer/late brood-rearing habitat quality, connectivity of seasonal habitat types

17. Strategy: Minimize the amount of quality sage-grouse habitat eliminated by residential and commercial land development consistent with private property rights.

Currently the area north and northwest of Scofield Reservoir is being and has potential be developed/more developed. Partners are encouraging landowners to use conservation measures and improve existing habitat that is not scheduled or zoned to be developed.

17.1. Action: Participate with County land-use decision makers in identifying key sage-grouse habitats.

This is ongoing; a member of the CaCoARM is on the county planning and zoning board as a county representative.

17.2. Action: Maintain sagebrush environments of sufficient size and shape around developments in sage-grouse habitat.

None in 2011.

17.3. Action: Encourage the voluntary use of conservation easements and other land protection vehicles with willing sellers in sage-grouse habitats.

None in 2011.

17.4. Action: Educate rural residents about the importance of good grazing management in keeping small tracts weed free and capable of providing habitat for wildlife.

None in 2011.

Partners: NRCS, UDWR, SITLA, USUEXT, County Planning departments, private partners

Threats Addressed: Home/cabin development, roads, invasive/noxious weeds, livestock grazing, power lines, fences and other tall structures

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, connectivity of seasonal habitat types

18. Strategy: Minimize the impact of excessive predation, especially in areas used by sage-grouse for nesting and brood-rearing.

18.1. Action: Plan and conduct research to determine the population-level effects of predation on sage-grouse.

No specific research projects have been or are planned in the sage-grouse LWG area.

18.2. Action: Where sage-grouse population-level effects from predation are clearly identified, plan and implement site-specific predation management as necessary.

Incorporate a monitoring plan to determine success.

18.3. Action: Support efforts of USDA-WS to remove coyotes, red foxes, and ravens in areas used by sage-grouse for nesting and brood-rearing during spring and early summer. *UDWR coordinates with WS to address specific areas in and around brooding and nesting areas.*

18.4. Action: Modify power lines and wood fence posts (to remove raptor perches) in important sage-grouse areas where feasible and where predator concerns have been identified.

No action taken in 2011.

18.5. Action: Remove trees, remove/modify raptor perches, and maintain quality sagebrush habitat where predation concerns on sage-grouse have been identified.

None—no specific areas identified.

18.6. Action: Begin site-specific predation management considering all predator species (especially common ravens and red fox) where necessary and appropriate.

UDWR coordinates with WS to address specific areas in and around brooding and nesting areas.

18.7. Action: Work with partners to identify additional sources of funding to continue current predator removal efforts.

Ongoing with partners and WS.

Partners: UDWR, USFS, BLM, SITLA, USDA-WS, private partners

Threats Addressed: Predation, PJ encroachment, power lines, fences and other tall structures.

Aspects of Sage-grouse Ecology Addressed: Population size, seasonal habitat quality

Major Needs and Concerns

The LWG has expressed concerns over oil and gas development in the resource area, particularly near the Emma Park area and what effects it may have on sage-grouse that occupy private lands. Additionally, CaCoARM is concerned about the isolated populations of grouse on the Horn Mountain and Wild Cat Knoll. USU has collected DNA samples to determine if these two populations are linked to other populations in the conservation area. Nest predation continues to be a concern especially in dry years. The LWG has encouraged WS to be more involved in the CaCoARM group and identify areas of concern.

Based on feedback received at the field tour this year, there is a need to provide more outreach and education efforts with the private cabin owners in and around the Scofield Reservoir area. USUEXT will work with UDWR to initiate this outreach process in 2012.

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

The CoCARM Local Working Group is facilitated by Dr. Nicole Frey. CoCARM consists of state and federal agency personnel, representatives from local government, academic institutions, private industry, and private individuals.

One of the main purposes of this Plan is to provide a framework of strategies and associated actions that can be implemented to abate threats identified by the USFWS (2010), address information gaps, and guide monitoring efforts. Strategies and actions listed below were developed by CoCARM partners. 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 Plan introduction. Strategies developed by CoCARM are designed to be specific to the local area while taking into consideration the guidelines at a range wide level.

Implementation of strategies and actions remains voluntary on the part of CoCARM partners. Yet, CoCARM has focused on partnerships for the last 6 years. For example, a partnership of in-kind support from UDWR and UACD, and a grant of \$25,000+ helped to fund a long-term project on sage-grouse in this region. This activity led to a partnership with BYU and Alton Coal Inc. (who granted another \$18,000) for continued research on grouse movements in response to adaptive management strategies.

Below, we have designated for each strategy the public and private partners who might be involved in implementation. Designation does not imply responsibility or commitment of resources of any sort to implementing, initiating, or completing any actions; however, it does provide a framework of resources and expertise.

Conservation Strategies and Actions:

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

1.1 Action: Determine predator community composition and depredation rate.

The group has actively pursued assistance with predator control in several areas that are critical to sage-grouse. We have supported the efforts for raven control, worked with WS and UDWR, and worked with Alton Coal Company to secure financial assistance.

1.2 Action: Avoid creating or improving raptor-nesting habitat in sage-grouse habitat.

1.3 Action: Determine brood-rearing success in each focus area annually.



Figure 4. The Color Country Adaptive Resource Management (CoCARM) Sage-grouse Local Working Group Conservation Area consists of 4,956,258 acres located in south-central Utah.

1.4 Action: Enlist WS to reduce population numbers of problematic predator species.

This action is on-going.

1.5 Action: Support current predator management efforts by other groups or agencies in the focus areas.

Panguitch and Johns Valleys are identified in the UDWR Predator Management Plan for the Paunsaugunt and Mt Dutton WMU's for coyote and raven control to protect sage-grouse.

Partners: USUEXT, UDWR, WS, land developers

Threats Addressed: Enhanced native and domestic predators

Aspects of Sage-grouse Ecology Addressed: Reduced nesting/early brood-rearing habitat quality, reduced summer/late brood-rearing habitat quality, reduced connectivity of seasonal habitat types, reduced connectivity of populations and sub-populations, reduced population size

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

2.1 Action: Identify and prioritize target areas needing improvement.

Each year, all projects are presented through the WRI process. Partners of CoCARM present their projects to the group for approval before presenting them to UPCD. Thus all projects meet with the approval of CoCARM and the southern region. UDWR is working with agencies to create a valley-wide corridor from Sink Valley to Bear Valley.

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

Working on WHIP project in conjunction with BLM, and a couple of SGI projects to seed a variety of forbs and grasses that will be available for sage-grouse have been funded. 2.1 and 2.2 have been met, but too early for 2.3. UDWR proposed nearly 6000 acres of PJ removal south of Hatch on SITLA property to WRI for funding.

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

We have conducted a 5 year radio-telemetry project to measure the response of grouse to habitat treatments. The manuscript and field reports will be completed in 2012.

Partners: USUEXT, UDWR, USFS, BLM, SITLA, NRCS

Threats Addressed: Invasive/alien vegetation species, fire and vegetation management, dramatic weather events

Aspects of Sage-grouse Ecology Addressed: Reduced connectivity of seasonal habitat types, reduced connectivity of populations and sub-populations, reduced nesting/early brood-rearing habitat quality, reduced summer/late brood-rearing habitat quality

3. Strategy: Improve water availability and riparian habitat in brood-rearing habitat by 2016.

3.1 Action: Survey and evaluate current water sources and needs.

3.2 Action: Partner with watershed specialists to identify new water sources.

3.3 Action: Consider new water developments that are multi-use and multi-purpose.

A project facilitated by NRCS treated 750 acres of PJ which should provide increased water availability with that much PJ removed. UDWR/NRCS is also working on a WHIP project that will provide two different water sources that will be available to sage-grouse.

3.4 Action: Coordinate with private landowners to protect current water availability that benefits brood-rearing habitat.

Partners: NRCS, BLM, UDWR, USFS, landowners, interest groups

Threats Addressed: Concentrated wildlife and/or livestock use, dramatic weather events, alternative land uses (mining, wind power, water development)

Aspects of Sage-grouse Ecology Addressed: Population distribution, reduced nesting/early brood-rearing habitat quality, reduced summer/late brood-rearing habitat quality, reduced connectivity of seasonal habitat types, reduced connectivity of populations and sub-populations

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

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

CoCARM continues to work actively with the local landowners and industry personnel in the CoCARM focus areas.

4.1.1. Action step: Identify regional groups and their contact person.

4.2 Action: Develop fact sheet to distribute to special interest groups.

We develop new items each year. This year, the Farm Bureau has had a display at two of our major meetings for our membership and has published articles in the UFBF News on sage-grouse and promoted landowner participation.

4.3 Action: Support partnership efforts for special designations that promote sage-grouse habitat.

NRCS has worked with landowners educating them about sage-grouse in the Alton area. Discussed SGI at the annual range livestock workshop in St. George and Kanab.

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

Also, the NRCS hosted an open house in Panguitch on SGI. This year our field tour was sponsored by Alton Coal Inc. The group toured the mine and surrounding areas.

4.5 Action: Distribute annual reports to local management agencies, county commissioners, and other interested parties.

This action is conducted each year.

4.6 Action: Proactively seek partnerships when developing new projects.

This action is conducted each year.

Partners: USUEXT, NRCS

Threats Addressed: Recreational use, development of roads or utilities, lack of communication among public parties, alternative land uses (mining, wind power, water development)

Aspects of Sage-grouse Ecology Addressed: 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 and sub-populations.

5. Strategy: Locate and monitor new active lek sites within the Resource Area.

5.1 Action: Survey landowners and land users to determine extent of sage-grouse distribution.

CoCARM continues to search for new leks, or investigate historic leks.

5.2 Action: Investigate possible new lek sites based on local reports.

Local BLM employees reported sage-grouse using newly treated areas. Biologists have investigated the site, but it does not appear to be a lek. However it does appear to constitute summer habitat.

5.3 Action: Survey for new lek sites during lek counts and survey historic sites for new activity.

This is conducted each year. This year UDWR conducted surveys by helicopter; focus areas were selected by the group. No new leks were found at this time.

5.4 Action: Rejuvenate historic lek site habitat for potential re-use.

This action is pending.

Partners: USUEXT, UDWR, NRCS, local landowners

Threats Addressed: Recreational use, invasive/alien vegetation species, concentrated wildlife and/or livestock use, alternative land uses (mining, wind power, water development), dramatic weather events.

Aspects of Sage-grouse Ecology Addressed: Reduced lek habitat quality, reduced population size, population distribution, reduced connectivity of populations and sub-populations

6. Strategy: Increase sage-grouse populations using direct management in Resource Area by 2016.

6.1 Action: Evaluate potential of translocation to supplement local populations.

6.2 Action: Support and encourage prevention of illegal harvest of sage-grouse.

Partners: UDWR, USUEXT

Threats Addressed: Dramatic weather events, enhanced native and domestic predators

Aspects of Sage-grouse Ecology Addressed: Reduced population size, population distribution, reduced connectivity of populations and sub-populations

7. Strategy: Minimize affects of new land developments and/or recreational uses on sage-grouse populations.

7.1 Action: Provide consultations and recommendations for new land developments and/or recreational uses.

7.2 Action: Regularly discuss new developments and alternative land uses in management agencies at local working group meetings.

7.2 Action: Identify and maintain a list of contact people involved in land and recreational developments.

7.3 Action: Involve local county and city planning commissions in meetings.

This year, presentations were given to Beaver, Garfield and Iron County Commissions.

Partners: USUEXT, BLM, UDWR, USFS, SITLA, county commissioners, local landowners

Threats Addressed: Recreational use, development of roads or utilities, alternative land uses (mining, wind power, water development), lack of communication among public parties.

Aspects of Sage-grouse Ecology Addressed: Reduced population size, 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 populations and sub-populations, reduced connectivity of seasonal habitat types

8. Strategy: Reduce impacts of concentrated wildlife or livestock use of sage-grouse winter and brood-rearing habitat by 2016.

8.1 Action: Identify and prioritize target areas needing improvement.

8.2 Action: Implement habitat improvements and direct management actions to improve distribution of problem animal communities.

The prescribed grazing conservation practice under NRCS planning process will help with this effort. Incentives are provided for leaving a specific amount of cover for nesting birds.

Partners: BLM, NRCS, USUEXT, UDWR, local landowners

Threats Addressed: Concentrated wildlife and/or livestock use

Aspects of Sage-grouse Ecology Addressed: Reduced nesting/early brood-rearing habitat quality, reduced summer/late brood-rearing habitat quality, reduced winter habitat quality

9. Strategy: Reduce threat of invasive/unwanted plant species in sage-grouse habitat by 2016.

9.1 Action: Remove juniper and pinyon pines from brood-rearing habitat.

UDWR/BLM/USFS/UACD have focused their efforts on projects to address this action through the WRI process.

9.2 Action: Reduce abundance of unwanted and/or invasive plant species.

9.2.1 Action step: Re-seed area after land disturbance such as mechanical treatments, fire, and human development.

This is a standard practice for BLM/USFS/UDWR.

9.2.2 Action step: Use dedicated hunters to help with re-seeding and rehabilitation efforts.

CoCARM region often uses dedicated hunters to help with their restoration efforts.

Several projects are planned this year to utilize dedicated hunters.

9.3 Action: Evaluate and use chemical applications where appropriate to restore habitat dominated by cheatgrass and/or noxious weeds.

9.4 Action: Evaluate the feasibility of using fire as a tool in areas where cheatgrass has been established or is prone to establish.

Partners: UDWR, BLM, USFS, interest groups

Threats Addressed: Fire and vegetation management, invasive/alien vegetation species

Aspects of Sage-grouse Ecology Addressed: Reduced nesting/early brood-rearing habitat quality, reduced summer/late brood-rearing habitat quality, reduced connectivity of populations and sub-populations

Major Needs and Concerns

The decline of the Alton population is a concern for the LWG, especially when considering the new coal mine in the area. The number of males attending the Sink Valley lek has declined from 12 to 2 in 5 years. Mitigation via habitat improvement projects and establishing corridors to other areas has been initiated but needs to be consistently applied. The group is supporting region-wide habitat improvement projects that require state funds and interagency collaboration. Furthermore, the LWG has proposed conducting a genetic analysis of the region's grouse population to determine the extent of movement to identify and prioritize the areas in greatest need of habitat improvements and corridors to maintain a healthy grouse population.

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

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

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

Conservation Strategies and Actions

The following updates reflect the individual or joint efforts of MSARM partners from 2010-2011 to address sage-grouse conservation threats identified by the USFWS (2010).

1. Strategy: Through 2016, prevent establishment of cheat grass and other non-native vegetation species in sage-grouse habitats.

1.1. Action: Seed treated areas, where appropriate, with ecologically suitable seed mixes

1.2. Action: Avoid using fire in sage-grouse habitats prone to invasion by cheatgrass or other invasive weed species.

1.3. Action: Evaluate all wildfires and prescribed burns and reseed with ecologically suitable seed, where appropriate, to prevent establishment of cheat grass and other invasive weed species.

The MSARM group has expanded discussions about weed management for sage-grouse, including discussions with a Morgan County commissioner regarding weed management's importance for sage-grouse. In addition, concerns over bulbous bluegrass conversions in sagebrush habitats generated some general project ideas that will hopefully result in WRI project proposals next year. UDWR continues to treat weeds on the two local Wildlife Management Areas (Henefer Echo and East Canyon) as needed. NRCS does many weed control projects with local landowners, although none were targeted specifically at sage-grouse habitat.



Figure 5. The Morgan-Summit Adaptive Resource Management (MSARM) Sage-grouse Local Working Group Conservation Area consists of 1,608,659 acres located in northern Utah.

2. Strategy: By 2016, increase grass/forb understory in sagebrush stands.

2.1 Action: Use sagebrush thinning techniques (Lawson aerator, spike, etc) in a mosaic pattern, where possible, to thin sagebrush stands.

2.2 Action: Seed, when possible, treated areas with ecologically suitable seeds.

2.3 Action: Reclaim and/or reseed areas disturbed by treatments when necessary, using seed mixtures with appropriate grasses and desirable forbs

2.4 Action: Restore understory vegetation in areas lacking desirable quality and quantity of herbaceous vegetation where economically feasible.

2.5 Action: Conduct vegetation treatments to improve forb diversity (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed area, if needed

2.6 Action: Develop management techniques to increase forb diversity and density in sagebrush steppe, within limits of ecological sites and annual variations

2.7 Action: Work with public and private partners to implement rest-rotation grazing systems, where possible

NRCS works with private landowners to incorporate more sage-grouse friendly seed mixes into projects otherwise done for livestock in the area.

3. Strategy: By 2016, all new water projects will take into account MSARM recommendations to prevent conditions for extraordinary mosquito populations and potential persistence and spread of West Nile Virus in the Resource Area.

3.1. Action: Identify key elements of various water projects that are needed to prevent existence of standing water and minimize mosquito populations.

3.2. Action: Develop partnerships with key water management agencies to work cooperatively to both maintain necessary flow regime and prevent conditions for extraordinary mosquito populations

3.3. Action: Cooperate with Summit County Mosquito Abatement District.

3.4. Action: Assess any new water projects for contributions toward conditions that may enhance mosquito populations

WNV is not thought to be a concern in the area, in part because the majority of sage-grouse habitat in the MSARM area is higher elevation than WNV mosquitoes are likely to occur. Communication with mosquito districts and water managers will become a higher priority if West Nile becomes a concern at lower elevations. To date, the sage-grouse group has not focused on water projects mosquito concerns.

4. Strategy: By 2016, search additional areas (TBD) for new active lek sites.

4.1. Action: Coordinate with UDWR to conduct aerial surveys in areas suspected to contain undiscovered active leks.

4.2. Action: Coordinate with public and private partners to conduct terrestrial lek searches in areas suspected to contain undiscovered active leks

4.3. Action: Coordinate with public and private partners to conduct count surveys of known active leks.

4.4. Action: UDWR to enlist and coordinate private volunteers and/or other agency biologists search for new leks and conduct lek counts on active leks.

4.5. Action: Through 2016, test dead sage-grouse for West Nile Virus and any other parasites/pathogens of importance

UDWR biologists located strutting birds on private land near East Canyon Reservoir, but have yet to determine whether these are in fact new leks. Biologists and others remain alert to the possibility of finding new leks when conducting other activities in the area during lekking season.

5. Strategy: By 2016 decrease populations of sage-grouse predators, especially in areas used by sage-grouse for nesting and brood-rearing.

5.1. Action: Support efforts of USDA-WS to remove red foxes, coyotes, and ravens in areas used by sage-grouse for nesting and brood-rearing during spring and early summer

5.2. Action: Develop educational materials and distribute to recreationists that provide information on the impact to non-native predator species from littering

No sage-grouse specific predator control is done by WS in the area. The impact of predators on sage-grouse in the area is unknown because population studies of nest success and mortalities have not occurred. Local agricultural producers do local coyote control. No public education efforts have taken place on this topic.

6. Strategy: Monitor impacts of lek viewing opportunities on lek behavior and lek attendance.

6.1. Action: Provide educational material (brochures, presentations, etc.) to interested birding groups about the ecology of sage-grouse and threats they face in the Resource Area.

