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

Accomplishment Report

2008

Photo by Todd Black

June 2009

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Submitted to

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Preface

This report summarizes the status and 2008 accomplishments of Utah's Adaptive Resource Management Greater Sage-grouse (*Centrocercus urophasianus,* hereafter referred to as sage-grouse) Local Working Groups (LWGs). These groups 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.
9. A copy of LWG's approved management plans (These reports are available on our web site www.utahcbcp.org).

The conservation plans discusses 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.

The LWG sage-grouse conservation plans, previous annual reports, and meeting minutes can be accessed at www.utahcbcp.org.

Executive Summary

The Community-based Conservation Program (CBCP) encompasses the historical range of sage-grouse in Utah as identified in the 2002 (2009 revised) Strategic Management Plan for Sage-grouse (Figure 1). The plan, approved by the Utah Wildlife Board on 1 June 2002 *revised 2009), mandated the organization of local sage-grouse working groups (LWGs) to develop and implement sage-grouse conservation plans. The Utah Division of Wildlife Resources (UDWR) in cooperation with Utah State University Extension (USUEXT), private landowners, public and private natural resource, wildlife management, and conservation agencies and organizations have implemented the CBCP.

In 2008, Utah's Adaptive Resources Management Greater Sage-grouse (hereafter referred to as 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. These strategies meet the guidelines set forth by the US Fish and Wildlife Service (USFWS) in their Policy for Evaluation of Conservation Efforts (PECE) standards. The conservation strategies and action 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 2008, greater emphasis was placed on identifying population and habitat conditions and issues specific to each LWG conservation area.

In this report, each LWG presents 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 ten 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. As of January 2008, 10 Utah LWGs have completed sage-grouse conservation plans. These plans and a summaries of LWG activities can be found on-line at www.utahcbcp.org.

Staffing

Project Director: Terry A. Messmer, Professor and Associate Director, Jack H. Berryman Institute and Quinney Professorship for Wildlife Conflict Management, 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 (station in the Department of Biology – Southern Utah University, Cedar City), Mr. Todd Black and Ms. Lorien Belton, Community-based Conservation Extension Specialists, Dr. David Dahlgren, Post-Doctoral Fellow, and Rae

Ann Hart, Assistant to an Executive, 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 provides up to $140,000 annually in funding and in-kind matches through June 30, 2011, to conduct the program. Additional funding of up to $160,000 a year is 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 $200,000 were entered into in 2008 to support local working group activities, project monitoring and evaluation.

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 (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).
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.