6.2. Action: Increase law enforcement patrols in and around crucial lek sites

6.3. Action: Through 2016, include information about MSARM activities in County Extension newsletter

UDWR biologists and USUEXT have worked with UDOT to obtain approval for signs to put on either side of the Henefer Divide lek, informing motorists to slow down for wildlife on the road ahead. The signs will be permanent folding signs, and only need to be ordered and installed. They should be in the ground before spring of 2012. This has the potential to reduce unintentional road mortalities during the lekking season. In addition, flyers were circulated locally in Henefer and other surrounding communities to inform local drivers of the importance of slowing down when cresting the hill on Hwy 65 near the lek. Presentations were given to both Summit County Council and the Eastern Summit County Planning Commission. The presentations were broad in scope but touched on the issue of road mortalities. The newsletter and the website for the Community-Based Conservation Program highlighted these activities. The group toured the lek to observe the birds strutting this spring on the Henefer Divide lek, and concluded that additional signage or public education on lek-viewing etiquette would be of considerable value to reducing stress and danger to the birds at this visible, accessible lek.

7. Strategy: By 2016, increase funding opportunities for private partners interested in improving sage-grouse habitat on private land.

- 7.1. Action:** Participate in SCD and UPCD northern region team; share Plan Strategies with these groups and encourage funding of Plan Strategies
- 7.2. Action:** Increase information dissemination about funding opportunities to private partners
- 7.3. Action:** Develop educational material about habitat improvement techniques appropriate for sage-grouse habitat improvement and distribute to private partners
- 7.4. Action:** Coordinate habitat projects on private land that meet the needs outlined in Plan and the needs of private partners.

The NRCS SGI provides EQIP and WHIP funds through regular NRCS channels (EQIP and WHIP) for sage-grouse habitat improvements for the second year. Two rounds of funding signups occurred in the spring of 2011. Through NRCS, range conservationists and landowners have been better educated about sage-grouse issues. NRCS statewide focused on outreach efforts, and local NRCS/UDWR biologists have worked together to increase interest in sage-grouse habitat management projects by private landowners in the area.

8. Strategy: By 2016 increase amount breeding habitat in “good” condition.

- 8.1. Action:** Work with public and private partners to implement rest-rotation/time controlled grazing management strategies, where appropriate
- 8.2. Action:** Work with NRCS and private partners to implement Farm Bill programs beneficial to sage-grouse
- 8.3. Action:** Coordinate with county weed board to implement noxious weed program to reduce impacts on sage-grouse
- 8.4. Action:** Work with NRCS and private partners to monitor effects of treatments on sage-grouse populations and habitat

No SGI projects were planned or completed in the past year, and none are currently under contract. The local NRCS office has focused on ensuring that livestock-focused projects which do not qualify for SGI funds (because landowners may be unwilling to commit to required grazing management plans that prioritize sage-grouse over livestock needs) are conducted in such a way as to either benefit or at least minimize impact to sage-grouse populations, such as encouraging mosaics and increasing the diversity of forbs in reseeding mixtures. For example, on one brush management project in Echo Canyon, a private landowner did sagebrush treatments for livestock, but NRCS worked with them to get WRI funding to reseed.

9. Strategy: Coordinate fire management practices with public and private partners to prevent loss of crucial sage-grouse habitat and enhance/improve sage-grouse habitat, where appropriate.

- 9.1. Action:** Comment on BLM/USFS fire plans
- 9.2. Action:** Re-seed sites, post-burn, with ecologically suitable seed mixture to prevent the establishment of cheat-grass
- 9.3. Action:** Use fire management to reduce sagebrush canopy cover and create diverse sagebrush stands in brood-rearing and summer use areas

Wildfires could be a significant concern for sage-grouse depending on the location and the degree to which annual grasses (bulbous bluegrass more than cheatgrass at higher

elevations) have taken over the site, so LWG members are cautious about using it to improve sage-grouse habitat. Until more is known about sage-grouse populations, habitat manipulation by fire is unlikely to be a significant tool for sage-grouse habitat improvement. No known fire projects were conducted during the reporting period. The group will work in the future to make fire managers aware of concerns with fire and sage-grouse.

10. Strategy: Improve lek vegetation conditions to allow for predator recognition and visibility.

10.1. Action: Open lek areas that have been invaded by sagebrush and other shrubs

10.2. Action: Map and inventory leks with potential for restoration

10.3. Action: Maintain and enhance desired habitat conditions for leks

No lek improvement projects were done in 2010 or the first half of 2011, due in part to the complexity of private landownership issues near known leks. One lek is currently being evaluated for potential improvements.

11. Strategy: Improve mesic and riparian areas for sage-grouse and watershed health.

11.1. Action: Identify opportunities or needs to create small wet areas, implement such projects where economically feasible

11.2. Action: Design and implement livestock grazing management practices to benefit riparian areas

11.3. Action: Modify or adapt pipelines or developed springs to create small wet areas

11.4. Action: Locate projects to minimize potential loss of water table associated with wet meadow

11.5. Action: Protect existing wet meadows and riparian areas where necessary

11.6. Action: Manage vegetation and artificial structures to increase water-holding capability of areas.

Two projects on the Henefer-Echo Wildlife management area were funded through WRI: water and fencing projects to improve grazing in several areas, but a project, primarily for mule deer, that may have sage-grouse benefits as well, is an extensive riparian restoration project including spraying, re-seeding, and fencing the riparian area.

12. Strategy: Minimize the amount of quality sage-grouse habitat eliminated by residential and commercial land development consistent with private property rights.

12.1. Action: Participate with County land use decision makers in identifying key sage-grouse habitats

12.2. Action: Maintain sagebrush environments of sufficient size and shape around developments in sage-grouse habitat.

12.3. Action: Encourage the voluntary use of conservation easements and other land protection vehicles with willing sellers in sage-grouse habitats

12.4. Action: Educate rural residents about the importance of good grazing management in keeping small tracts weed free and capable of providing wildlife habitat

Currently, many easements and other land protection mechanisms (including Cooperative Wildlife Management Units [CWMUs], agricultural, and other easements held by Utah Open Lands, Summit Land Conservancy, and FFSL) exist in the area, but a comprehensive

understanding of the relationship between them and how they may help sage-grouse is lacking. MSARM is working with Summit County employees to develop a more comprehensive understanding of protected areas in sage-grouse range, which will include a comprehensive map of protected areas and sage-grouse habitat. Summit County hopes that this information will help guide future land preservation strategies. No specific education efforts have been undertaken. MSARM is working to develop relationships with easement holding entities, and will bring critical properties for sage-grouse to their attention as those areas are identified. Presentations were given to the Summit County Planning Commission and the Summit County Council about sage-grouse issues in the area, including the development concerns. Morgan County Council has become engaged in the sage-grouse issue, and received an information flyer outlining basic sage-grouse ecology and relevant local threats. Efforts have been made to ensure that Summit and Morgan county employees (particularly in planning) are aware of the updated shape files of sage-grouse habitat and other opportunities to incorporate wildlife concerns into development planning. In addition, Summit County employees involved in the working group are working on ways to incorporate wildlife sensitivity concerns into planning code.

13. Strategy: Encourage monitoring programs that are consistent with NRCS practices and Connelly et al. (2003).

13.1. Action: Coordinate with MSARM partners to facilitate data collection

13.2. Action: Schedule and/or advertise educational opportunities, disseminate printed materials

13.3. Action: Coordinate with academic institutions to utilize students in monitoring efforts

13.4. Action: Hold annual field tours of habitat improvement projects

A research study to better understand the area's sage-grouse populations has been designed and partially funded by Kern River Pipeline. As soon as matching funds are found, the study will be conducted. A field tour took place in the summer of 2010. The group visited several sage-grouse habitat and lek sites. An additional tour occurred during lekking season, and members of MSARM were able to view sage-grouse at the Henefer-Divide lek prior to a spring meeting.

14. Strategy: Improve efforts to increase size of sage-grouse population in the Resource Area.

14.1. Action: Explore possibility of initiating translocations of hen sage-grouse from other areas within Utah with stable or increasing populations

14.2. Action: Continue existing predator management activities as called for by UDWR, USDA-WS, and other participating agencies and organizations

No translocations or sage-grouse related predator control has occurred in the area.

15. Strategy: Provide for a level and system of domestic livestock grazing that maintains and improves both the long-term stability of sage-grouse populations and habitats and the livestock industry in the Resource Area.

15.1. Action: Coordinate grazing management with livestock operators to reduce resource and timing conflicts on leks and prime nesting habitat when possible

15.2. Action: Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site

15.3. Action: Encourage implementation of grazing systems that provide for areas and times of deferment while taking into consideration the resource capabilities and needs of the livestock operator

In many cases in the resource area, livestock grazing is perceived as one of the most compatible land uses (particularly compared to development scenarios for the land) with sage-grouse habitat. Normal grazing is not considered a substantial threat to sage-grouse, although NRCS works to ensure that projects – such as sagebrush treatments by private landowners for livestock forage – are done in such a way as to reduce or eliminate possible negative impacts to sage-grouse habitat. In addition, projects on the Henefer Echo WMA (mentioned previously) have been designed to decrease livestock impact on sagebrush and riparian habitats that might be used by sage-grouse.

Major Needs and Concerns

The Morgan-Summit group continues to have two primary challenges: a lack of specific knowledge of area populations sufficient to recommend habitat improvement projects, and a large amount of private land. In addition, the overlapping boundaries of two UDWR and UDOT regions in the area make coordination slightly more complex. The last two years have seen many advances in relationship building, and careful discussion and planning to ensure that efforts undertaken by the group truly benefit sage-grouse, starting with the development of key research project design, which has only to be fully funded to form the basis for future work in the area.

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

The Parker Mountain Adaptive Resource Management Plan (PARM) Sage-grouse Local Working Group was organized in 1997. PARM is facilitated by Mr. Todd Black. The PARM consists of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals. At that time the group met quarterly to discuss the status of sage-grouse on Parker Mountain. The first decision the group made was to radio-collar hens to determine nesting ecology, habitat use, and reproduction. After a two year study, the group learned that nesting and brood success was low and this was probably related to poor nesting and brooding rearing cover. The PARM obtained a NRCS Wildlife Habitat Incentive Program cost-share challenge grant. PARM used these funds to implement and evaluate two mechanical methods and one chemical method to reduce sagebrush canopy cover as a means of increasing grass and forb cover. The success of these management experiments set the stage for PARM to design and implement other conservation actions. After 13 years of research, USU and PARM have scaled back the research effort. The research has resulted in major contributions to the management of sage-grouse in the area. This research was made possible because of financial and in-kind contribution. A cooperative agreement with the USFS provided housing at the refurbished Teasdale Ranger Station for graduate students and technicians for several years. A history of PARM actions, annual reports, meeting minutes, and their conservation plan can be found on-line at <http://utahcbcp.org/files/uploads/parm/PARMfnl-10-06-web.pdf>



Figure 6. The Parker Mountain Adaptive Resource Management (PARM) Sage-grouse Local Working Group Conservation Area consists of 1,789,644 acres located in south-central Utah.

Conservation Strategies and Actions: 2010-2011 Accomplishments

1. Strategy: By 2011, assess PJ stands in the Fish Lake subunit.

1.1. Action: As a PARM group revisit and make recommendations to treat as needed on PJ sites (North Mytoge Mountain and North of the Fish Lake turn off).

In 2010 SITLA engaged volunteers to thin PJ in the Sand Ledges area. USFS conducted PJ removal using lop scatter pile and burn on in the Horse Valley/Cedar Creek area. BLM did (1500 acres) PJ bullhog removal south of Greenwich, west side of Highway 62.

BLM has previously Dixie harrowed multiple areas north of the fish lake turn and south west and north of Hwy 24 off to remove encroaching PJ to improve connectivity of habitat to other sites on the north end of the resource area.

2. Strategy: By 2011, make an assessment of non-desirable/invasive vegetation in sage-grouse habitats.

2.1. Action: Review and monitor all vegetation sampling by all partners, and more specifically with UDWR range trend data.

See UDWR range trend data—making sure cheatgrass is not moving up the mountain and into areas occupied by sage-grouse. For more information see <http://wildlife.utah.gov/range/pdf/Archive%20Reports/2008%20Vol%201%20Southern%20Region.pdf>

2.2. Action: Avoid using fire in sage-grouse habitats prone to invasion by cheatgrass or other non-desirable species.

No fires were used in areas prone to cheatgrass invasion.

2.3. Action: Evaluate all wildfires and prescribed burns and reseed with forage kochia or other fire-resistant species where appropriate to prevent establishment of cheatgrass.

No wildfires in 2010/11

2.4. Action: Identify areas where undesirable vegetation is encroaching on sage-grouse habitat.

Halogeton encroachment has been reported around the Moroni Peak area. USFS is reporting more cheatgrass along road side along the Pine Creek area and is monitoring its status.

2.5. Action: Treat areas where undesirable vegetation has become, or is at risk of becoming, a factor in sage-grouse habitat loss or fragmentation.

Wayne County sprays halogeton just west of Loa up to the land fill in sage-grouse wintering areas.

2.6. Action: Work with existing weed management programs to control noxious weeds in the Resource Area.

See above 2.4/2.5.

2.7. Action: Identify large areas of introduced plant species that are not meeting sage-grouse habitat needs and reseed with native species where appropriate.

PARM identified the Terza flat areas a possible sites but none of the seeds germinated likely to drought and existing soil conditions.

2.8. Action: Identify areas where pinyon or juniper trees are encroaching on good quality sagebrush habitat and treat as needed.

See above. Cedar Grove PJ sites are starting to expand and PARM has concerns with this.

Work with SITLA to address issue. BLM continue working south grass valley on the east side of Highway 62 (angle area).

2.9. Action: Manage fire, transportation, and vegetation treatments to minimize undesirable vegetation where possible.

Both Dixie and Fishlake National Forest Service Districts are working on travel plans to address transportation issues and are anticipated to be completed in 2012.

3. Strategy: By 2011, complete an assessment on the condition of available water sources and identify potential new water improvement/development projects.

No action taken on this action item to date.

3.1. Action: Manage vegetation and artificial structures to increase water-holding capabilities of likely habitat.

SITLA and Parker Grazing Association are working for new pond between Jakes Knoll and Flossy Lake. USFS re-fenced areas around 3 ponds (Antelope Springs, Big Lake, and Dark Valley Pond).

3.2. Action: Install catchment structures to slow run-off, hold water, and eventually raise water tables.

No action take in 2010 see above for 2011 plans. BLM and Seven Mile Grazing Association re-bentonite/seal ponds in the Mytoge Allotment.

3.3. Action: Modify or adapt pipelines or developed springs to create small wet areas. *Antelope Springs, Big Springs, and Dark Valley Pond see above.*

3.4. Action: Locate projects to minimize potential loss of water table associated with wet meadows.

No projects were conducted in areas where this was a concern.

3.5. Action: Identify key elements of various water projects by developing partners to work cooperatively to maintain existing water sources.

See above...3.2.

4. Strategy: By 2011, identify key public, SITLA, and private lands in the Resource Area (specific locations to be selected) that are managed so as to conserve/improve sage-grouse nesting habitat.

4.1. Action: Encourage use of PARM defined conditions for state and federal lands to influence management actions to move toward improved conditions for sage-grouse.

Accomplished through PARM LWG meetings and WRI. USU is compiling data to develop nesting, brood-rearing habitat, and winter habitat models. This research should be completed in 2012.

4.2. Action: Support partner efforts that manage sage-grouse nesting habitat on public, SITLA, and private lands.

See above USU is compiling data to show nesting, brood-rearing habitat, and winter habitat models. The winter and brood-rearing models are projected to be complete in 2012.

4.3. Action: Use available grouse and brood telemetry data to identify key nesting habitat areas within the Parker Mountain subunit.

Work continues by SITLA, USFS, USU, and UDWR through 2010. See above. USU is compiling data to show nesting, brood-rearing habitat, and winter habitat models. Winter and brood-rearing habitat models will be completed in 2012.

4.4. Action: Pursue habitat improvement projects (to meet PARM defined conditions) on SITLA lands in areas used by sage-grouse for nesting habitat.

PARM group discussed the possibility of removing this action item as it is likely that nesting habitat is not limited and no habitat projects are recommended at this time.

4.5. Action: Identify research needs to address sagebrush treatments at 'lower' elevations where the majority of these nesting activities occur.

See above—we need research—Terza Flats treatments and seeding trials. Research is showing that we don't need 'treatments' at lower elevations.

4.6. Action: Use mechanical or chemical treatments to reclaim and/or reseed areas (when necessary) using suitable seed mixtures.

No chemical treatments were conducted in 2010. SITLA plans small treatments in the fall of 2011. The BLM is discussing chemical treatments and NEPA.

4.7. Action: Where economically feasible, restore understory vegetation in areas lacking desirable quality and quantity of herbaceous vegetation.

USFS did more control burns, to improve understory in the Pollywog and Blue Springs area.

4.8. Action: Conduct vegetation treatments to improve forb diversity (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed area, if needed.

See above—The USFS conducted brush mowing treatments in these areas as well.

4.9. Action: Develop management techniques to increase forb diversity and density in sagebrush steppe, within limits of ecological sites and annual variations.

See above (mowing, burning, chemical, Dixie harrow).

5. Strategy: By 2011, identify key public, SITLA, and private lands in the Resource Area (specific locations to be selected) that are managed so as to conserve/improve sage-grouse lekking habitat.

This task is complete but further monitoring efforts will continue by PARM members.

5.1. Action: Open lek areas that have been invaded by sagebrush and other shrubs.

BLM and Parker Mountain Grazing Association treated historic leks using sheep in the Black Point area to reduce the sagebrush canopy cover.

5.2. Action: Encourage use of PARM defined conditions for state and federal lands to influence management actions to move toward improved conditions for sage-grouse.

This is an ongoing process with PARM members and will continue through the duration of the plan.

5.3. Action: Support partner efforts that manage sage-grouse lekking habitat on key public, SITLA, and private lands

Sheep grazing Black Point lek (see above) Department of Agriculture and Food. A video describing the project was placed on youtube.com as

<http://www.youtube.com/watch?v=GX4027DbePk>

6. Strategy: Through 2011, avoid natural resource development (oil/gas exploration and development) within important sage-grouse use areas. If development does occur, work with private industry to minimize impacts and follow recommended actions below.

The PARM group had discussion on this strategy and felt that over the past several years doesn't really think this is a big threat as they initially discussed and thought. Oil/gas exploration has fallen through. The USFS is working on NEPA for future oil/gas on USFS lands protecting lekking areas.

6.1. Action: Reduce fragmentation of sage-grouse habitat by oil and gas development activities.

Not an issue of concern.

6.2. Action: Locate compressor stations off ridge tops and at least 2,500 feet from active sage-grouse leks, unless topography allows for closer placement.

Not an issue of concern.

6.3. Action: Avoid locating facilities within ¼ mile of active sage-grouse leks, unless topography allows for closer placement.

See above with USFS NEPA but not a current issue/threat.

6.4. Action: Plan for and evaluate impacts to sage-grouse of entire field development rather than individual wells.

See above with USFS NEPA but not a current issue/threat.

6.5. Action: Implement near-site and/or off-site mitigation as necessary to maintain sage-grouse populations.

See above with USFS NEPA but not a current issue/threat.

6.6. Action: Share sage-grouse data with industry to allow planning to reduce impacts.

See above with USFS NEPA but not a current issue/threat.

6.7. Action: Minimize disturbance to sage-grouse associated with oil and gas development.

See above with USFS NEPA but not a current issue/threat.