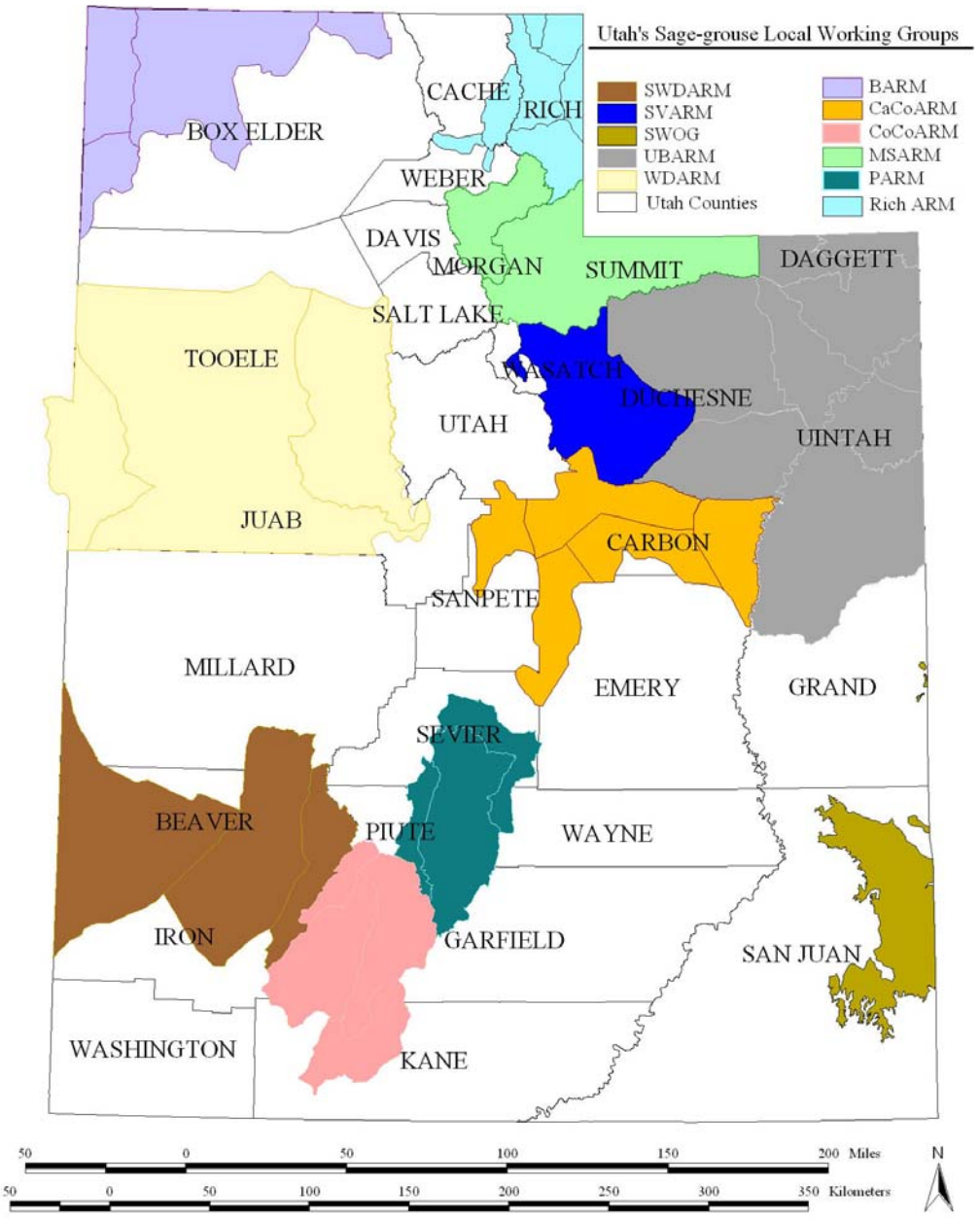

Figure 1. Utah Sage-grouse Conservation Areas, Utah Strategic Management Plan for Sage-grouse (UDWR 2009). (Note this report summarizes conservation actions completed to benefit greater sage-grouse. Thus no it does not include Gunnison sage-grouse conservation actions. This species inhabits San Juan County).

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. RICHCO is comprised of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals.

In 2008, 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.

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.

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. This adaptive plan is in effect until the year 2016. RICHCO partners not only reported on specific actions completed or addressed in 2008 but also identified steps to be taken to implement addition actions into subsequent years of the plan. Please note that if a strategy or an action number is missing from this report; or no comments have been provided it means that no action(s) were taken in 2008 towards its completion. 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/parm/PARMfnl-10-06-web.pdf

Conservation Strategies and Actions: 2008 Accomplishments

1. Strategy: By 2016 increase amount of breeding habitat in "good" condition 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.

Landowners Permittees and GIP partners are working with BLM to initiate a large scale restoration grazing system for various allotments in Rich County. (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph)

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

UDWR interseeded a crested wheat dominated stand with a forb/shrub mix on UDWR and BLM lands in Woodruff Coop.

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

See #1.1 Landowners and permeates are working with Utah Grazing Improvement Program (GIP) to initiate a large scale restoration grazing system for the northern part of Rich County.

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

Steps are being taken to ensure research and monitoring efforts continue in conjunction with Utah State University (USU, UDWR, QRM, BLM, USFS) to monitor the effects of various habitat actions (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph).

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.

SITLA renewed (10 years) 2,500 acres.

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

No action taken in 2008—no sagebrush was planted or plowed up and converted to agricultural production.

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

SITLA renewed (10 years) 2,500 acres. Group was informed about changes in the new 2008 farm bill which put all CRP at risk for re-enrollment.

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

No action taken in 2008 with CRM partners as no new ground was put into CRP.

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

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

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

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

No action taken in 2008 with CRM partners. Group was informed about changes in the new 2008 farm bill which put all CRP at risk for re-enrollment.

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.

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

20,000 feet of fencing was put up in the Middle Ridge allotment to allow for rest rotation grazing system. UDWR is working with the Woodruff Coop to produce better wintering conditions for sage-grouse and reduce competing grass species.

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

UDWR is working with the Woodruff Coop to produce better wintering conditions for sage-grouse and reduce competing grass species.

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

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.

No comments were given to BLM new IM but key sage-grouse habitat and prioritizations were given in this IM.