6.8. Action: Reduce cumulative impacts of oil and gas development.

See above with USFS NEPA but not a current issue/threat.

6.9. Action: Plan and construct roads to minimize duplication.

See above with USFS NEPA but not a current issue/threat.

6.10. Action: Cluster development of roads, pipelines, electric lines and other facilities.

See above with USFS NEPA but not a current issue/threat.

6.11. Action: Use existing, combined corridors where possible.

See above with USFS NEPA but not a current issue/threat.

6.12. Action: Use early and effective reclamation techniques, including interim reclamation, to speed return of disturbed areas to use by sage-grouse.

See above with USFS NEPA but not a current issue/threat.

6.13. Action: Avoid construction during the breeding/nesting season (March 1 – June 30) when possible in sage-grouse habitat.

See above with USFS NEPA but not a current issue/threat.

6.14. Action: Limit activities during breeding season (March 1 – May 1) near sage-grouse leks to portions of the day after 9:00 a.m. and before 4:00 p.m.

See above with USFS NEPA but not a current issue/threat.

6.15. Action: Reduce daily visits to well pads and road travel to the extent possible in sage-grouse habitat.

See above with USFS NEPA but not a current issue/threat.

6.16. Action: Reduce long-term footprint of facilities to the smallest possible.

See above with USFS NEPA but not a current issue/threat.

6.17. Action: Avoid persistent, nonnative grasses (e.g. intermediate wheatgrass, pubescent wheatgrass, crested wheatgrass, smooth brome, etc) in reclamation seed mixes.

See above with USFS NEPA but not a current issue/threat.

6.18. Action: Eliminate noxious weed infestations associated with oil and gas development disturbances.

See above with USFS NEPA but not a current issue/threat.

6.19. Action: Minimize width of field surface roads.

See above with USFS NEPA but not a current issue/threat.

6.20. Action: Participate in county planning efforts for natural resource exploration and development to ensure that biodiversity impacts are minimized.

See above with USFS NEPA but not a current issue/threat.

6.21. Action: Cooperate with partners (NRCS, UDWR, USFS, BLM, SITLA) planning efforts to minimize impacts on sage-grouse brood rearing habitat.

See above with USFS NEPA but not a current issue/threat.

7. Strategy: Through 2011, identify high use areas available to sage-grouse during the late summer and early fall brood rearing time period.

7.1. Action: Use available grouse and brood telemetry data and remote sensing data to identify key brood rearing habitat areas within the Parker Mountain subunit.

USU is compiling data to show nesting, brood-rearing habitat, and winter habitat models, work to be completed in 2012.

7.2. Action: Work with public and private partners to maintain areas use by sage-grouse during late summer and early fall.

USU is compiling data to show nesting, brood-rearing habitat, and winter habitat models, work to be completed in 2012.

8. Strategy: Through 2016, identify measures to manage key wintering areas available for sage-grouse.

8.1. Action: Use available winter grouse telemetry data and local knowledge to map these areas.

USU is compiling data to show nesting, brood-rearing habitat, and winter habitat models, work to be completed in 2012.

8.2. Action: Work with public and private partners to identify winter locations.

USU is compiling data to show nesting, brood-rearing habitat, and winter habitat models, work to be completed in 2012.

8.3. Action: Use UDWR aerial winter big game surveys to identify and map these areas.

Completed annually and noted by UDWR personnel

9. Strategy: By 2009, maintain or increase populations of sage-grouse in the Resource Area. *Since peaking in 2007, the PARM sage-grouse population based on lek counts has been trending downwards as has been most of the state. These trends have been attributed to unfavorable weather patterns to include drought in combination with severe winter weather. However USU's research and models shows that while decreasing numbers are reported from lek counts, the population is starting to trend upwards again.*

9.1. Action: Support and encourage the prevention of illegal harvest of sage-grouse on public lands throughout the year.

PARM group supports this action and works with the UDWR to report any illegal harvest.

9.2. Action: Support continued sport hunting within current UDWR models.

PARM would like to see additional research on this. We recommend looking at production data (late season brood counts) rather than lek counts to determine harvest rates/numbers. PARM group supports this action and works with the UDWR to support harvest based models. A recently completed research project by USU suggests the hunting may be having a disproportionate effect on juvenile survival.

9.3. Action: PARM group will review and determine support of any translocation of sage-grouse hens from the resource area based on population status.

This is an ongoing action item and PARM supports and recognizes the importance of translocation of grouse across the state to areas where population augmentation is needed. The last translocation from the Parker population occurred in 2009, when 30 hens were relocated to Anthro Mountain.

9.4. Action: Continue with annual PARM group counting/classification efforts with sage-grouse lek surveys.

This is an ongoing action item and PARM continues to hold annual group lek counts where the public is invited to attend.

10. Strategy: Through 2009, search additional areas (TBD by PARM) for new/previously undiscovered sage-grouse lekking sites.

Completed, this has been done every year and will likely continue in specific areas as determined by the PARM group.

10.1. Action: Coordinate with UDWR to conduct aerial surveys in areas (Bear Valley, north of Koosharem Reservoir, north/Mytoge Mountain, Greenwich) suspected to be undiscovered lekking areas.

Completed, this has been done every year and will likely continue in specific areas as determined by the PARM group.

10.2. Action: Coordinate with UDWR, public and private partners to conduct terrestrial like searches in areas (Bear Valley, north of Koosharem Reservoir, north/Mytoge Mountain, Greenwich) suspected to be undiscovered lekking areas.

Completed, this has been done every year and will likely continue in specific areas as determined by the PARM group.

10.3. Action: Continue with and expand annual PARM group counting/classification efforts to include the entire Resource Area.

Done annually in cooperation and in conjunction with the PARM annual counts and the UDWR.

11. Strategy: Increase cooperation and coordination between PARM members and other public and private partners.

11.1. Action: Continue with quarterly PARM meetings.

Completed, this has been done every year and will continue through the duration of the plan see <http://www.utahcbcp.org/htm/groups/parkermountain>.

11.2. Action: Annual review and assessment of PARM plan.

Completed, this has been done every year and will continue through the duration of the plan.

11.3. Action: Review and amend the MOU

Completed, this has been done every year and will continue through the duration of the plan.

11.4. Action: Develop means to inform, involve, and educate the local communities as to the efforts of PARM to protect sage-grouse.

Ongoing with the CBCP Communicator newsletter and web page. See for more information <http://utahcbcp.org/>.

12. Strategy: By 2016, work to decrease the populations of sage-grouse predators, especially in areas used for nesting and/or brood-rearing.

PARM group receives updates and reports annually from WS on activities done within the resource area specifically for sage-grouse.

12.1. Action: Modify power lines and wood fence posts (to remove raptor perches) in important sage-grouse areas, where feasible and where predator concerns have been identified.

N/A

12.2. Action: Remove trees, remove/modify raptor perches, and maintain quality sagebrush habitat, where predation concerns on sage-grouse have been identified.

N/A

12.3. Action: Begin site-specific predation management considering all predator species (especially common ravens and red fox) where necessary and appropriate.

PARM group has identified areas to focus these efforts using WS and continues to identify additional areas of concern.

12.4. Action: Support efforts of USDA-WS to remove red foxes and ravens in areas used by sage-grouse for nesting and brood-rearing during spring and early summer.

At the time of this report, current 2011 efforts were unavailable.

12.5. Action: Identify research needs to look at wildlife herbivory issues and treatment sites and the removal of predators.

Still something PARM discusses and needs to be done.

12.6. Action: Identify additional sources of funding to continue with the current predator removal efforts.

Has been discussed with WS and UDWR. PARM group has identified areas to focus these efforts using WS and continues to identify additional areas of concern.

13. Strategy: Provide an appropriate level and system for domestic livestock grazing that maintains and improves both the long-term stability of sage-grouse populations and habitats and the livestock industry in the Resource Area.

13.1. Action: Coordinate grazing management with livestock operators to reduce resource and timing conflicts on leks and prime nesting habitat when possible.

Research has shown that there are few livestock conflicts within the PARM area. This is largely attributed to the elevational grazing regime. By the time livestock move into nesting and early brooding-rearing areas hen with broods have relocated to higher elevations.

PARM also uses livestock currently to remove cover from lekking areas. PARM continues to work with partners to improve grazing conditions that are beneficial to sage-grouse by working to address water distribution and fencing improvements to control livestock movements in nesting habitat and plans to improve grazing rotation on the SITLA block.

13.2. Action: Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site.

Due to geologic conditions, annual precipitation, and soil conditions, PARM will likely never achieve 'guidelines' from a herbaceous/grass cover standpoint for nesting habitat.

However, research has show that the Parker population is increasing ($\lambda > 1$), high chick survival, and winter adult survival despite vegetative conditions. PARM uses livestock currently to remove cover from lekking areas. PARM continues to work with partners to improve grazing conditions that are beneficial to sage-grouse by working to address water distribution fencing improvements to control livestock movements in nesting habitat and plans to improve grazing rotation on the SITLA block.

13.3. Action: Encourage implementation of grazing systems that provide for areas and times of deferment while taking into consideration the resource capabilities and needs of the livestock operator.

PARM continues to work with partners to improve grazing conditions that are beneficial to sage-grouse by working to address water distribution and fencing improvements to control livestock movements in nesting habitat and plans to improve grazing rotation on the SITLA block.

14. Strategy: Minimize impacts of utilities lines in sage-grouse habitat.

The PARM group had discussion on this strategy and felt that over the past several years this is not as big a threat as they initially discussed and thought. Oil/gas development has not been as big as a threat as predicted at the beginning of the plan, it's unlikely that any significant utility development will occur.

14.1. Action: Avoid new construction during important periods and reroute lines where technically and economically feasible to avoid impacts.

N/A

14.2. Action: Schedule maintenance to minimize impacts during biologically important time-periods (i.e. breeding), however, maintenance in emergency situations will be unrestricted.

N/A

14.3. Action: Install raptor deterrents when applicable.

N/A

15. Strategy: Improve knowledge of disease in sage-grouse populations.

15.1. Action: Collect grouse parasite and disease organism samples while handling birds for other research.

No birds found dead due to disease in 2010/11.

15.2. Action: Monitor radio-collared and other sage-grouse for West Nile Virus and other disease outbreaks.

No birds found dead due to disease in 2010/11.

16. Strategy: By 2016 work to begin to improve understanding of the relationship between livestock grazing and sage-grouse in the Resource Area.

16.1. Action: Conduct study on the affects of different types of livestock use, time of use, and intensity of use on sage-grouse populations.

Completed and published by USU see

<http://utahcbcp.org/files/uploads/parm/ElmoreDissertation.pdf> for more information.

17. Strategy: By 2016 implement a study to better understand of the predator/prey dynamics specific to sage-grouse in the Resource Area.

17.1. Action: Conduct study of the effects of predation on sage-grouse populations.

Still a needed research project but with funding cuts it's likely not to happen during the duration of this plan.

Major Needs and Concerns

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

Rich County Coordinated Resource Management Sage-grouse Local Working Group

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

In 2010/11, the group met formally three times to discuss strategies and actions and receive research updates. Additionally, one field tour was held to view and discuss research efforts and implement actions and strategies.

This information below summarizes efforts made by individual and partners to address threats and strategic actions for the Rich County Greater Sage-grouse Local Conservation Plan and by the USFWS (2010). This adaptive plan is in effect until the year 2016. RICHCO partners not only reported on specific actions completed or addressed in 2009-2010 but also identified steps to be taken to implement additional actions into subsequent years of the plan. In 2011, RICHCO and USU received funding through the NRCS SGI to begin a multiple year evaluation of the relationship between rotational and season-long livestock grazing and sage-grouse vital rates and habitat-use patterns. This will involve comparing sage-grouse vital rates and habitat-use on Desert Land and Livestock (DLL, rotational grazing) to the BLM Three Creeks Allotment (seasonlong grazing). The Three Creeks Allotment Project is discussed in detail below. For the complete list of threats identified by the RICHCO group, see page 64 of the conservation plan located on line at http://utahcbcp.org/files/uploads/rich/RICOSAGRPlan_Draft1.pdf



Figure 7. The Rich County Coordinated Resource Management (RICHCO) Sage-grouse Local Working Group Conservation Area consists of 661,760 acres located in north-eastern Utah.

Conservation Strategies and Actions

1. Strategy: By 2016 increase amount of breeding habitat in “good” condition in the northern two-thirds of the County.

1.1. Action: Work with public and private partners to implement rest-rotation/time controlled grazing management strategies, where appropriate.

Three Creeks Allotment consolidation (146,000 acres) work continues to work towards this action. This allotment will convert from 27 individual allotments managed under seasonlong grazing to a single rotational grazing operation to mimic the management in place on Desert Land and Livestock. Scoping and NEPA process will continue over the next 2 years, hopefully to be implemented in 2014. All piping and water work was completed in

efforts towards this project. Work continues in the North Rich Allotment to put two cross fences in large pasture to implement a rest-rotation grazing system. One fence was built in 2009, and the other will be put in summer 2011. The Birch Creek fencing project one built one temporary electric to implement rest-rotation in an 8000 acre pasture of private ground.

1.2. Action: Implement appropriate treatments and seeding in CRP fields and stands dominated by crested wheatgrass.

Approximately 400 acres came out of AGG production and went into CRP with wildlife friendly seed mix.

1.3. Action: Work with NRCS and private partners to implement Farm Bill programs beneficial to sage-grouse.

SGI was introduced in 2010, NRCS partners are working with three different landowners who have signed up and will be implementing projects in subsequent years (2012).

1.4. Action: Work with public and private partners to research/monitor effects of treatments on sage-grouse populations and habitat.

Open Range Consulting is working with DLL and permittees doing some work looking at production and bare ground. Partners have applied for NRCS grants to further research monitoring efforts throughout the county.

Partners: NCRS, BLM, UDWR, CRM, USFS, private partners, USFWS.

Threats Addressed: Vegetation management.

Aspects of Sage-grouse Ecology Addressed: Breeding habitat quality, connectivity of seasonal habitat types.

2. Strategy: Minimize impacts of agricultural conversion on sage-grouse.

2.1. Action: Maintain the CRP program and improve its benefit to wildlife by altering seed mixes to include a greater proportion of ecologically appropriate species.

In 2012, nine CRP renewals and three new sign ups were completed. None of the nine renewals are doing anything to improve or maintain existing cover. Grazing will be done every three years under the new program.

2.2. Action: Maintain or reestablish sagebrush patches of sufficient size and appropriate shape to support sage-grouse between agricultural fields.

Partners are working on the Big Creek area to identify areas that can be treated to design appropriate shape in these areas.

2.3. Action: Work with NRCS and others to maintain the CRP program and enroll important sage-grouse habitats currently in grain production.

Approximately 400 acres came out of agriculture production and went into CRP with wildlife friendly seed mix.

2.4. Action: Encourage use of sage-grouse friendly seed mixes, including bunchgrasses, forbs and sagebrush, in CRP and other grassland plantings.

Partners working with NRCS to develop a good wildlife seed mix to plant in new CRP areas.

2.5. Action: Rehabilitate old low diversity, CRP fields with ecologically appropriate seed mixes including bunchgrasses, forbs, and sagebrush.

No renewals were required to do any maintenance with existing CRP fields.

2.6. Action: Encourage interest and enrollment of key sage-grouse habitats in the Grassland Reserve Program or other relevant Farm Bill programs.

Much focus was put in SGI and several landowners signed up in 2010. The program will continue through 2011.

2.7. Action: Work with NRCS and private partners to identify areas important to sage-grouse that should be given higher priority for CRP.

On going, more areas are being identified as we continue to learn where the grouse are going seasonally and what habitat they are using.

2.8. Action: Work with public and private partners to implement sage-grouse appropriate management of CRP.

The LWG decided to remove in 2011 due to redundancy with other action items.

Partners: NRCS, CRM, private partners, UACD, UFBB.

Threats Addressed: Invasive/noxious weeds, vegetation treatments.

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, connectivity of seasonal habitat types.

3. Strategy: Maintain and/or increase amount of winter habitat in “good” condition in the Southern Subunit through the use of appropriate treatments and/or land management strategies. *Some work was done with the BLM to try and rejuvenate sagebrush with aerator and grazing in the Woodruff Coop WMA/Dog Hollow. Much concern has been expressed with the number of pronghorn. UDWR is working with partners to reduce populations of pronghorn in the southern sub unit and on the Coop.*

3.1. Action: Work with public and private partners to manage livestock grazing to increase quality and condition of sagebrush stands, where appropriate.

Some concerns have been expressed with grazing practices and the condition of the winter range. Discussion has been had with the group to work on some of the critical winter range.

3.2. Action: Work with public and private partners to avoid sagebrush-reducing grazing in areas important for winter use, where feasible.

Some concerns have been expressed with grazing practices and the condition of the winter range. Alternative grazing ideas were discussed on DLL, including electric fencing and herding cattle seasonally.

3.3. Action: Plant sagebrush seedlings into crested wheatgrass stands, where appropriate and feasible.

No work re-seeding of sagebrush seedlings has been implemented. Summer of 2011, Ruby Pipeline corridor will be seeded in some areas to a sagebrush mix.

Partners: UDWR, BLM, private partners, NRCS, SITLA, UACD, USFWS.

Threats Addressed: Livestock grazing, vegetation treatments, fire.

Aspects of Sage-grouse Ecology Addressed: Winter habitat quality, population distribution, connectivity of seasonal habitat types, connectivity of populations and subpopulations.

4. Strategy: Coordinate fire management practices with public and private partners to prevent loss of crucial sage-grouse habitat and enhance/improve sage-grouse habitat, where appropriate.

4.1. Action: Comment on BLM/USFS fire plans.

Fire plans are discussed with the CRM group.

4.2. Action: Re-seed sites, post-burn, with ecologically appropriate seed mixture to prevent the establishment of cheat-grass and other invasive/noxious species.

No reseeding efforts were conducted in conjunction with the few control burns in Bear Lake Plateau, these areas had good understory in higher elevations.

4.3. Action: Use fire management to reduce sagebrush canopy cover and create diverse sagebrush stands in brood-rearing and summer use areas, where appropriate.

A few control burns in Bear Lake Plateau area were completed on private lands, these areas had good understory in higher elevations.

Partners: BLM, USFS, UDWR, SITLA, private partners, NRCS.

Threats Addressed: Fire, invasive/noxious weeds, vegetation management, *PJ* encroachment. *Group decided to remove in 2011 due to the absence of PJ in sage-grouse habitat in Rich County.*

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, connectivity of seasonal habitat types.

5. Strategy: Maintain and where possible, improve grass/forb component in the understory in nesting and brood-rearing areas.

5.1. Action: Reclaim and/or reseed areas disturbed by treatments when necessary, using seed mixtures with appropriate grasses and desirable forbs.

Ruby Pipeline mitigation will start this summer/fall and will be re-seeding grass/forb/sagebrush mix.

5.2. Action: Restore understory vegetation in areas lacking desirable quality and quantity of herbaceous vegetation where economically feasible.

Birch Creek and Three Creeks projects are working towards this issue. Additionally the aerator project and grazing practices on the Woodruff Coop (grazing association) are working towards this goal as well. In addition, Ruby Pipeline mitigation will start this summer/fall and will be re-seeding grass/forb/sagebrush mix.

5.3. Action: Work with public and private partners to implement rest-rotation/time controlled grazing management strategies, where appropriate.