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.
BLM re-seeded Rabbit Creek fire in 2007/08 with seed mixture favorable to sage-grouse.

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.

BLM burned areas in Sage Hollow late fall of 2007 2-300 acres. Forest Service did controlled burns in the Saddle Creek area.

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.

UDWR plowed up a crested wheatgrass stand and interseeded with a forb/shrub mix on UDWR and BLM lands in Woodruff Coop. 45 acres of farm land were reclaimed east of Woodruff south of the Bear River in the Southern sub unit.

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

Deseret Land and Livestock (DLL) treated 500 acres on South Wasatch ridge in the southern sub unit.

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

Steps are being taken to ensure research and monitoring efforts continue in conjunction with Utah State University (USU, UDWR, QRM, BLM, USFS) to monitor the effects of various habitat actions (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph).

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

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

CRM partners are working on monitoring the effects of various treatments across the resource area. Steps are being taken to ensure research and monitoring efforts continue in conjunction with Utah State University (USU, UDWR, QRM, BLM, USFS) to monitor the effects of various habitat actions (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph).

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.

Steps are being taken to ensure research and monitoring efforts continue in conjunction with Utah State University (USU, UDWR, QRM, BLM, USFS) to monitor the effects of various habitat actions (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph).

5.7. Action: Develop springs/pipelines for livestock that are beneficial for and will not adversely affect crucial sage-grouse nesting and brood-rearing areas.

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.

Several presentations were given to the CRM partners throughout the year on sage-grouse biology, translocations, and research effort.

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.

CRM partners are still working on several methods to disseminate including the CRM web page, USU's community based conservation web page and newsletter. CRM partners conducted a field tour of the Sage Creek/New Canyon allotments to discuss GIP project.

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

USDA-WS flew selected polygons to search for leks and other volunteers conducted lek searches for new leks in 2008. USU continues research efforts with sage-grouse. UDWR flew the middle ridge searching for new leks. QRM (private landowners) conducted ground lek searches on private lands.

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

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

Steps are being taken to implement new grazing systems on (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph) to improve riparian areas and wet meadows. BLM did maintenance on 7 different grazing enclosures on riparian areas.

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

BLM did spraying in Big Creek, USFS sprayed areas on the North Rich allotment. Rich County is working in and around Bear Lake. Forestry and State lands did work (burning/spraying) in and around the lake shore (southwest corner of the lake).

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

No action taken in 2008—Duck Creek is scheduled for 2009 with the BLM.

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

Steps are being taken to implement new grazing systems on (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph) to improve riparian areas and wet meadows. BLM did maintenance on 7 different grazing enclosures on riparian areas.

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

Steps are being taken to implement new grazing systems on (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph) to improve riparian areas, artificial watering structures, present water catchments and wet meadows. Landowners have put in several thousand feet of pipe and water storage units east of Bear Lake and South Sub unit (wheatgrass hollow).

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

BLM did some work (check dams) late 2007 in the Twin Peaks and Rabbit Creek fire areas.

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.

Steps are being taken to implement new grazing systems on (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph) to improve riparian areas, artificial watering structures, present water catchments and wet meadows. Landowners have put in several thousand feet of pipe and water storage units east of Bear Lake and South Sub unit (wheatgrass hollow).

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

Steps are being taken to implement new grazing systems on (Middle Ridge, Black Mountain, South Eden, Monty Weston, Duck Creek, Big Creek, New Canyon, Sage Creek, North and South Randolph) to improve riparian areas, artificial watering structures, present water

catchments and wet meadows. Landowners have put in several thousand feet of pipe and water storage units east of Bear Lake and South Sub unit (wheatgrass hollow).

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

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

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

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.

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

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

CRM partners are working with USDA Wildlife Services to identify these areas.

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.

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

USU research continues in the area, no birds were discovered to have any diseases in 2008.

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.

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

11.3. Action: Install raptor deterrents when applicable.

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.

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.

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

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.

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

CRM and partners have identified some of these areas on BLM an private lands within the resource area.

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

This action is being implemented where possible.

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.

CRM partners are still working towards completing this action—on going.

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

No action taken in 2007 as no quality sage-grouse habitat was impacted by development.

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

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.

14. Strategy: By 2016, increase population and habitat monitoring efforts in Rich County. CRM is working with UDWR and other volunteers to increase monitoring and searching efforts and identifying and searching new areas.

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

CRM encourages public and private partners to employ existing techniques and increase knowledge of new techniques.