Three Creeks allotment consolidation (146,000 acres) work continues towards this action. Scoping and NEPA process will continue over the next two years, hopefully to be implemented in 2014. All piping and water work was completed in efforts towards this project. Work continues in the North Rich Allotment to put two cross fences in large pasture to implement a rest-rotation grazing system. One fence was built in 2009, and the other will be put in summer 2011. The Birch Creek fencing project one built one temporary electric to implement rest-rotation in an 8000 acre pasture of private ground.

5.4. Action: Conduct vegetation treatments to improve grass/forb diversity (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed area, if needed.

BLM aerated areas in the Woodruff Coop WMA.

5.5. Action: Develop management techniques to increase grass/forb diversity and density in sagebrush steppe, within limits of ecological sites and annual variations.

Three Creeks allotment consolidation (146,000 acres) work continues towards this action. Scoping and NEPA process will continue over the next two years, hopefully to be implemented in 2014. All piping and water work was completed in efforts towards this project.

5.6. Action: Avoid land use practices that reduce soil moisture, increase erosion, cause invasion of exotic plants, and reduce abundance and diversity of forbs.

On going. CRM reviews any land use practices. Ruby Pipeline went through the area in 2010/11 the CRM group will be visiting areas in their field tour in 2011.

5.7. Action: Design spring improvements/developments that are favorable for livestock and sage-grouse that fall in nesting and brood-rearing areas.

Most current springs are designed (troughs are floated so water stays in the troughs—this keeps springs from drying out and keeps the wet meadow areas intact) to keep the green/wet meadow areas while maintaining water in the troughs for the livestock.

Partners: UDWR, CRM, USFS, NRCS, BLM, private partners, USFWS.

Threats Addressed: Vegetation management, livestock grazing, invasive/noxious weeds.

Aspects of Sage-grouse Ecology Addressed: Breeding habitat quality, summer/late broodrearing habitat quality, connectivity of seasonal habitat types, population distribution.

6. Strategy: Increase information dissemination and education opportunities for public and private partners regarding sage-grouse ecology and habitat needs.

6.1. Action: Develop educational materials (brochures, presentations, etc.) about sage-grouse ecology, habitat needs, and habitat management strategies.

Four issues of Community Based Conservation newsletter were distributed to area stakeholders. A landowner guide for sage-grouse was completed July 2011.

6.2. Action: Share information and educational materials with CRM and other partners through use of printed materials, field tours, websites, reports, and other opportunities.

In addition to the above, there were several (5) field tours with Three Creeks and DLL to discuss projects and future improvements. Partners reported on research activities etc. See <http://www.utahcbcp.org/htm/groups/richcounty> for more info.

6.3. Action: Support involvement of public and private partners in sage-grouse monitoring (lek counts, brood counts, etc.) and management.

Ongoing process within the CRM.

Partners: USUEXT, CRM, NRCS, USU College of Natural Resources, BLM, UDWR, USFS, SITLA, private partners.

Threats Addressed: All

Aspects of Sage-grouse Ecology Addressed: All

7. Strategy: By 2016, increase percentage of riparian areas in Rich County that are functioning properly and provide suitable for sage-grouse brood-rearing habitat.

7.1. Action: Work with public and private partners to implement appropriate grazing management practices in riparian areas.

Working towards this action in Three Creeks and Birch Creek to protect and maintain function of the Riparian areas. Additional information is being collected through Open Range Consulting, Inc.

7.2. Action: Work with public and private partners to implement appropriate management to reduce amount of noxious/invasive weeds in riparian areas.

NRCS partners work with county weed boards to address problem and noxious weeds in riparian areas.

7.3. Action: Modify or adapt pipelines or developed springs to create and maintain small wet areas. Group decided to add ‘maintain’ above to this action in 2011

Springs are designed (troughs are floated so water stays in the troughs—this keeps springs from drying out and keeps the wet meadow areas intact) to keep the green/wet meadow areas while maintaining water in the troughs for the livestock.

7.4. Action: Manage existing wet meadows and riparian areas, with a focus on those areas in crucial sage-grouse brood-rearing habitats.

Working towards this action with the Three Creeks and Birch Creek projects see above.

7.5. Action: Manage vegetation and artificial structures to increase water-holding capability of areas.

No action taken in 2010/11.

7.6. Action: Install catchment structures to slow run-off, hold water, and eventually raise water tables.

No action taken in 2010/11.

Partners: BLM, NRCS, County Weed Board, USFS, private partners, UDWR.

Threats Addressed: Livestock grazing, vegetation management, drought/weather.

Aspects of Sage-grouse Ecology Addressed: Summer/late brood-rearing habitat quality, connectivity of seasonal habitat types.

8. Strategy: Increase practice of time-controlled, seasonally appropriate, rest-rotation grazing.

8.1. Action: Encourage small operators to combine herds and allotments to provide restoration with minimal fencing.

Accomplished through CRM and partners annually.

8.2. Action: Facilitate cooperation and communication between private livestock operators.

Accomplished through CRM and partners annually.

8.3. Action: Provide educational opportunities for private operators about benefits of time controlled grazing.

Accomplished through CRM and partners annually.

8.4. Action: Provide incentives (habitat project approval from CRM, UDWR, BLM, etc.) for cooperation between private partners.

Accomplished through CRM and partners annually.

8.5. Action: Avoid dividing allotments into pastures, where possible.

Group decided to delete this Action in 2011 due to it being counter intuitive.

Partners: CRM, NRCS, DLL, USUEXT, private partners, County Commission, BLM, USFS

Threats Addressed: Livestock grazing, fences.

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, population distribution, connectivity of seasonal habitat types.

9. Strategy: Minimize the impact of excessive predation.

9.1. Action: Modify power lines and wood fence posts (to remove raptor perches) in important sage-grouse areas, where feasible and where predator concerns have been identified.

No problem areas have been identified to modify.

9.2. Action: Remove trees, remove/modify raptor perches, and maintain quality sagebrush habitat, where predation concerns on sage-grouse have been identified.

Group decided to delete this Action in 2011 due to no real problem areas and problem trees.

9.3. Action: Begin site-specific predation management considering all predator species (especially common ravens and red fox) where necessary and appropriate.

WS and local landowners/Rich County coyote bounty are working to reduce coyote populations. No WS work specifically addressing foxes or ravens in 2011.

Partners: USDA-WS, UDWR, CRM, BLM, USFS, private partners.

Threats Addressed: Powerlines, fences, and other tall structures, roads, predators.

Aspects of Sage-grouse Ecology Addressed: Population size, population distribution.

10. Strategy: Improve knowledge of disease in sage-grouse populations.

10.1. Action: Collect grouse parasite and disease organism samples while handling birds for other research.

No samples collected, no apparent disease issues on birds found in 2010/11.

10.2. Action: Monitor radio collared and other grouse for West Nile Virus and other disease outbreaks.

No action taken in 2010/11

Partners: USU, UDWR, BLM, USFS, private partners, CRM.

Threats Addressed: Parasites/disease.

Aspects of Sage-grouse Ecology Addressed: Population size, connectivity of populations/subpopulations.

11. Strategy: Minimize impacts of utilities lines in sage-grouse habitat.

11.1. Action: Avoid new construction during important periods and re-route lines where technically and economically feasible to avoid impacts. If new power lines must be installed, route them along existing roads if possible.

No action/no lines in 2010/11.

11.2. Action: Schedule maintenance to minimize important periods, however, maintenance in emergency situations will be unrestricted.

No action/no lines in 2010/11.

11.3. Action: Install raptor deterrents when applicable.

No action/no lines in 2010/11.

Partners: BLM, USFS, UDWR, CRM, private partners.

Threats Addressed: Powerlines, fences, and other tall structures, roads.

Aspects of Sage-grouse Ecology Addressed: Population size, connectivity of seasonal habitats, connectivity of populations and subpopulations.

12. Strategy: Minimize impacts of exotic, invasive, and undesirable plant species.

12.1. Action: Identify areas where undesirable vegetation is encroaching on sage-grouse habitat.

No action taken to date.

12.2. Action: Treat areas where undesirable vegetation has become or is at risk of becoming a factor in sage-grouse habitat loss or fragmentation.

No action taken to date.

12.3. Action: Work with existing weed management programs to incorporate sage-grouse habitat needs.

No action taken to date.

12.4. Action: Identify large areas of introduced plant species that are not meeting sage-grouse habitat needs and reseed with native species where appropriate.

No action taken to date.

12.5. Action: Identify areas where pinyon or juniper trees are encroaching on good quality sagebrush habitat and treat as needed.

No areas identified in the county at this time.

12.6. Action: Manage fire, transportation, and vegetation treatments to minimize undesirable vegetation where possible.

No action taken to date.

Partners: UDWR, NRCS, County Weed Board, USUEXT, BLM, USFS, private partners.

Threats Addressed: Invasive/noxious weeds, fire, roads, vegetation treatments, *PJ encroachment not currently a problem in resource area*

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality

13. Strategy: Minimize the amount of quality sage-grouse habitat eliminated by residential and commercial land development consistent with private property rights.

13.1. Action: Participate with County land use decision makers in identifying key sage-grouse habitats.

No urban development occurred in 2010/11.

13.2. Action: Maintain sagebrush environments of sufficient size and shape around developments in sage-grouse habitat.

No urban development occurred in 2010/11.

13.3. Action: Encourage the voluntary use of conservation easements and other land protection vehicles with willing sellers in sage-grouse habitats.

NRCS conservation easement is in the works for certain areas in Duck Creek (440 acres). USFWS is implementing their Bear River Conservation Efforts that will allow funding for Easements.

13.4. Action: Educate rural residents about the importance of good grazing management in keeping small tracts weed free and capable of providing wildlife habitat.

Group decided to delete this Action in 2011 due to redundancy.

Partners: UDWR, CRM, Rich County Commission, Rich County Planning Department, USUEXT.

Threats Addressed: Home/cabin development, roads, powerlines and other tall structures.

Aspects of Sage-grouse Ecology Addressed: Connectivity of seasonal habitats, seasonal habitat quality.

14. Strategy: By 2016, increase population and habitat monitoring efforts in Rich County.

14.1. Action: Encourage public and private partners to use techniques from Connelly et al. (2003b) “Monitoring of Greater Sage-grouse Habitats and Populations”.

Group accomplished this through the CRM process.

14.2. Action: UDWR biologists will coordinate with private partners to identify sage-grouse lek sites and count birds on private lands.

Ongoing working with landowners and partners. In 2011, several potential lekking sites were discovered on private lands west of Randolph.

14.3. Action: UDWR to enlist and coordinate private volunteers and/or other agency biologists search for new leks and conduct lek counts on active leks.

CRM partners, USU researchers and QRM have done lek searches through on the ground surveying and aerial surveys. Seven new strutting grounds were located in 2011 consisting of over 150 males. The locations were reported to the UDWR for inclusion in the sage-grouse lek database. These leks will be monitored in future years and additional areas will be searched.

14.4. Action: Encourage, reimbursement for volunteers for mileage, etc.

No action taken in 2010/11. Given reduction in state and federal budgets the role of volunteers in implementing LWG actions will become more important.

14.5. Action: Test dead sage-grouse for West Nile Virus and any other parasites/pathogens of importance.

Group decided to delete this Action in 2011 due to redundancy.

Partners: UDWR, CRM, USU, USUEXT, BLM, USFS, UFBF, private partners.

Threats Addressed: Parasites and disease

Aspects of Sage-grouse Ecology Addressed: Population size, population distribution

15. Strategy: Minimize impacts of oil and gas development on sage-grouse and their habitat.

15.1. Action: Coordinate and communicate with BLM to ensure that adequate information/data is available for decision making process.

Accomplished through CRM process. Several proposals for new wells have been given to BLM and the County.

15.2. Action: Support recommendations that provide for temporal avoidance, minimization of tall structures, and avoid crucial habitat or use areas, where possible.

Accomplished through input from the CRM to the county or BLM.

15.3. Action: Reduce fragmentation of sage-grouse habitat by oil and gas development activities.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.4. Action: Minimize disturbance to sage-grouse associated with oil and gas development.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.5. Action: Reduce cumulative impacts of oil and gas development.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.6. Action: Use directional drilling where feasible to minimize surface disturbance, particularly where will density exceeds 1:160 acres.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.7. Action: Minimize pad size and other facilities to the extent possible, consistent with safety.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.8. Action: Plan and construct roads to minimize duplication.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.9. Action: Cluster development of roads, pipelines, electric lines and other facilities.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.10. Action: Use existing, combined corridors where possible.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.11. Action: Use early and effective reclamation techniques, including interim reclamation, to speed return of disturbed areas to use by sage-grouse.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.12. Action: Reduce long-term footprint of facilities to the smallest possible.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.13. Action: Avoid aggressive, non-native grasses (e.g. intermediate wheatgrass, pubescent wheatgrass, crested wheatgrass, smooth brome, etc) in reclamation seed mixes.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.14. Action: Eliminate noxious weed infestations associated with oil and gas development disturbances.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.15. Action: Minimize width of field surface roads.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.16. Action: Avoid ridge top placement of pads and other facilities.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.17. Action: Use low profile above ground equipment, especially where well density exceeds 1:160 acres.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.18. Action: Avoid breeding/nesting season (March 1 – June 30) construction and drilling when possible in sage-grouse habitat.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.19. Action: Limit breeding season (March 1 – May 1) activities near sage-grouse leks to portions of the day after 9:00 a.m. and before 4:00 p.m.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.20. Action: Reduce daily visits to well pads and road travel to the extent possible in sage-grouse habitat.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.21. Action: Utilize well telemetry to reduce daily visits to wells, particularly where well density exceeds 1:160 acres.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.22. Action: Locate compressor stations off ridge tops and at least 2,500 feet from active sage-grouse leks, unless topography allows for closer placement.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.23. Action: Avoid locating facilities within a minimum of ¼ mile of active sage-grouse leks, unless topography allows for closer placement.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.24. Action: Plan for and evaluate impacts to sage-grouse of entire field development rather than individual wells.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.25. Action: Study, and attempt to quantify, impacts to sage-grouse from oil and gas development.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.26. Action: Evaluate need for near-site and/or off-site mitigation to maintain sage-grouse populations during oil and gas development and production, especially where well density exceeds 1:160 acres.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.27. Action: Implement near-site and/or off-site mitigation as necessary to maintain sage-grouse populations.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.28. Action: Share sage-grouse data with industry to allow for planning to reduce and/or mitigate for impacts.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

15.29. Action: Update setbacks, mitigation requirements, and spatial and temporal avoidance recommendations as new information becomes available.

No action taken in 2010/11 but several proposals for new wells have been given to BLM.

Partners: UDWR, USFS, BLM, private partners.

Threats Addressed: Renewable and nonrenewable energy development, roads, powerlines and other tall structures, seasonal habitat quality, connectivity of seasonal habitats, connectivity of populations and subpopulations.

Aspects of Sage-grouse Ecology Addressed: Seasonal habitat quality, invasive/noxious weeds, connectivity of seasonal habitat types, connectivity of populations and subpopulations.

16. Strategy: Minimize impacts of utilities lines in sage-grouse habitat.

Group decided to delete this Action in 2011 due to redundancy.

16.1. Action: Avoid new construction during important periods and re-route lines where technically and economically feasible to avoid impacts.

16.2. Action: Schedule maintenance to minimize important periods, however, maintenance in emergency situations will be unrestricted.

16.3. Action: Install raptor deterrents when applicable.

Partners: BLM, USFS, USFWS, UDWR, private partners.

Threats Addressed: Powerlines and other tall structures, fire, invasive/noxious weeds, roads, vegetation management, predation.

Aspects of Sage-grouse Ecology Addressed: Connectivity of seasonal habitats, seasonal habitat quality, connectivity of populations and subpopulations, population size.

17. Strategy: Monitor and manage lek viewing opportunities to make sure they do not become harmful to sage-grouse populations.

17.1. Action: Occasionally conduct lek viewing tours to facilitate access to leks.

No action taken in 2010/11. Currently there has not been any interest expressed by anyone to have a need for this activity.

17.2. Action: Provide educational materials to local birding groups on appropriate lek viewing behavior.

No action taken in 2010/11. Currently there has not been any interest expressed by anyone to have a need for this activity.

17.3. Action: Discourage viewing of sensitive lek areas through access restrictions, increased law enforcement patrols, and effective use of trespass laws.

No action taken in 2010/11. Currently there has not been any interest expressed by anyone to have a need for this activity.

Partners: UDWR, BLM, USUEXT, private partners.

Threats Addressed: None.

Aspects of Sage-grouse Ecology Addressed: Population size, population distribution, breeding habitat quality.

18. Strategy: Initiate and/or maintain monitoring and research efforts to address information gaps identified in this Plan and in future adaptive planning efforts.

18.1. Action: Explore funding opportunities to further scientific research into information gaps identified in this Plan and in future adaptive planning efforts, as needed.

CRM is doing this through applying through various contracts and grants.

18.2. Action: Participate in the Northern Region WRI Regional Team and GIP to develop cooperative relationships with those partners.

Ongoing, accomplished by CRM partners.

18.3. Action: Develop research and/or monitoring protocols to address information gaps identified in this plan and in future adaptive planning efforts.

Ongoing, accomplished by CRM partners.

18.4. Action: Cooperate with USU and other academic institutions to establish graduate student projects designed to investigate information gaps identified in this Plan and in future adaptive planning efforts.

Ongoing, accomplished by CRM partners, several new research projects have been started and/or are scheduled to start in future years.

Partners: CRM, UPCD, NRCS, BLM, USFWS, UDWR, USU, USFS, private partners.

Threats Addressed: All

Aspects of Sage-grouse Ecology Addressed: All

Major Needs and Concerns

Much of what will happen in Rich County over the next 3-5 years will depend greatly on the Three Creeks allotment changes and grazing plan. Research will be initiated in 2011-2012 to collect baseline data on sage-grouse vital rates and seasonal habitat-use. The research is designed compare the effects of season long grazing systems to rest rotation/high stocking rates and short frequency grazing systems on sage-grouse production and habitat quality.

There continues to be concern over oil/gas development that is likely to occur on private lands. Many actions and strategies are in place to deal with oil/gas development but those may not be applicable on private lands. CRM will likely look to the County to assist in the implementation of these actions.

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

The SWARM Local Working Group is facilitated by Dr. Nicole Frey. SWARM consists of state and federal agency personnel, representatives from local government, academic institutions, private industry, and private individuals.

One of the main purposes of the SWARM Plan is to provide a framework of strategies and associated actions that can be implemented to abate threats identified by the USFWS (2010), address information gaps, and guide monitoring efforts. Strategies and actions listed below were developed by SWARM partners. For example, we have initiated two new research projects in the SWARM area as a direct result of partnerships among the agencies to target threats and data gaps for this region. The information gathered from these research projects will be used to drive future management actions in this region. These projects are partnerships with many organizations including SFH, UDWR, NRCS, and BLM that provide both monetary support (>\$208,000 combined) and in-kind services. Additionally, local landowners are involved in assisting with research in Hamlin Valley.



Figure 8. The Southwest Desert Adaptive Resource Management (SWARM) Sage-grouse Local Working Group Conservation Area consists of 5,672,052 acres located in south-western Utah.

Implementation of strategies and actions remains voluntary on the part of SWARM partners. However, for illustration, we have designated for each strategy the public and private partners who might be involved in implementation. Designation does not imply responsibility or commitment of resources of any sort to implementing, initiating, or completing any actions; however, it does provide a framework of resources and expertise.

Conservation Strategies and Actions

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

1.1. Action: Identify and prioritize target areas needing improvement.

The NRCS launched SGI and the local office actively promoted this program and had several landowners sign up for conservation practices under the initiative. BLM CCFO: Hamlin Valley- BLM has completed EA and is in the process of addressing comments. BLM CCFO: Greenville Bench- reseeded approximately 500-700 acres in the upper portion as part of a fire rehabilitation project.

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

LWG members worked closely with the WRI to ensure that projects initiated in this region benefit sage-grouse as much as possible. All projects in the SWARM region that could affect grouse are presented to the LWGs prior to submitting them through the WRI process.

1.3. Action: Monitor the response of sage-grouse to changing habitat conditions. NONE

1.4. Action: Implement treatments to change age class distribution of sagebrush.

The LWG works directly with WRI partners to plan projects in the area.

1.5. Action: Assist agencies in assessing wildfires in focus areas and restoration needs for sagebrush seed in mixes.

No action completed in 2010-2011.

Partners: UDWR, BLM, USUEXT, USFS, NRCS, local county residents

Threats Addressed: Fire and vegetation management, communication among parties, invasive/alien vegetation species

Aspects of Sage-grouse Ecology Addressed: Lack of key habitat-type connectivity, poor condition of surrounding communities, degradation of winter habitat quality, loss of breeding habitat quality, loss of brood-rearing habitat quality, loss of riparian area quality, reduction of population size, reduction of population distribution

2. Strategy: Improve water availability in brood-rearing habitat by 2016.

2.1. Action: Survey and evaluate current water sources and needs.

The BLM CCFO evaluated the following water sources in sage-grouse habitat in 2009-2011

Lotic sites:

Bluebell Spring (0.2 mile, FAR)

Big Maple Spring (0.2 mile, FAR-down)

Salt Cabin Wash (0.4 mile, FAR)

Lentic sites:

Bluebell Spring (0.4 acre, PFC)

Little Maple Spring (0.1 acre, FAR)

Marsh Spring (2.6 acres, PFC)

Salt Cabin Wash (0.1 acre, inventory)

Wiregrass Spring (0.2 acre, FAR)

2.2. Action: Partner with watershed specialists to identify new water sources.

2.3. Action: Consider new water developments that are multi-use and multi-purpose.

2.3.1. Action step: Construct guzzlers in areas identified as needing water.

BLM re-constructed Dry Willow Spring, removing PJ around the spring, re-developing the spring and head box, re-constructing exclosures to make ground level water and riparian vegetation available to wildlife.

2.4. Action: Coordinate with private landowners to protect current water availability that benefits brood-rearing habitat.

BLM has proposed several projects in and around Hamlin Valley to improve and project water sources and water access.

2.5. Action: Conduct vegetation treatments to improve water yield.

2.6. Action: Restore and improve wildlife access to water.

BLM has proposed several projects in and around Hamlin Valley to improve and project water sources and water access.

2.7. Action: Improve riparian conditions.

UPCD partners have proposed and are implementing projects to improve riparian conditions. However, no proposed projects are directly in known sage-grouse habitat.

Partners: UDWR, BLM, NRCS, interest groups

Threats Addressed: Invasive/alien vegetation species, concentrated wildlife and/or livestock use

Aspects of Sage-grouse Ecology Addressed: Loss of brood-rearing habitat quality, loss of riparian area quality, reduction of population size, reduction of population distribution

3. Strategy: Improve wildlife and livestock distribution in winter and brood-rearing habitat throughout the next ten years.

3.1. Action: Identify and prioritize target areas needing improvement.

BLM monitored sage-grouse use on 32,000 acres of sage-grouse habitat monitoring in Minersville. This will be used to identify priority areas for habitat improvements.

Several projects have been identified for the future to aid in habitat improvement through this process.

3.2. Action: Implement habitat improvements and direct management actions to improve distribution.

Livestock grazing permit renewals completed in 2010-2011 BLM to address concerns with livestock grazing within sage-grouse habitats allowing for identification of seasons of use and grazing management systems to improve distribution. Range improvements identified during this process for livestock management and habitat improvements were reviewed and will be prioritized for construction.

Partners: UDWR, BLM, FS, USUEXT, SITLA, NRCS

Threats Addressed: Concentrated wildlife and/or livestock use

Aspects of Sage-grouse Ecology Addressed: Degradation of winter habitat quality, loss of brood-rearing habitat quality, reduction of population size, reduction of population distribution

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

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

4.1.1. Action step: Identify regional groups and their contact person to promote cooperation from these groups.

The LWG continually strives to include all potential interested parties through newsletters, meetings, and one-to-one contacts.

4.2. Action: Support partnership efforts for special designations that promote sage-grouse habitat.

4.2.1. Action step: Write letters of support for new partnerships.

While not in direct relationship to partnerships, we comment on projects listed in the Federal Register. Additionally, we write letters of commendation for partners that have worked above and beyond what is expected.

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

This year we conducted two field tours; one in Buckskin and Dog Valleys and one in Pine Valley. Both were organized and led by the BLM to highlight future project potential.

4.4. Action: Distribute annual reports to local management agencies, county commissioners, and other interested parties.

Project and annual reports are always sent throughout our listserv, as well as to management agency leaders. In 2011, presentations were given to Beaver, Garfield, and Iron County Commissions.

4.5. Action: Develop incentives for landowners and interest groups.

4.5.1. Action step: Host educational field trips and provide interpretive areas.

Partners: USUEXT, NRCS, RC&D

Threats Addressed: Lack of communication among public parties, alternative land uses (mining, wind power, water development), development of roads or utilities, recreational use

Aspects of Sage-grouse Ecology Addressed: Lack of key habitat type connectivity, poor condition of surrounding communities, degradation of winter habitat quality, loss of breeding habitat quality, loss of brood-rearing habitat quality, loss of riparian area quality, reduction of population size, reduction of population distribution

5. Strategy: Locate and monitor new active lek sites over the next ten years.

5.1. Action: Survey landowners and land users to determine sage-grouse distributions.

UDWR CCFO does this annually.

5.2. Action: Investigate possible new lek sites based on local reports.

UDWR CCFO conducts annual surveys. No new leks were found this year. We usually do not find new leks based on local reports, but do find satellite lek locations and brood-rearing activity.

5.3. Action: Survey for new lek sites during lek counts and survey historic sites for new activity.

UDWR CCFO maintains the database on the status of new and historic lek sites. In the past, we have found a minimum of 6 leks that were not previously counted; these are reported in annual UDWR reports and our meeting minutes each spring.

5.4. Action: Rejuvenate historic lek site habitat for potential re-use.

BLM has proposed a project at Wild Pea Hollow that will improve grouse habitat.

Additionally, management of Bald Hills post-fire has led to increased use of the Bald Hills lek.

5.5. Action: Maintain and improve current lek site habitat.

Partners: UDWR, USFS, BLM, USUEXT, interest groups

Threats Addressed: Enhanced native and domestic predators, recreational use, concentrated wildlife and/or livestock use, fire and vegetation management, development of roads or utilities, alternative land uses (mining, wind power, water development), dramatic weather events

Aspects of Sage-grouse Ecology Addressed: Loss of breeding quality (leks and nesting) habitat

6. Strategy: Maintain or increase sage-grouse populations through direct management.

6.1. Action: Evaluate potential of translocation to supplement local populations.

6.2. Action: Work with enforcement agencies to prevent illegal harvest of sage-grouse.

6.3. Action: Monitor the presence of West Nile Virus or other diseases in sage-grouse populations.

6.4. Action: Identify and implement steps to reduce presence of West Nile Virus.
No Action Taken on this Strategy in 2011.

Partners: UDWR, USUEXT, BLM, SITLA

Threats Addressed: Diseases and parasites

Aspects of Sage-grouse Ecology Addressed: Loss of breeding quality (leks and nesting) habitat, reduction of population size, reduction of population distribution

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

7.1. Action: Remove juniper and pinyon pines from brood-rearing habitat.

Many projects initiated each year through UPCD.

7.2. Action: Reduce abundance of unwanted and/or invasive plant species.

7.2.1. Action step: Re-seed area after land disturbances such as mechanical treatments, fire, and human development.

Through UDWR CCFO, seed mixes to benefit grouse are used in all projects in potential sage-grouse habitat.

7.2.2. Action step: Utilize dedicated hunters to help with re-seeding and rehabilitation efforts.

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

No new projects this year; continue to monitor past projects.

7.4. Action: Evaluate the use of fire as a tool in areas where cheatgrass has been established or is prone to establish.

No Action Taken in 2011.

Partners: UDWR, BLM, USFS, USUEXT, interest groups

Threats Addressed: Invasive/alien vegetation species, fire and vegetation management

Aspects of Sage-grouse Ecology Addressed: Loss of brood-rearing habitat quality, reduction of population size, reduction of population distribution, lack of key habitat type connectivity, poor condition of surrounding communities, degradation of winter habitat quality, loss of breeding quality (leks and nesting) habitat

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

8.1. Action: Provide consultations and recommendations for new land developments and/or recreational uses.

8.2. Action: Regularly discuss new developments and alternative land uses to management agencies at local working group meetings.

8.3. Action: Identify and maintain list of contact people involved in land and recreational developments.

8.4. Action: Involve local county and city planning commissions in SWARM meetings.

USUEXT does this each year; updates were given to Iron and Beaver county commissions this year.

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

SWARM provides input to all projects presented to the SWARM group. Additionally, several SWARM members are on the review panel for UPCD.

Partners: USUEXT, UDWR, SITLA, NRCS, USFS, BLM, interest groups

Threats Addressed: Alternative land uses (mining, wind power, water development), development of roads or utilities, lack of communication among public parties, recreational uses

Aspects of Sage-grouse Ecology Addressed: Reduction of population size, lack of key habitat type connectivity, poor condition of surrounding communities, reduction of population distribution, loss of breeding quality (leks and nesting) habitat, loss of brood-rearing habitat quality, loss of riparian area quality

9. Strategy: Take steps to reduce the negative impact of dramatic weather events during the next ten years.

9.1. Action: Survey habitat after short-term dramatic weather events for damage to habitat.

9.2. Action: Manage for diverse and healthy habitat that will withstand effects of drought or other long-term weather events.

No Action Taken on this Strategy in 2011.

Partners: UDWR, BLM, USFS, SITLA

Threats Addressed: Dramatic weather events

Aspects of Sage-grouse Ecology Addressed: degradation of winter habitat quality, loss of breeding habitat quality, loss of brood-rearing habitat quality, loss of riparian area quality, reduction of population size, reduction of population distribution

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

10.1. Action: Remove current and avoid creating new raptor nesting in sage-grouse habitat.

10.2. Action: Enlist WS to reduce population numbers of problematic predator species.

10.3. Action: Support current predator management efforts by other groups or agencies in the focus areas.

10.4. Action: Determine predator community composition and depredation rate.

10.5. Action: Identify threatening predator species.

No Action Taken on this Strategy in 2011.

Partners: UDWR, USUEXT, WS

Threats Addressed: Enhanced native and domestic predators

Aspects of Sage-grouse Ecology Addressed: Loss of breeding quality (leks and nesting) habitat, loss of brood-rearing habitat quality, reduction of population size, reduction of population distribution

Major Needs and Concerns

The greatest need in the Southwest Desert is for better data on the movements and habitat use of grouse. Two graduate research projects have been initiated, which in turn has illuminated how much we DON'T know about this region's sage-grouse populations. This region has been

identified as having a high potential for wind and solar energy development in the future, which could impact grouse habitat and populations. We will continue the research of grouse in this region; this will help determine the best management actions and avoid negative impacts of resource development in the future.

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

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.

SVARM members combine active habitat improvement projects with valuable research efforts in order to understand both population trends as well as sage-grouse use of habitat project sites. These sites are effective demonstration projects and valuable beyond the region as education tools as well as having direct benefits for local sage-grouse populations. Two sites in the area have been treated over the last several years to improve brood-rearing habitat (Trout Creek and Chicken Springs), and another is in the planning stages. Researchers with Brigham Young University (BYU) are tracking grouse use of the treatment areas in addition to many other research questions. These BYU researchers are also investigating population dynamics, impact of predation on sage-grouse populations, genetic variation in the population, and many other topics. The working group receives regular updates from the research team. Members of the SVARM group have excellent, open lines of communication, often coordinating state, federal, local, and private efforts in project planning, implementation, and follow-up efforts. Weed control efforts are an excellent example of this kind of focused collaborative effort: Wasatch County, USFS, UDWR, and private individuals all work together to address weed issues for sage-grouse.



Figure 9. The Strawberry Valley Adaptive Resource Management (SVARM) Sage-grouse Local Working Group Conservation Area consists of 948,568 acres located in north-eastern Utah.

Conservation Strategies and Actions

1. Strategy: Provide a system and the reasonable extent of domestic livestock grazing that maintains and improves both the long-term stability of greater sage-grouse populations, and habitats and the livestock industry in the Resource Area.

1.1. Action: Coordinate grazing management with livestock operators to reduce resource and timing conflicts on leks and prime nesting habitat when possible.

1.2. Action: Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site.

1.3. Action: Encourage implementation of grazing systems that provide for areas and times of deferment, while taking into consideration the resource capabilities and needs of the livestock operator.

1.4. Action: Manage livestock to enhance riparian conditions.

As noted in previous years, most of the Strawberry Valley is not grazed, so livestock grazing is of minimal concern. In the Fruitland area, UDWR and Mitigation Commission own

numerous parcels of land in key sage-grouse habitat. Some of these lands are strategically grazed in the spring by the original permittee to help decrease the dominance of crested wheatgrass cover and restore sagebrush communities. The area is used during winters by sage-grouse from the Strawberry Valley populations. Other adjacent properties are not grazed.

2. Strategy: Maintain and, where possible, improve grass/forb component in the understory in nesting and brood-rearing areas.

2.1. Action: Reclaim and/or reseed areas disturbed by treatments when necessary, using seed mixtures with appropriate grasses and desirable forbs.

2.2. Action: Restore understory vegetation in areas lacking desirable quality and quantity of herbaceous vegetation, where economically feasible.

2.3. Action: Conduct vegetation treatments to improve forb diversity (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed areas, if needed.

2.4. Action: Develop management techniques to increase forb diversity and density in sagebrush steppe, within limits of ecological sites and annual variations.

A series of habitat projects (sagebrush manipulations in the Strawberry Reservoir Area) funded by the WRI and many partners continues to improve brood-rearing and nesting habitat opportunities for sage-grouse within several miles of the leks in the area. In 2011, the Badger Hollow project will be the third phase of these projects, of which Trout Creek and Chicken Springs were previous phases. Projects involve a variety of treatments (mowing, chain harrow, etc) and, when necessary, seeding with forbs and grasses appropriate to the elevation and sage-grouse needs.

3. Strategy: Enhance existing riparian areas or create small wet areas to improve nesting and brood-rearing habitat.

3.1. Action: Identify opportunities or needs to create small wet areas, implement such projects where economically feasible.

3.2. Action: Design and implement livestock grazing management practices to benefit riparian areas.

3.3. Action: Modify or adapt pipelines or developed springs, to create small wet areas.

3.4. Action: Locate projects to minimize the potential loss of water table associated with wet meadows.

3.5. Action: Protect existing wet meadows and riparian areas where necessary.

3.6. Action: Manage vegetation and artificial structures to increase water-holding capability of areas.

3.7. Action: Install catchment structures to slow run-off, hold water, and eventually raise water tables.

As noted in previous annual updates, water availability is not a limiting factor for sage-grouse in the resource area. No water projects for sage-grouse were done during this reporting period.

4. Strategy: Manage PJ stands to reduce encroachment into sagebrush/grass communities

4.1. Action: Remove encroaching trees and tall shrubs mechanically (chainsaws, chaining,

etc.) or by other methods, to maintain visibility at lek sites and security from predation in other seasonal habitats.

4.2. Action: Brush-cut or treat with other mechanical methods specified areas and re-claim or re-seed as necessary.

4.3. Action: Coordinate with State Forester to expand defensible space programs to improve sage-grouse habitat where possible.

The primary area where encroachment is a concern is in the lower-elevation Fruitland area, where an extensive series of projects has been done in recent years. For example, UDWR utilized Dedicated Hunters to remove encroaching PJ into sagebrush habitat on UDWR property (on the Tabby Mountain WMA, west of Highway 208) in the Fruitland area. The volunteers lop and scatter encroaching trees to maintain sage-grouse winter habitat quality. Two thousand additional acres are planned for 2011. Range trend sites are monitored in former chaining projects from 2004, 2005, 2006, and 2007 in the Tabby Mountain area as well.

5. Strategy: Improve lek vegetation conditions to allow for predator recognition and visibility.

5.1. Action: Open lek areas that have been invaded by sagebrush and other shrubs.

5.2. Action: Map and inventory leks with potential for restoration.

5.3. Action: Maintain and enhance desired conditions for leks.

5.4. Action: Coordinate vegetation management to maintain desired conditions

5.5. Action: Evaluate/monitor treatment effects.

No lek-specific vegetation work was done this year.

6. Strategy: Maintain and improve habitat conditions in winter range.

6.1. Action: Treat decadent stands of sagebrush (harrowing, aerator, brush beating, chain, spike), where appropriate, to create uneven aged stands of sagebrush across the Resource Area.

6.2. Action: Establish easements or other land protection in crucial sage-grouse use areas.

6.3. Action: Work with county planners and county council to establish zoning ordinances for crucial winter habitat that protect those areas from inappropriate development.

Winter habitat, particularly that used during especially harsh winters, is primarily located in the Fruitland area. In the fall of 2010, the purchase of another property in the Fruitland area was finalized by Mitigation Commission. That land is managed by UDWR, using strategies such as spring grazing designed to bring back native sagebrush communities, as noted in Strategy 1. Other activities on that property are in planning stages, such as gating and signage to reduce human impacts, as well as PJ encroachment project planning. Previous PJ removal projects, which opened up more sagebrush for possible winter occupation by the birds, are being monitored with range trend as noted above.

7. Strategy: Protect crucial habitat from inappropriate development.

7.1. Action: Work with county planners and county council to establish zoning ordinances

for crucial habitat that protect those areas from inappropriate development.

7.2. Action: Establish easements or other land protection in crucial habitat.

7.3. Action: Work with USFS and other federal agencies to protect crucial sage-grouse habitat from renewable and non-renewable energy development.

7.4. Action: Maintain or reestablish sagebrush patches of sufficient size and appropriate shape, to support sage-grouse between agricultural fields.

7.5. Action: Work with NRCS and others to maintain and enroll important sage-grouse habitats involved in Farm Bill programs currently in agricultural production.

7.6. Action: Encourage use of sage-grouse friendly seed mixes, including bunchgrasses, forbs, and big sagebrush, in plantings.

7.7. Action: Encourage interest and enrollment of key sage-grouse habitats in the Farm Bill programs.

Alan Smith's property, purchased by the UDWR, is managed for wildlife, including sage-grouse. The Utah Reclamation and Mitigation Commission has also purchased property in the area which is managed by the UDWR (key contact: Randall Thacker in NE Region) for wildlife benefit. Since January 2010, 5442 acres have been purchased, bringing the total amount in the SVARM area owned by the mitigation commission to 10,223 acres. Four parcels have been purchased recently, two large of several thousand acres and two small parcels of less than 200. Two large parcels, Deep Creek and Currant Creek Ranch, were highly likely to have been developed into ranchettes or cabins and have now been protected from development.