14.2. Action: UDWR biologists will coordinate with private partners to identify sage-grouse lek sites and count birds on private lands.

CRM is working with UDWR and other volunteers to increase monitoring and searching efforts and identifying and searching new areas.

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 is working with UDWR and other volunteers to increase monitoring and searching efforts and identifying and searching new areas.

14.4. Action: Provide, when possible, reimbursement for volunteers for mileage, etc.

USU received a grant for about 1k to support efforts of various CRM volunteers and will seek matching monies in 2009 to help defray expenses for various CRM members.

14.5. Action: Test dead sage-grouse for West Nile Virus and any other parasites/pathogens of importance.

No dead grouse were found.

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.

15.2. Action: Support recommendations that provide for temporal avoidance, minimization of tall structures, and avoid crucial habitat or use areas, where possible.

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

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

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

15.6. Action: Use directional drilling where feasible to minimize surface disturbance, particularly where will density exceeds 1:160 acres.

15.7. Action: Minimize pad size and other facilities to the extent possible, consistent with safety.

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

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

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

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

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

15.13. Action: Avoid aggressive, non-native grasses (e.g. intermediate wheatgrass, pubescent wheatgrass, crested wheatgrass, smooth brome, etc) in reclamation seed mixes.

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

15.15. Action: Minimize width of field surface roads.

15.16. Action: Avoid ridge top placement of pads and other facilities.

15.17. Action: Use low profile above ground equipment, especially where well density exceeds 1:160 acres.

15.18. Action: Avoid breeding/nesting season (March 1 – June 30) construction and drilling when possible in sage-grouse habitat.

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.

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

15.21. Action: Utilize well telemetry to reduce daily visits to wells, particularly where well density exceeds 1:160 acres.

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.

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

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

15.25. **Action:** Study, and attempt to quantify, impacts to sage-grouse from oil and gas development.

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.

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

15.28. Action: Share sage-grouse data with industry to allow for planning to reduce and/or mitigate for impacts.

15.29. Action: Update setbacks, mitigation requirements, and spatial and temporal avoidance recommendations as new information becomes available.

No action taken in 2008.

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

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.

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.

17.2. Action: Provide educational materials to local birding groups on appropriate lek viewing behavior.

17.3. Action: Discourage viewing of sensitive lek areas through access restrictions, increased law enforcement patrols, and effective use of trespass laws.

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.

On going.

18.2. Action: Participate in the Northern Region UPCD Regional Team to develop

On going.

18.3. Action: Develop research and/or monitoring protocols to address information gaps identified in this plan and in future adaptive planning efforts.

On going.

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.

On going.

Major Needs and Concerns

There are still concerns with the Rich group and the Duck Creek allotment, lawsuits and court rulings make it difficult to maintain local control. Further concerns are heightened as the group prepares to make significant changes to the Big Spring allotments with the Grazing Improvement Program. As this project progresses, and if it is implemented, there is significant need for intensive research and monitoring.

Summary of Sage-grouse Conservation Threats

In 2007, RICHCO identified and ranked major threats to sage-grouse conservation in Rich County (Table 6). This threat ranking is used by RICHCO to prioritize conservation actions. The RICHCO will review the threat ranking in 2009 to ensure immediacy.

Table 6. Relative importance/contribution of threats to sage-grouse populations in Rich County Coordinated Resources Management Sage-grouse Local Working Group Conservation Area. (L=low; M=medium; H=high; and VH=very high).

Threat	Reduced Population Size	Population Distribution	Reduced Breeding Habitat Quality	Reduced Summer/Late Brood-rearing Habitat Quality	Reduced Winter Habitat Quality	Reduced Connectivity of Seasonal Habitat Types	Reduced Connectivity of Populations & Sub-populations
Home & Cabin Development	M	M	M	M	L	M	M
Powerlines, Fences, & Other Tall Structures	H	L	M	L	L	M	M
Renewable & Non-renewable Energy Development	M	M	H	H	M	L	L
Roads	H	L	M	L	L	M	M
Drought & Weather	H	H	M	H	L	H	H
Hunting Pressure	L	M	-	-	-	-	H
Incompatible Fire Management Practices	H	H	H	H	H	H	H
Incompatible Livestock Grazing	H	H	H	H	M	H	H
Incompatible OHV Recreation	H	M	M	M	M	H	H
Invasive/Noxious Weeds	M	H	M	L	L	M	M
Parasites & Disease	M	M	-	-	-	-	H
Predation	M	M	L	-	-	-	M