SVARM is also aware of a potential large year-round development that may be proposed in the vicinity of the Strawberry Reservoir, and could impact sage-grouse populations if the area was developed. SVARM members keep current on county planning issues and communicate regularly with the county; for example, notifying county planners and council members in Wasatch County when updates to GIS information on sage-grouse in the region become available.

8. Strategy: Minimize impacts of noxious and invasive weeds.

8.1. Action: Identify areas where noxious/invasive weeds are encroaching on sage-grouse habitat

8.2. Action: Treat areas where noxious/invasive weeds and non-desirable introduced species (e.g. smooth brome) have become, or are at risk of becoming, a factor in sage-grouse habitat loss or fragmentation.

8.3. Action: Work with existing weed management programs to incorporate sage-grouse habitat needs.

8.4. Action: Identify large areas of noxious/invasive weeds and non-desirable introduced species (e.g. smooth brome), that are not meeting sage-grouse habitat needs and reseed where appropriate.

8.5. Action: Manage burned areas, transportation, utility, and pipeline corridors, and vegetation treatments to minimize undesirable vegetation where possible.

8.6. Action: Work with County weed board to increase awareness of weed problems in sage-grouse and other important wildlife habitat.

The UDWR, Wasatch County, and the USFS continue to coordinate on various properties in the area to control weeds. The Trout Creek project has ongoing musk thistle concerns which are jointly addressed by all three partners. This year, the county has \$86,000 from Title 2 monies for weed management that can be used to help protect the state's investment in habitat treatments for sage-grouse, including spot treatments for weeds inside habitat treatment areas.

9. Strategy: Minimize impacts of utility lines, fences, and roads in sage-grouse habitat.

9.1. Action: Avoid new construction during important periods and re-route lines where technically and economically feasible to avoid impacts.

9.2. Action: Schedule maintenance to avoid important periods, however, maintenance in emergency situations will be unrestricted.

9.3. Action: Install raptor deterrents when applicable

Several proposed power lines were discussed by the SVARM group but were not determined to be of sufficient concern to sage-grouse areas to require formal comment from the group. The TransWest power line is likely to come through the existing utility corridor in the Fruitland area. It could cause some additional concerns for sage-grouse, but the group felt that because power lines already exist in that corridor, and new power lines are inevitable, using the existing corridor – and consolidating the impacts – is preferable to alternate locations which might cause new impacts to the population. The group chose not to write any letters of concern or support for power line routings.

10. Strategy: Minimize sage-grouse habitat loss to oil and gas activities.

10.1 Action: Increase/encourage participation by private oil/gas industry in SVARM.

10.2. Action: Encourage use of central tanks and locate those in areas with least impact to sage-grouse.

10.3. Action: Use directional drilling where feasible to minimize surface disturbance, particularly where well density exceeds 1:160 acres.

10.4. Action: Minimize pad size and other facilities to the extent possible, consistent with safety.

10.5. Action: Plan and construct roads to minimize duplication.

10.6. Action: Cluster development of roads, pipelines, electric lines and other facilities.

10.7. Action: Minimize noise disturbance (directing mufflers, glass packs, etc.) in and near lek and nesting habitat.

10.8. Action: Use existing, combined corridors where possible.

10.9. Action: Use early and effective reclamation techniques, including interim reclamation, to speed return of disturbed areas to use by sage-grouse.

10.10. Action: Reduce long-term footprint of facilities to the smallest possible.

10.11. Action: Avoid aggressive, nonnative grasses (e.g. intermediate wheatgrass, pubescent wheatgrass, crested wheatgrass, smooth brome, etc) in reclamation seed mixes.

10.12. Action: Eliminate noxious weed infestations associated with oil and gas development disturbances.

10.13. Action: Minimize width of field surface roads.

10.14. Action: Avoid ridge top placement of pads and other facilities.

10.15. Action: Use low-profile, above-ground equipment, especially where well density

exceeds 1:160 acres.

10.16. Action: Avoid breeding/nesting season (March 1 – June 30) construction and drilling when possible in sage-grouse habitat.

10.17. Action: Limit breeding season (March 1 – May 1) activities near sage-grouse leks to portions of the day after 9:00 a.m. and before 4:00 p.m.

10.18. Action: Reduce daily visits to well pads and road travel to the extent possible in sage-grouse habitat.

10.19. Action: Utilize well telemetry to reduce daily visits to wells, particularly where well density exceeds 1:160 acres.

10.20. Action: Locate compressor stations off ridge tops and at least 2,500 feet from active sage-grouse leks, unless topography allows for closer placement.

10.21. Action: Avoid locating facilities within a quarter mile of active sage-grouse leks, unless topography allows for closer placement.

10.22. Action: Plan for and evaluate impacts to sage-grouse of entire field development rather than individual wells.

10.23. Action: Study, and attempt to quantify, impacts to sage-grouse from oil and gas development.

10.24. Action: Evaluate need for near-site and/or off-site mitigation to maintain sage-grouse populations during oil and gas development and production, especially where well density exceeds 1:160 acres.

10.25. Action: Implement near-site and/or off-site mitigation as necessary to maintain sage-grouse habitat quality.

10.26. Action: Share sage-grouse data with industry to allow planning to reduce impacts.

SVARM is not aware of any energy development (oil and gas) concerns for sage-grouse in the area. The potential for energy development is believed to be minimal.

11. Strategy: Minimize the impact of extraordinary predation.

11.01. Action: Modify power lines and wood fence posts (to remove raptor perches) in important sage-grouse areas, where feasible, and where predator concerns have been identified.

11.02. Action: Remove trees, remove/modify raptor perches, and maintain quality sagebrush habitat, where predation concerns on sage-grouse have been identified.

11.03. Action: Begin site-specific predation management considering all predator species (especially common ravens and red fox) where necessary and appropriate.

11.04. Action: Work with County planners and private developers to incorporate trash minimization and domestic animal control measures in CCNRs.

Predator control for ravens continued this year, with specific focus on early-season gatherings and the Fruitland area, rather than waiting until sage-grouse were lekking. Targeted, near-lek efforts in the Strawberry-Fruitland areas are done later in the season as needed. Anecdotally, the early season control efforts appear to be much more effective. Although no formal WS efforts were put toward red fox control, a private individual trapped multiple red foxes in the area. The impact of this type of predator reduction on the sage-grouse population is not known but may be limited: the timing of the control efforts indicated that individuals captured were likely dispersing foxes rather than established

pairs, so long-term population impacts are unlikely to have been achieved. BYU researchers continued to assess the grouse response to predator control efforts. No perch removal projects were undertaken, and communication with the county and developers has not yet involved predator management.

12. Strategy: Improve knowledge of diseases and parasites in sage-grouse populations.

12.01. Action: Collect sage-grouse parasite and disease organism samples while handling birds for other research, when possible.

12.02. Action: Monitor radio-collared and other sage-grouse for West Nile Virus and other disease outbreaks.

BYU continues to test for West Nile whenever feasible, but they have not found any evidence of the disease in the resource area.

13. Strategy: Improve knowledge of genetics in sage-grouse in minimum viable populations.

13.01. Action: Collect samples for genetic research from all known breeding complexes (including hunted and un-hunted areas) when possible.

BYU researchers have been collecting blood samples from radio-collared and other captured birds over many years. They have also collected feathers at lek sites. This year, a new graduate student at BYU will begin a multi-year study into how the translocations have influenced the population genetics of sage-grouse in the Strawberry Valley.

14. Strategy: Increase size of sage-grouse population in the Resource Area.

14.01. Action: Continue translocation efforts as called for by UDWR, BYU, and other participating agencies and organizations

14.02. Action: Continue existing predator management activities as called for by UDWR, USDA-WS, BYU, and other participating agencies and organizations.

Translocation and red fox control work has formally ended. The last collared bird from the translocations has not been possible to recapture due to her location on private land to which researchers do not have access, and her collar no longer has remaining battery life. Early season raven control has continued in the area.

15. Strategy: Maintain and increase long-term habitat and population monitoring and research.

15.01. Action: Maintain long-term habitat monitoring sites on the Resource Area (as monitored by the Utah Big Game Range Trend Studies program).

15.02. Action: Maintain and increase radio-monitoring of translocated sage-grouse.

15.03. Action: Work with agency partners to maintain and increase funding for research and monitoring

15.04. Action: Continue to monitor sage-grouse populations through use of lek counts

15.05. Action: Increase lek search activities to find new lek sites in the Resource Area

15.06. Action: Work with USDA-WS to monitor populations of sage-grouse predators.

As in past years, monitoring efforts continue as a joint effort between BYU and UDWR. No new leks have been found in the area. Big Game Range Trend Studies are ongoing in the

area. Predator reduction monitoring is anecdotal but communication continues between UDWR, SVARM, and APHIS. Future monitoring plans for impact to ravens is under discussion. Three WRI projects in the Fruitland area were monitored for sage-grouse activity and pellets in late summer 2009: East Santaquin Draw 2006 chaining, the Santaquin 2009 sagebrush chaining, and the 2-Bar chaining from 2007. All monitoring occurred post-treatment so effects of treatments on sage-grouse will be difficult to determine. Final results will be available in 2011.

A new lek was discovered via helicopter surveys, and was first included in lek counts in the spring of 2011. BYU has continued its population monitoring efforts in the area, including tracking sage-grouse use of new treatment areas. According to quarterly reports from BYU, the treatments areas have been popular roosting areas as well as successful trapping areas, indicating notable grouse usage of those areas. BYU researchers are examining data to better understand nesting location choices with regard to the treatment areas at Trout Creek, Chicken Springs, and Badger Hollow (Badger Hollow vegetation work will be done in summer 2011).

Three past WRI projects in the Fruitland area were monitored for sage-grouse activity and pellets late summers of 2009 and 2010: Santaquin sagebrush and a PJ chaining from 2004, and the 2-Bar chaining from 2007. All monitoring occurred post-treatment so effects of treatments on sage-grouse are impossible to isolate using this data. However, at the 2004 Santaquin Draw sagebrush/greasewood chaining project on UDWR land, sage-grouse pellets were found both years in nearby reference sites and in 2009 at treatment sites; no live birds were found on site either summer. At the 2004 Santaquin draw PJ chaining project, where both treatment and reference areas are classified as crucial winter sage-grouse habitat, no sage-grouse pellets were detected during 2010, nor were any live sage-grouse were seen in the area during 2009 or 2010 by avian and pellet group crews. The final report from 2009 field work suggests that these earlier treatments in sagebrush may not have achieved the goals of improving sage-grouse habitat, because they were located in winter habitat where sagebrush treatments would not have been beneficial. Treatments to remove PJ may have long-term sage-grouse benefits in winter habitat but the need for vegetation recovery time puts the data needs beyond the scope of WRI surveys. In addition, there is a need to monitor during seasons when the birds would be likely to occupy the site (i.e. winter or early spring).

16. Strategy: Increase public education about sage-grouse ecology, conservation, and management.

16.01. Action: Work with Audubon Society to increase educational opportunities regarding sage-grouse in the Resource Area.

16.02. Action: Develop educational materials (brochures, presentations, etc.) and deliver to Friends of Strawberry Valley, Strawberry Anglers Association, Daniels Summit Lodge, Strawberry Water Users and other potential stakeholders to increase awareness

16.03. Action: Encourage use of signage in appropriate areas to increase awareness of crucial sage-grouse habitats.

16.04. Action: Develop sage-grouse identification materials for distribution to recreationists, bird watchers, and other stakeholders.

A second kiosk was installed in a private land parking lot to inform winter recreationists who might encounter sage-grouse to respect the birds and avoid harassing them. This parking lot is currently being expanded and improved, so will likely see additional winter use by recreationists. A one-page informational piece was developed to include in a future publication coordinated by the FOSV group. Summer field tours, by SVARM, the central region UPCD group, and others, continue to highlight the habitat projects – particularly Trout Creek – as examples of successful sage-grouse habitat restoration efforts through vegetation manipulation.

17. Strategy: Minimize negative impacts of incompatible OHV (ATVs, snowmobiles, 4WD trucks, etc.) recreation and other recreation on sage-grouse populations and habitats.

17.01. Actions: Work with County planners and other agencies to restrict seasonal OHV access to crucial sage-grouse use areas

17.02. Actions: Coordinate with enforcement agencies (Sheriff, parks, USFS, Counties) to increase awareness of negative impacts to sage-grouse

17.03. Action: Create opportunities and use existing avenues to increase awareness in participating public about negative impacts of OHV use in crucial sage-grouse areas

17.04. Action: Coordinate with enforcement agencies to increase awareness of poaching and to minimize sage-grouse poaching opportunities

17.05. Action: Encourage use of signage to identify areas closed to hunting; language in proclamation that specifies closed area

As noted, a second kiosk has been installed at a key snowmobile parking area. The exact impact of recreational vehicles on sage-grouse is unknown and requires additional research.

18. Strategy: Maintain and increase coordination and communication between state and federal agencies and private partners.

18.01. Action: When possible, present all brush management projects at regional UPCD meetings in advance, to facilitate information sharing and coordination

18.02. Action: Annually provide maps of crucial sage-grouse habitat to SVARM partners

18.03. Action: Meet annually to visit habitat projects in the field

18.04. Action: Hold annual coordination meeting prior to the start of spring field season

18.05. Action: SVARM representative to report on UDWR-USFS coordination meetings

18.06. Action: Coordinate with the County through public lands coordinator and committee

18.07. Action: When possible, comment, as a group, on proposed actions that may impact sage-grouse or their habitats.

Focused coordination and review continues to occur on all proposed and ongoing habitat projects, through comments in the WRI database, Central Region WRI meetings, and USFS /UDWR coordination on projects. This year (2011), a presentation was given to the public lands committee of the Wasatch County council, explaining sage-grouse issues locally and regionally, with the intent of continuing relationships between SVARM and the County, as well as providing information about sage-grouse GIS maps that were updated during this

reporting period. The group visits habitat projects annually as part of the summer field tour. Summer tours are often co-sponsored by other groups, such as the local weed management group or Friends of Strawberry Valley, which increases the audience that gets a chance to see sage-grouse habitat projects.

Major Needs and Concerns

The Strawberry Valley LWG is focused on brood-rearing habitat improvement projects in the area surrounding Strawberry Reservoir, and continued understanding of local sage-grouse populations, including use of habitat improvement projects and impact of predation by ravens and red foxes. Efforts also continue to protect and improve winter and breeding habitat in the Fruitland area. The group monitors other concerns, such as development, utility transmission, and recreation changes that might threaten grouse populations.

Uintah Basin Adaptive Resource Management Local Working Group

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.

This past year, UBARM has worked to address a wide variety of threats to sage-grouse. Concern about encroachment of PJ into current and former sage-grouse habitat across the Basin has resulted in a suite of PJ treatment projects with multiple species goals, including sage-grouse habitat improvement. Multiple research efforts are also ongoing in the area. Researchers from BYU have entered a second year of work on Diamond Mountain to study population dynamics. Their research has been greatly helped by the involvement of private landowners in the area. In several other key sage-grouse areas in the Basin, including Anthro Mountain and Deadman Bench, USU researchers continue to work on projects focused on better understanding the effects of different types of vegetation treatments on sage-grouse habitat. UBARM also works proactively on many fronts. The group considers the impacts of proposed projects, just as transmission lines, and comments as appropriate. Several group members participated in the scoping process conducted by TransWest for their proposed transmission line through the area. The group sent a joint letter regarding their concern that the alternate proposed route over Diamond Mountain was of concern for sage-grouse populations on that mountain. Also, many members of UBARM work with private landowners to find ways to improve sage-grouse habitat. Several private landowners participated in the NRCS Sage-grouse Initiative to improve habitat for sage-grouse on private lands.



Figure 10. The Uintah Basin Adaptive Resource Management (UBARM) Sage-grouse Local Working Group Conservation Area consists of 5,375,423 acres located in eastern Utah.

Conservation Strategies and Actions

1. Strategy: Increase cooperation and coordination between UBARM and public and private partners.

1.1. Action: By 2007, meet with the Ute Tribe Fish and Game Department to update them on UBARM activities and encourage participation.

1.2. Action: Work with the NRCS to review and potentially endorse NRCS WHIP and EQIP projects that would benefit sage-grouse on private land.

1.3. Action: Encourage use of UBARM defined desired conditions for state and federal lands and influence management actions in order to move toward those conditions.

Another round of NRCS SGI funding through NRCS's EQIP and WHIP programs was made available this spring. A number of landowners expressed interest, and projects are being designed in consultation with NRCS and UDWR staff. Three NRCS projects are planned for the upcoming year on Diamond Mountain, as follows: SGI funds will support two projects: The first, on a 640 acre tract of private land, will include 163 acres of lop and scatter of PJ, 98 acres of spike treatment, water well/pipeline/troughs to help aid in prescribed grazing/fence to break tract up into pastures to help with prescribed grazing, upland wildlife habitat management (prescribed grazing for three years following other treatment completion). The second, which covers 2125 private acres and 1600 acres of BLM leases, will include 300 acres of spike treatment for sagebrush, 600 acres Dixie harrow (mosaic), fence, pipeline, troughs, and spring development to help facilitate prescribed grazing, upland wildlife habitat management (prescribed grazing for three years following other treatment completion). In addition, 1670 acres of private land will be under GRP and include prescribed grazing designed to benefit both livestock and sage-grouse habitat.

No sage-grouse activity related to Tribal land is known to have occurred in the reporting period, although a planned prescribed fire on Towanta Flats in sage-grouse areas may be under consideration for a mosaic, mechanical treatment instead if the project becomes a priority for the tribe. UDWR has yearly meetings with tribal biologists to discuss joint projects and opportunities, including those related to sage-grouse. The tribe has done greenstripping for firebreaks. Further work may provide opportunities to design greenstripping projects to also benefit sage-grouse; for example, by conducting lop and scatter projects in key sage-grouse areas.

2. Strategy: Increase information/education opportunities with local community and UBARM partners.

2.1. Action: By 2008, develop informational handout about sage-grouse ecology and UBARM activities.

2.2. Action: Through 2016, include information about UBARM activities in County Extension newsletter.

2.3. Action: Schedule spring field tour of habitat management projects.

2.4. Action: Coordinate workshops for private partners to share information about habitat enhancement, funding opportunities, and other relevant topics to be identified as needed.

A late-summer 2010 field tour was held jointly with UBARM and the UPCD, which gave both groups the chance to expand their understanding of habitat projects in the area. In late June of 2011, another joint field tour to the Book Cliffs gave participants a solid understanding of the scale of PJ treatments and fire management in that region, including context for the sage-grouse populations in that area. An article on corvid predation on sage-grouse and habitat issues was published in the Vernal Express in the spring of 2011. Despite some factual inaccuracies, it explained some of the core issues addressed by the working group. A series of conversations with private landowners on Diamond Mountain regarding a possible CCAA occurred through the winter and spring of 2011. No work is currently being done on this unless the landowners chose to move forward with it. If that occurs, a public workshop would likely be held to increase the opportunity for others to participate. NRCS held a landowner workshop, also attended by the UDWR Sensitive

Species biologist, to educate agricultural producers in the area about SGI funding and how to design projects to help sage-grouse.

3. Strategy: By 2016, increase brood-rearing habitat quality in the Resource Area.

3.1. Action: Work with agency partners to develop projects that would increase brood-rearing habitat quality in the Resource Area.

3.2. Action: Work with private and public partners to monitor effects of habitat improvement projects on vegetation and sage-grouse habitat use.

3.3. Action: Conduct vegetation treatments to improve forb diversity in the understory (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed/treated areas, when necessary, using seed mixtures high in native bunch grasses and desirable forbs.

A second phase of the WRI Cedar Camp lop and scatter in the Book Cliffs is located near sage-grouse summer habitat, and will continue to expand acceptable habitat for sage-grouse in the area. A new guzzler in the area will provide water for bison, mule deer, and livestock in the area. It does not create wet areas for forbs but will improve grazing distribution in the area. A harrow project on Raven Ridge east of Deadman Bench is in winter and brood-rearing habitat will treat 501 acres.

Several private lands projects may also help sage-grouse. For one large Sage-Grouse Initiative project on Diamond Mountain, UDWR biologists have helped adapt plans for a sagebrush treatment on private land on the rim of Diamond Mountain (Siddoway Ranch) to be more sage-grouse friendly. The treatment will be extended onto the operator's BLM allotment to allow for treatment of the same number of acres of sagebrush for livestock forage enhancement, but in a way that improves habitat for sage-grouse by creating a mosaic rather than treating all those acres in a smaller area. On larger areas of 2,125 private acres and 1,600 BLM acres, the project includes 300 acres of spike treatment on the private land and 600 acres Dixie harrow (mosaic) on BLM, fence, pipeline, troughs, and spring development to help facilitate prescribed grazing, upland wildlife habitat management (prescribed grazing for three years following other treatment completion). A different landowner, west of Matt Worner Reservoir, has proposed a project to do several hundred acres of vegetation treatment and a water development. UDWR may be able to pay for seed so that the project can move forward; otherwise, it will be proposed to WRI in late 2011.

4. Strategy: By 2016, increase population and habitat monitoring efforts in the Resource Area.

4.1. Action: Encourage public and private partners to use techniques from Connelly et al. (2003) "Monitoring of Greater Sage-grouse Habitats and Populations"

4.2. Action: In 2007, UDWR biologists will coordinate with Ute Tribe biologists to identify sage-grouse lek sites and count birds on Tribal lands.

4.3. Action: UDWR to enlist and coordinate private volunteers and/or other agency biologists search for new leks and conduct lek counts on active leks.

Several research projects continued during the reporting period. BYU continued their research on Diamond Mountain, with almost 80 birds collared over two seasons. The researchers are focusing on bird movements, seasonal habitat use, nest success, nest

vegetation characteristics, and other topics. They will be modeling habitat preferences with large amounts of data collected at both best sites and random sites. The researchers have been provided housing by a local landowner, who has been very supportive of the research. USU continues work on Anthro Mountain; a new graduate student is following previously collared birds as well as trapping and collaring approximately 15 additional grouse. Brian Maxfield from UDWR monitors both of the Anthro and Diamond Mountain sage-grouse populations during the winter to learn about winter range use. This year, because of the harsh winter, this data was particularly useful. Anthro Mountain birds went in many different directions. Diamond Mountain birds were found using areas both on the mountain and off the rim. UDWR continues to work toward collaboration with tribal biologists but no formal monitoring coordination occurred this year. In addition, UDWR continued its regular annual lek counts. Anadarko funded mapping of sage-grouse habitat done by researchers at USU. The modeling results will be likely be ground-truthed in the near future. All three Cooperative Sagebrush Initiative projects (two grazing projects on Deadman Bench and Anthro Mountain, and associated Dixie Harrow work on Deadman Bench) are research designed to better understand sagebrush habitats treatment impacts on vegetation.

5. Strategy: By 2016, work with public and private partners to reduce invasive/noxious plant species, especially in areas used for nesting and brood-rearing.

5.1. Action: Identify areas where undesirable vegetation is encroaching on sage-grouse habitat.

5.2. Action: Coordinate with county weed control department to control invasive/noxious weeds in areas used by sage-grouse.

5.3. Action: Treat and/or reseed areas where undesirable vegetation has become or is at risk of becoming a factor in sage-grouse habitat loss or fragmentation.

5.4. Action: Avoid controlled burns and fight wildfires in areas dominated by cheat-grass.

5.5. Action: Encourage and support use of chemical and mechanical treatments to control cheat-grass and invasive/noxious weeds.

5.6. Action: Manage fire, transportation and vegetation treatments to minimize undesirable vegetation where possible.

Spotted knapweed control (and some musk thistle control) on UDWR land on Diamond Mountain continues near Matt Worner Lake. This is a joint project between many weed management partners, including UDWR and the Uintah Basin Cooperative Weed Management Area association. Weed management is ongoing maintenance for many UBARM partners. In addition, whitetop and hoary cress are managed on Goslin Mountain and Antelope Flat in Daggett County. Some tamarisk treatments have also been done on Red Creek near sage-grouse habitat. One of the primary weed concerns in the Uintah Basin is cheatgrass and halogeton that comes in when land is disturbed, and can be very difficult to combat particularly in dry areas where re-establishment of native vegetation can be difficult. Energy companies work to control weeds related to well pads and other disturbances, but it is very challenging due to the environmental conditions. In areas where sage-grouse populations are more dense, weeds are not a primary threat.

6. Strategy: By 2016, minimize effects of roads and utilities in areas used by sage-grouse.

- 6.1. Action:** Re-vegetate utility corridors with sage-grouse seed mixes.
- 6.2. Action:** Avoid placement of new roads and utilities near lek sites (specific distances should be site specific).
- 6.3. Action:** Where possible, install perch deterrents on tall structures located in areas used by sage-grouse.
- 6.4. Action:** Avoid new construction during important periods and re-route lines where technically and economically feasible to avoid impacts.
- 6.5. Action:** Schedule maintenance to minimize important periods, however, maintenance in emergency situations will be unrestricted.
- 6.6. Action:** Where practicable, install low-profile tanks in areas used by sage-grouse.

Construction for the WIC compressor station on Diamond Mountain was completed and the station went online in early winter of 2010. Many entities in the last year and a half have been involved in commenting on potential large power transmission line routes in the area. TransWest held scoping meetings in the area in early 2011 to discuss proposed routes. One of those routes, an alternative to the preferred transmission line path, crosses Diamond Mountain. The sage-grouse group wrote a joint letter to TransWest indicating that the group opposed that alternative due to the negative impacts a large powerline over Diamond could have on the large sage-grouse populations there. Routing alternatives for South Gate have not been publicly discussed. The group is working to stay apprised of further project developments. Also, as noted in previous years, the Uintah County Public Lands Implementation Plan (Uintah County Board of Commissioners 2005a) has regulations in place to follow the state sage-grouse plan and ensure buffer zones between known leks and new road, utility, fence, etc. developments.

7. Strategy: Monitor impacts of hunting on sage-grouse population in Resource Area.

- 7.1. Action:** Review and advise UDWR on sage-grouse harvest plans.

As in previous years, sage-grouse limits are re-evaluated each year based on spring lek counts. UDWR uses wing barrel collections in the UBARM area where hunts are allowed.

8. Strategy: Provide for a level and system of domestic livestock grazing that maintains and improves both the long-term stability of sage-grouse populations and habitats and the livestock industry in the Resource Area.

- 8.1. Action:** Coordinate grazing management with livestock operators to reduce resource and timing conflicts on leks and prime nesting habitat when possible.
- 8.2. Action:** Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site.
- 8.3. Action:** Encourage implementation of grazing systems that provide for areas and times of deferment while taking into consideration the resource capabilities and needs of the livestock operator.
- 8.4. Action:** Manage livestock to enhance riparian conditions.

As in recent past years, grazing is excluded from riparian areas on the UDWR land (Matt Warner) on Diamond Mountain. If a proposed feral horse roundup on Winter Ridge in the Book Cliffs takes places next year, the subsequent grazing pressure reduction range

improvements would likely benefit sage-grouse habitat in the area, although political opposition to horse roundups make them uncertain. If horses are rounded up, vegetation treatments that would increase forb and grass availability can be considered. The three previously mentioned NRCS projects under contract on Diamond Mountain – of 640, 1670, and 3725 acres respectively – all include prescribed grazing designed to help sage-grouse. NRCS projects funded through the Sage-Grouse Initiative last year were primarily sagebrush treatment with Spike. UWDR biologists worked to reduce regular chemical application rates to reduce sagebrush kill so the brush treatments would be at a level that benefits sage-grouse. Due to the late spring, project success rates are still unclear.

Grazing projects associated with the Cooperative Sagebrush Initiative have used cattle to reduce smooth brome on Anthro Mountain and reduce sagebrush using sheep grazing. Both projects are being monitored to determine how grazing can be used to manipulate vegetation in ways that may benefit sage-grouse habitat.

NRCS, GIP, and federal partners who manage private grazing leases are all members of the local working group who work with grazers to plan and implement strategic grazing management on Blue Mountain, Diamond Mountain, and Anthro Mountain. Sage-grouse considerations are part of their work when working with grazers.

9. Strategy: By 2016, key public and private lands in the UBARM Resource Area (specific locations to be selected) are protected and/or managed so as to conserve/improve sage-grouse nesting and breeding habitat.

9.1. Action: Pursue private land protection on a few key parcels (TBD).

UBARM partners remain open to opportunities to conserve key sage-grouse areas more permanently, although the group has not worked on any projects this year.

10. Strategy: Manage PJ stands to reduce encroachment into sagebrush/grass communities.

10.1. Action: Remove encroaching trees and tall shrubs mechanically (chainsaws, chaining, etc.) or by other methods, where needed to maintain visibility at lek sites and security from predation in other seasonal habitats.

10.2. Action: Identify areas where pinyon or juniper trees are encroaching on good quality sagebrush habitat and treat and re-seed as needed.

10.3. Action: Revisit and retreat as needed PJ removal sites to prevent reestablishment in previously treated areas.

The Cedar Camp lop and scatter, phase II, funded by WRI, should improve sage-grouse habitat by opening up sagebrush stands in otherwise thick PJ. Sage-grouse broods have been seen in the area in recent years. Cherry Mesa, another PJ removal project in the same area, has been completed also. On Diamond Mountain, the Mail Draw and Ryegrass lop and scatter projects, each about 1000 acres, were done, and will likely improve late brood-rearing or winter habitat by removing PJ encroachment. Other projects with the potential to improve sage-grouse habitat by removing PJ include the proposed Buck Camp Canyon lop and scatter just south of East Bench, and the next phase of Anthro Mountain lop and scatters on Jeep Trail and Gilsonite Ridge.

In addition, one PJ-related Sage-Grouse Initiative project with NRCS is planned for the upcoming year. This project, as mentioned previously, is on Diamond Mountain, and on a 640 acre-tract; the project includes 163 acres of PJ lop-and-scatter.

11. Strategy: Enhance existing riparian areas or create small wet areas to improve nesting, brood-rearing, late summer, and fall habitat.

11.1. Action: Identify opportunities or needs to create small wet areas in areas used by sage-grouse, implement such projects where economically feasible.

11.2. Action: Modify or adapt pipelines or developed springs to create small wet areas.

11.3. Action: Locate projects to minimize potential loss of water table associated with wet meadows.

11.4. Action: Protect existing wet meadows and riparian areas where necessary.

11.5. Action: Manage vegetation and artificial structures to increase water-holding capability of areas.

11.6. Action: Install catchment structures to slow run-off, hold water, and eventually raise water tables.

11.7. Action: During times of drought, coordinate with public and private partners to maintain water available for sage-grouse during late summer and early fall in areas used during this time

On Diamond Mountain, two projects funded through NRCS's SGI will include water developments to help in prescribed grazing.

12. Strategy: Improve lek vegetation conditions to allow for predator recognition and visibility.

12.1. Action: Open lek areas that have been invaded by sagebrush and other shrubs.

12.2. Action: Map and inventory leks with potential for restoration.

12.3. Action: Maintain and enhance desired conditions for leks.

No lek-specific work was done this year. The need for focus on the lek on Tribal land -- where birds reportedly strut on the road -- remains.

13. Strategy: Maintain Conservation Reserve Program (CRP) lands for sage-grouse.

13.1. Action: Work with NRCS and others to maintain the CRP program and improve its benefit to wildlife by altering seed mixes to be more sage-grouse friendly, including bunchgrasses, forbs and big sagebrush

13.2. Action: Maintain or reestablish sagebrush patches of sufficient size and appropriate shape to support sage-grouse between agricultural fields.

13.3. Action: Rehabilitate old low diversity, sod bound CRP fields with sage-grouse friendly seed mixes including bunchgrasses, forbs, and big sagebrush.

13.4. Action: Encourage interest and enrollment of key sage-grouse habitats, including those in grain production, in relevant Farm Bill programs (CRP and GRP).

A large section of Diamond Mountain is in CRP. 160 acres that came out of CRP last year has been reenrolled in the project and will continue to be rested.

14. Strategy: Minimize the amount of quality sage-grouse habitat eliminated by residential, cabin, and commercial land development consistent with private property rights.

14.1. Action: Participate with County land use decision makers in identifying key sage-grouse habitats and establishing zoning ordinances that protect those areas from inappropriate development

14.2. Action: Educate County planning departments about where important sage-grouse use areas are located.

14.3. Action: Maintain sagebrush environments of sufficient size and shape around developments in sage-grouse habitat.

14.4. Action: Encourage the voluntary use of conservation easements and other land protection vehicles with willing sellers in sage-grouse habitats.

14.5. Action: Educate rural residents about the importance of good grazing management in keeping small tracts weed free and capable of providing wildlife habitat.

14.6. Action: If development does occur, work to minimize impacts to biodiversity.

Housing and commercial land development is not currently a major issue for sage-grouse in the area. USUEXT and UWDR staff presented basic sage-grouse issues and information to the county commissioners in March 2011. This included information that the GIS shape files for sage-grouse habitat have been updated, and a third category added (occupied habitat). This information also went out to the whole email list.

15. Strategy: Minimize sage-grouse habitat loss to oil and gas activities while ensuring continued development.

15.1. Action: Reduce fragmentation of sage-grouse habitat by oil and gas development activities.

15.2. Action: Minimize disturbance to sage-grouse associated with oil and gas development.

15.3. Action: Reduce cumulative impacts of oil and gas development.

15.4. Action: Use directional drilling where feasible to minimize surface disturbance, particularly where well density exceeds 1:160 acres.

15.5. Action: Minimize pad size and other facilities to the extent possible, consistent with safety.

15.6. Action: Plan and construct roads to minimize duplication.

15.7. Action: Cluster development of roads, pipelines, electric lines and other facilities.

15.8. Action: Use existing, combined corridors where possible.

15.9. Action: Use early and effective reclamation techniques, including interim reclamation, to speed return of disturbed areas to use by sage-grouse.

15.10. Action: Reduce long-term footprint of facilities to the smallest possible.

15.11. Action: Avoid aggressive, non-native grasses (e.g. intermediate wheatgrass, pubescent wheatgrass, crested wheatgrass, smooth brome, etc) in reclamation seed mixes.

15.12. Action: Eliminate noxious weed infestations associated with oil and gas development disturbances.

15.13. Action: Minimize width of field surface roads.

15.14. Action: Avoid ridge top placement of pads and other facilities.

15.15. Action: Use low profile above ground equipment, especially where well density exceeds 1:160 acres.

- 15.16. Action:** Avoid breeding/nesting season (March 1 – June 30) construction and drilling when possible in sage-grouse habitat.
- 15.17. Action:** Limit breeding season (March 1 – May 1) activities near sage-grouse leks to portions of the day after 9:00 a.m. and before 4:00 p.m.
- 15.18. Action:** Reduce daily visits to well pads and road travel to the extent possible in sage-grouse habitat.
- 15.19. Action:** Utilize well telemetry to reduce daily visits to wells, particularly where well density exceeds 1:160 acres.
- 15.20. Action:** Locate compressor stations off ridge tops and at least 2,500 feet from active sage-grouse leks, unless topography allows for closer placement.
- 15.21. Action:** Avoid locating facilities within ¼ mile of active sage-grouse leks, unless topography allows for closer placement.
- 15.22. Action:** Plan for and evaluate impacts to sage-grouse of entire field development rather than individual wells.
- 15.23. Action:** Study, and attempt to quantify, impacts to sage-grouse from oil and gas development.
- 15.24. Action:** Evaluate need for near-site and/or off-site mitigation to maintain sage-grouse populations during oil and gas development and production, especially where well density exceeds 1:160 acres.
- 15.25. Action:** Implement near-site and/or off-site mitigation as necessary to maintain sage-grouse populations.
- 15.26. Action:** Share sage-grouse data with industry to allow planning to reduce impacts.
- 15.27. Action:** Participate in county planning efforts for oil and gas exploration and development to ensure that sage-grouse impacts are minimized.

Appendix 5 of the 2009 Utah State Sage-Grouse Plan, which covers development recommendations in sage-grouse habitat, including energy development guidelines and buffer zones around leks, is still under discussion, so guidelines have not been formally issued by the state.

Several proposed energy developments with the potential to impact sage-grouse populations. On Anthro Mountain, the USFS has been working with Vantage and Berry Petroleum to address sage-grouse issues. UDWR has provided comments. USFS is currently developing an amendment to the Berry Petroleum EIS to better address sage-grouse issues. One concern was that both companies planned to use access roads that would increase disturbance to sage-grouse. Berry Petroleum has agreed to not use Nuttar's Ridge as access; Vantage is still in discussion, but may be able to use the recommendations from the Berry EIS changes. Possible amendments that would benefit sage-grouse include timing restrictions, increased buffers around leks, and pad spacing restrictions. Berry has also worked to power pumpjacks using natural gas-powered engines, which should improve noise levels and air quality.

The BLM has been working with several field development proposals as well, including the Natural Buttes EIS (about 3,600 wells), which is close to completion. Sage-grouse protection measures will likely be fairly standard with the RMP for all alternatives except the resource protection alternative, which may include increased NSO buffers around active

leks, greater timing restrictions within 2 miles of active leks to protect habitat, noise reduction techniques, etc.

Questar continues to work on Energy by Design with various partners, but no formal proposal has been made to the BLM yet. It focuses on core sage-grouse populations regionally, so the peripheral populations south of Hwy 40 (i.e. Deadman Bench) will not fall within that area.

Additional EISs for large multi-well developments are in progress in the area, but are not in active sage-grouse areas, such as the Monument Butte and Capita proposals. The Gasco EIS (North of Nine-mile canyon and west of the Green River) is not in an active sage-grouse area but is peripheral to historic habitat. This EIS is almost complete but is under EPA review due to air quality issues. This EIS proposes about 1500 new natural gas wells.

16. Strategy: Minimize the impact of excessive predation.

16.1. Action: Plan and conduct research to determine the population-level effects of predation on sage-grouse.

16.2. Action: Where sage-grouse population-level effects of predation (especially common ravens and red fox) are clearly identified, plan and implement site-specific predation management as necessary. Incorporate a monitoring plan to determine success.

16.3. Action: Modify power lines and wood fence posts and remove trees (to remove raptor perches) in important sage-grouse areas, where feasible and where predator concerns have been identified

As in previous years, lethal control of ravens via DRC-1339 baited eggs continues. This year, both Diamond and Blue Mountain were targeted for raven control. A total of 864 eggs were placed on the ground in the spring of 2011. Significant raven-related spring sage-grouse nest predation was recorded on Diamond Mountain in early May. No systematic research to examine raven impacts is being done in the area, although BYU researchers may be able to address raven impacts in their analysis. The same researchers noted that ravens appeared in large numbers in sage-grouse breeding habitat on Diamond Mountain at a particularly sensitive time for eggs and chicks.

17. Strategy: Improve knowledge of disease in sage-grouse populations.

17.1. Action: Collect grouse parasite and disease organism samples while handling birds for other research.

17.2. Action: Monitor radio collared and other grouse for West Nile Virus and other disease outbreaks.

West Nile is present in the Uintah Basin but has not yet conclusively appeared to be a problem for sage-grouse locally.

18. Strategy: Increase subpopulation numbers and genetic distribution in Resource Area subunits (TBD).

18.1. Action: Use translocation from within the Resource Area to supplement subpopulations.

18.2. Action: Use translocation from areas outside the Resource Area to supplement subpopulations.

18.3. Action: Use translocation techniques developed by Baxter et al. in Strawberry Valley

No additional translocations to the UBARM Resource area occurred this year. Ongoing research work by USU (on local and translocated birds on Anthro Mountain) may provide additional insight into genetic distribution once data have been analyzed. Several group members feel that translocations from Diamond Mountain to sage-grouse areas in the Book Cliffs would be a valuable research focus for the future.

19. Strategy: Increase knowledge base regarding the positive and negative effects of sagebrush habitat improvement projects on other shrubsteppe species.

19.1. Action: Identify and/or develop research and monitoring protocol to address impacts to other shrubsteppe species of management practices targeted at improving or enhancing sage-grouse populations and/or habitats.

No habitat projects done by UPCD/WRI or NRCS were monitored for wildlife in 2009 and/or 2010, and funding was not available for UPCD/WRI wildlife monitoring in 2011. Many projects include range trend sites that monitor vegetation change, but not wildlife species.

Major Needs and Concerns

An underlying challenge for the UBARM group is the wide variety of threats facing sage-grouse and the effort required to fully understand and address those threats. Large-scale energy development continues to be a concern for sage-grouse. Interstate transmission line routing has the potential to have significant impacts on local populations depending on the routes chosen. Much habitat is threatened by PJ encroachment, and substantial efforts continue to address that concern. Predation continues to be a concern as well, particularly by ravens. The complexity of how threats combine to impact sage-grouse populations and the large area of concern provide ample opportunities to help the bird but also make coordination and targeted interventions challenging.

West Desert Adaptive Resource Management Local Working Group

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.

WDARM met four times this year. 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.

The group focused this year on expanding PJ treatments, particularly in areas where encroachment on sage-grouse habitat is of particular concern. The WDARM group coordinates closely with the Central Region UPCD team, by proposing and designing sage-grouse specific projects, as well as providing comments on others' proposed projects to maximize the benefit to sage-grouse habitat.

This is particularly important in an area where substantial fire and fuel management projects intersect sage-grouse habitat. WDARM members have increased the depth of coordination between multiple entities as well: based on information provided to the group by a private landowner in attendance at the group meeting, a plan to address weed concerns near one of the leks was developed with shared leadership and resources from BLM, Tooele County Commission, weed managers from NRCS, and DWR. WDARM also stepped up its efforts to better understand the social and ecological complexity of recreation impacts to sage-grouse habitat. This will be a focus in the coming year.



Figure 11. The West Desert Adaptive Resource Management (WDARM) Sage-grouse Local Working Group Conservation Area consists of 5,137,991 acres located in western Utah.

Conservation Strategies and Actions

1. Strategy: Maintain and increase coordination and communication with agency and private partners.

1.1. Action: Participate with and coordinate with the Central Region UPCD, Tooele County Natural Resource Group, Deep Creek Watershed partnership, Goshute Tribe, Tooele and Juab County Commissioners, SCDs, UFBF, and any other groups, as necessary.

1.2. Action: Hold annual field tours to review projects, evaluate on-the-ground progress on the Plan, and share ideas.

1.3. Action: Develop educational material appropriate for a broad recreationist audience to develop sensitivity to issues identified in the Plan.

Coordination continues between many entities, including increased involvement with Tooele

County this year, and joint project conversations and field tour planning with the Central Region WRI. For example, UDWR, BLM, and Tooele County held a small site tour to develop a project area for squarrose knapweed infestation treatment near the Government Wash lek. Regarding public awareness and sensitivity to issues identified in the sage-grouse plan, it was determined that previous verbal communications with sheep herders on the Pony Express Road have been insufficient to keep sheep out of the area near the lek during the nesting season, and the group may need to explore formal signage options. Increased coordination with the Tooele County Trails group included providing them with sage-grouse shape files to help their planning be more sensitive to sage-grouse habitat areas. NRCS Sage-Grouse Initiative funding for private lands projects that benefit sage-grouse was renewed in 2011. This information was taken to all Conservation Districts in the area.

2. Strategy: By 2010, reduce PJ stands from sage-grouse use areas.

2.1. Action: Remove PJ trees from priority areas where action is warranted.

2.2. Action: Revisit and retreat PJ removal sites, as needed.

Several PJ removal projects occurred in the area, including Winter Springs (WRI project #1528) south of the Government Wash lek, that treated 698 acres. Rockwell Ranch bullhog (WRI project # 1630) has been planned as well. The Sharps Valley Project (WRI project #1594) was done (both bullhog and lop and scatter), which wasn't primarily for sage-grouse benefit but did occur on the edge of range and may benefit sage-grouse. WRI Project 1927, Shearing Corrals Bullhog, has been proposed and funded for upcoming implementation in the resource area. Planning discussions and a field tour have taken place to plan for a BLM juniper removal project in the South Onquis area south of Vernon. Also, West Government bullhog and lop and scatter (WRI project #2024) is being flagged for treatment summer of 2011.

3. Strategy: By 2016, increase brood-rearing habitat quality in the Resource Area.

3.1. Action: Work with the NRCS and private partners to develop projects that would increase brood-rearing habitat quality in the Resource Area.

3.2. Action: Work with agency partners to develop projects that would increase brood-rearing habitat quality in the Resource Area.

3.3. Action: Work with private and public partners to monitor effects of habitat improvement projects on vegetation and sage-grouse habitat use.

3.4. Action: Where appropriate, reduce sagebrush canopy cover with mechanical or chemical treatments and reseed with ecologically appropriate seed mixes.

Discussed a sagebrush thinning project to improve habitat for the Look Out Pass lek 3-4 miles south of the area in the South Onquis area south of Vernon. The Benmore Pastures 2009 project was monitored for sage-grouse in 2009, and some sage-grouse and sage-grouse sign were detected in the area. WRI Project #1928, Ibapah Sagebrush Treatment Phase 4, has been proposed for 2011 to improve brood-rearing habitat. Previous Ibapah treatments were also likely beneficial for sage-grouse.

4. Strategy: Through 2016, maintain and protect winter habitat distribution and quality in the Resource Area.

- 4.1. Action:** Promote protection of winter habitat from fire.
- 4.2. Action:** Promote protection of winter habitat from OHV trail development and activities.
- 4.3. Action:** Update maps of crucial winter habitat areas and monitor winter habitat use areas for presence of sage-grouse.
- 4.4. Action:** In the event of fire, aggressively rehabilitate sites to prevent domination of invasive/noxious weed communities.

GIS shape files for sage-grouse statewide were updated in the past year to better reflect habitat use areas. The Sharps Valley Project has been completed. PJ projects in the area, mentioned earlier, should improve winter habitat.

5. Strategy: Reduce the threat of conversion of sagebrush stands to invasive/noxious weed communities.

- 5.1. Action:** Seed green-strips and/or fire breaks in crucial areas (to be identified).
Status: WDARM partners treated sagebrush Ibapah west and east slopes, Rush Valley, (see table and Map)
- 5.2. Action:** Identify areas where fire suppression should be promoted to protect crucial habitat.
- 5.3. Action:** Maintain and/or increase fuels reduction projects in crucial areas (to be identified)
- 5.4. Action:** Work with agency and private partners to conduct vegetation treatments that restore functional plant groups to sagebrush communities.
- 5.5. Action:** Coordinate with noxious/invasive weed Coordinated Weed Management Area (CWMA) personnel.

The Sheeprocks joint project is on hold this year due to lack of funding. During a recent WDARM meeting, group members from several agencies teamed up to design a project to treat squarrose knapweed infestations near the Government Wash lek. The project has included state, federal, county, and local participants to date and will probably be proposed to WRI in the next funding cycle.

6. Strategy: Minimize the impact of excessive predation.

- 6.1. Action:** Modify power lines and wood fence posts (to remove raptor perches) in important sage-grouse areas, where feasible and where predator concerns have been identified.
- 6.2. Action:** Remove trees, remove/modify raptor perches, and maintain quality sagebrush habitat, where predation concerns on sage-grouse have been identified.
- 6.3. Action:** Maintain or increase site-specific predation management to consider all predator species (especially common ravens and red fox) where necessary and appropriate.
- 6.4. Action:** Initiate research on direct and indirect impacts of predation during each sage-grouse life history phase.
- 6.5. Action:** Coordinate management and research with USDA-WS.

The LWG continues to need specific information on the impact of powerlines on increasing

predation of sage-grouse. WS continued early-season raven control efforts, and conducted as-needed “targeted” (near leks) control efforts when necessary. USDA-WS also does more general predator work on foxes and coyotes in the area, although not specifically for sage-grouse benefit. Several raptor nesting posts were also recently removed from the vicinity of the Benmore Lek.

7. Strategy: Work with public and private partners to implement livestock management plans that address seasonal needs of sage-grouse and livestock operations.

7.1. Action: Incorporate appropriate livestock management in vegetation/habitat treatment projects.

7.2. Action: Initiate research on the direct and indirect effects of livestock grazing on various aspects of sage-grouse life history.

7.3. Action: Work with public and private partners to evaluate livestock management in crucial sage-grouse use areas.

No projects to directly decrease potential impacts of grazing on sage-grouse were undertaken. The landowner of potential concern on the satellite lek may be interested in managing the area to increase forage in ways that are less compatible with sage-grouse management. NRCS staff will try to address the issues, and other working group members are trying to stay apprised of the situation, the landowner can chose what he does with his property, so the group can only make recommendations. More generally, NRCS/UDWR staff continues to work with landowners. NRCS and the USFS consider sage-grouse needs in grazing management plans and allotment criteria.

8. Strategy: By 2016, increase population and habitat monitoring efforts in the Resource Area.

8.1. Action: Encourage public and private partners to use techniques from Connelly et al. (2003) “Monitoring of Greater Sage-grouse Habitats and Populations”

8.2. Action: In 2007, UDWR biologists will coordinate with Goshute Tribe biologists to identify sage-grouse lek sites and count birds on Tribal lands.

8.3. Action: UDWR to enlist and coordinate private volunteers and/or other agency biologists search for new leks and conduct lek counts on active leks.

8.4. Action: Through 2016, test dead sage-grouse for West Nile Virus and any other parasites/pathogens of importance.

8.5. Action: Secure funding to support additional research and monitoring on issue as identified in the Plan.

8.6. Action: Increase outreach with private landowners to facilitate greater communication about sage-grouse distribution, ecology, and management.

As noted last year, UDWR conducts the majority of lek monitoring in the area, with additional monitoring help from the WDARM chairman. A recent UDWR study near Tintic Junction collared and tracked birds in that area to learn more about the population. No new leks have been found. West Nile is not a significant concern in the area.

9. Strategy: Encourage use of this Plan in local, county, state, and federal natural resources planning efforts.

9.1. Action: Provide the Plan to all appropriate local, county, state, and federal natural

resource agencies, departments, and personal.

9.2. Action: Review local, county, state, and federal plans and projects with the potential to impact sage-grouse and/or sagebrush habitats in the Resource Area.

9.3. Action: Participate in local, county, state, and federal natural resource planning efforts, committees, and working groups.

WDARM members are actively involved in Central Region WRI meetings, work with Tooele County to address recreation planning concerns for sage-grouse. The group wrote a collective letter to BLM encouraging use of the sage-grouse plan in a future travel management plan for the Resource Area, and plan to continue conversations next year.

10. Strategy: Minimize impacts of oil and gas development on sage-grouse and their habitat.

10.1. Action: Coordinate and communicate with BLM and USFS to ensure that adequate information/data is available for decision making process.

10.2. Action: Support recommendations that provide for temporal avoidance, minimization of tall structures, and avoid crucial habitat or use areas, where possible.

10.3. Action: Reduce fragmentation of sage-grouse habitat by oil and gas development activities.

10.4. Action: Minimize disturbance to sage-grouse associated with oil and gas development.

10.5. Action: Reduce cumulative impacts of oil and gas development.

10.6. Action: Share sage-grouse data with industry and encourage planning to reduce and/or mitigate for impacts.

Energy concerns in the area related primarily to potential power line impacts. The group needs research on the effect of power lines on sage-grouse. To date, no sage-grouse monitoring efforts have identified specific major concerns with power line routing.

11. Strategy: Minimize the amount of quality sage-grouse habitat eliminated by residential and commercial land development consistent with private property rights.

11.1. Action: Participate with County land use decision makers in identifying key sage-grouse habitats.

11.2. Action: Maintain sagebrush environments of sufficient size and shape around developments in sage-grouse habitat.

11.3. Action: Encourage the voluntary use of conservation easements and other land protection vehicles with willing sellers in sage-grouse habitats.

11.4. Action: Educate rural residents about the importance of good grazing management in keeping small tracts weed free and capable of providing wildlife habitat.

11.5. Action: Work with public and private partners to maintain rural economies and viable ranching and agricultural enterprises.

No specific actions were taken by the group, as no development-related issues have arisen that need specific attention.

12. Strategy: By 2016, maintain or increase distribution and quality of mesic sites available to sage-grouse during summer months.

12.1. Action: Work with public and private partners to develop mesic sites for sage-grouse

associated with existing or new water developments.

12.2. Action: Develop project planning tools (both printed material and on-the-ground examples) to illustrate successful, wildlife-friendly, water developments.

No sage-grouse specific water projects were done this year.

13. Strategy: Maintain or improve breeding habitat quality in the Resource Area.

13.1. Action: Where appropriate, conduct vegetation manipulation to maintain open areas on lek sites.

13.2. Action: Work with public and private partners to maintain nesting cover in crucial breeding areas.

13.3. Action: Work with public and private partners to minimize disturbance to crucial areas during lek and nesting seasons.

As mentioned in an earlier strategy, BLM is looking at several possible projects, including potential sagebrush thinning to improve brood-rearing habitat conditions for the sage-grouse population that uses the Look Out Pass lek that is 3-4 miles to the south.

Jason Robinson placed fence reflectors, provided by BLM, near two sage-grouse leks in the area (Benmore and Government Wash). Although additional weed monitoring work was planned for the same trip, blizzard conditions prevented observations from being made. BLM is working to develop a use plan for a 10-mile buffer near the Pony Express route, which should provide opportunities to restrict some activities in sage-grouse brood-rearing habitat.

14. Strategy: Minimize the negative impacts of recreation on sage-grouse populations and their habitats.

14.1. Action: Work with local, county, state, and federal planners and managers to minimize impacts of OHV trails and undeveloped roads on crucial sage-grouse habitat.

14.2. Action: Work with law enforcement agencies to enforce existing and new laws, ordinances, and regulations specific to hunting/poaching, OHV recreation, and trespassing.

14.3. Action: Work with OHV recreation groups to develop greater sensitivity and awareness to issues identified in this Plan.

14.4. Action: If appropriate, work with public and private partners to restrict lek viewing opportunities during crucial time-periods and in crucial areas.

14.5. Action: In a GIS system, evaluate where existing and proposed trails intersect crucial sage-grouse habitat.

Conversations have continued between Tooele County, UDWR, and other working group members. As noted previously, GIS shapefiles of sage-grouse habitat were provided to the Trails Committee to help identify sensitive sage-grouse areas that could be protected with a recreation management or trails plan. The Forest Service has taken steps to make sure that dog trials that occurred near one lek in the area do not happen near the lek again. WDARM also wrote a letter to the BLM expressing the importance of having a travel management plan for the area so that sage-grouse population impacts can be reduced and enforcement stepped up in key sensitive areas. The BLM has limited funding to begin a travel management process, but is working on a response to WDARM's concerns.

Major Needs and Concerns

As in past years, habitat and other work continues in support of the goals in the WDARM plan. Recreation impacts to sage-grouse and sage-grouse habitats, as well as weed management concerns, are likely to be key issues during the upcoming year. The WDARM plan is being reviewed and will be updated in 2011-2012 to specifically address conservation threats identified by the USFWS (2010).

Literature Cited

Utah Division of Wildlife Resources (UDWR). 2009. Utah Greater Sage-Grouse Management Plan. Utah Department of Natural Resources, Division of Wildlife Resources, Publication 09-, Salt Lake City, Utah, USA.

United States Fish and Wildlife Service (USFWS). 2010. Endangered and threatened wildlife and plants; 12-month finding for petitions to list the greater sage-grouse (*Centrocercus urophasianus*) as threatened or endangered; proposed rule. Federal Register <<http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/FR03052010.pdf>> accessed 6-13-2010.

List of Acronyms

4WD – Four Wheel Drive vehicle
AGG - Agriculture
APHIS - Animal and Plant Health Inspection Service (under USDA)
ATV – All Terrain Vehicle
BARM – Box Elder Adaptive Resource Management
BBC - Bill Barrett Cooperation
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
EA - Environmental Assessment
EIS – Environmental Impact Statement
EQIP - Environmental Quality Incentives Program
FOSV - Friends of Strawberry Valley
LWG – Local Working Group
MSARM – Morgan/Summit Adaptive Resource Management
NEPA – National Environmental Policy Act
NRCS – Natural Resources Conservation Service
NSO – No Surface Occupancy
OHV – Off-highway Vehicle
PARM – Parker Mountain Adaptive Resource Management
PECE – Policy for Evaluation of Conservation Efforts
PJ – Pinyon Juniper
RC&D – Resource Conservation & Development Council, Inc.
RICHCO – Rich County Coordinated Resource Management
SCD – Soil Conservation District
SITLA – Utah School and Institutional Trust Lands Administration
SGI – Sage-grouse Initiative
SUU – Southern Utah University
SVARM – Strawberry Valley Adaptive Resource Management
SWARM – Southwest Desert Adaptive Resource Management
UBARM – Uintah Basin Adaptive Resource Management
UDOT – Utah Department of Transportation
UDWR – Utah Division of Wildlife Resources
UFBF – Utah Farm Bureau Federation
UPCD – Utah Partners for Conservation and Development
USDA – United States Department of Agriculture
USDA/WS – United States Department of Agriculture Wildlife Services
USFS – United States Forest Service
USFWS – United States Fish and Wildlife Services
USU – Utah State University
USUEXT – Utah State University Extension
WDARM – West Desert Adaptive Resource Management
WHIP - Wildlife Habitat Incentives Program
WIC -- Wyoming Interstate Company

WMA – Wildlife Management Area
WMU – Wildlife Management Unit
WNV – West Nile Virus
WRI – Watershed Restoration Initiative
WS - Wildlife Services (under USDA)