

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

The Color Country Adaptive Resources Management (CCARM) Sage-grouse Local Working Group was organized in 2004 by Mr. Todd A. Black and Dr. S. Nicole Frey. Dr. Frey and Sarah G. Lupis served as the technical writers of the Plan itself. CCARM is comprised of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals.

a. Local Legal Authority

The Board of Commissions for counties in the Resource Area serves as the executive and legislative branches of local government. They have the authority to: 1) protect and promote the health, welfare, and safety of the people; 2) regulate land use, land planning, and quality and protection of natural resources; and 3) has duly adopted regulations and policies to exercise such authorities including the review and approval or denial of proposed activities and uses of land and natural resources. Currently, Garfield and Kane County Commissioners are rewriting their resource management plan. The following information was excerpted from Garfield County's Draft Resource Management Plan:

1. Garfield County desires to have effective coordination, formal participation and cooperation with agencies in planning endeavors as well as site-specific project implementation.
2. Garfield County will maintain a Public Lands/Natural Resources Committee, appointed by the County Commission. Public Land/Natural Resources Committee membership will provide information and expertise to the County Commissioners.
3. Garfield County desires to have professional, regular, and productive communication with all land management agencies. It is the County's desire to continue with improving the productivity of agency/county communication.
4. Garfield County desires to be provided the opportunity to enter into formal partnerships and agreements with land management agencies on all proposed projects that would affect the County.
5. Garfield County desires that traditional resource-based industries and activities return to a more balanced sustained-yield/multiple-use philosophy as described in specific resource chapters.
6. Garfield County desires to partner with land management agencies to maximize opportunities for traditional natural resource based industries as described in resource-specific chapters addressing traditional industries.

b. Status of Local Population

Plan Area

The Color Country Resource Area (Resource Area) is located in south-central Utah in Piute, Garfield, Sevier, and Kane counties (Figure 1). The Resource Area encompasses 4,956,258.7 acres. The majority of the Resource Area is managed by the USFS, BLM, the state of Utah, and private landowners. The Resource Area is defined by regional land features and habitat to the north and northeast, the Colorado River to the east, the Arizona to the south, and regional land features to the west. The Resource Area has been subdivided into three subunits, corresponding to sage-grouse breeding complexes. These breeding complexes are based on geographic boundaries and groupings of leks. Although movement between complexes is likely, the complexes represent discrete subpopulations of sage-grouse in the Resource Area. Precipitation ranges from 5-10 inches across the Resource Area, most of it falling during the winter months. Temperatures also vary greatly across the region. Piute County, in the northern portion of the Resource Area, has an average temperature in July of 85°F, while in Garfield County, to the south, the average temperature in July is 66°F.

Landownership

Much of the Resource Area is managed by the federal government (Table 11). For example, in Garfield County 43% of the land is managed by the BLM and 31% by the USFS, with only 4% of the counties land owned by private residents. In Kane County, over 80% of the land is federally owned while approximately 10% is privately owned. Much of the eastern portion of the Resource Area includes national parks and monuments, and has little sage-grouse habitat.

Table 11. Landownership in Utah's Color Country Adaptive Management Sage-grouse Local Working Group Resource Area, 2007.

| Landowner | Area (acres) | % of Resource Area |
|---------------------------|---------------------|---------------------------|
| Bureau of Land Management | 2,410,369 | 50 |
| BLM Wilderness | 21410.3 | < 1 |
| National Recreation Areas | 514719.2 | 11 |
| Native American Tribes | 543.99 | < 1 |
| National Park Service | 76,124 | 2 |
| Private | 406,477.9 | 8 |
| State of Utah | 185,941 | 4 |
| US Forest Service | 1,160,209 | 24 |
| Water | 75836 | 2 |

Sage-grouse Population Status and Distribution

Sage-grouse populations in the Color County area have been variable in recent history. In the study area, a review of three lek clusters defined by the region of their location, illuminates the fluctuations evident in sage-grouse populations (Figure 8). However, it is clear that two of the three illustrated lek clusters have experienced an obvious downward trend over the last 20 years. Alton Sink Valley has historically never had a large number of males in attendance. With

steadily lower numbers, there is concern that this lek could blink out of existence if current trends persist. All three lek groups experienced a decline in attendance in 2002 and 2003 presumably due to extreme drought conditions in the region.

Many of the leks are located in Panguitch Valley in the center of the Resource Area. Their distribution in the Resource Area is limited by natural habitat conditions that are unsuitable for sage-grouse. In 1999, the UDWR mapped the extent of seasonal habitat types present in the Resource Area. These maps can be found in the LWG Plan.

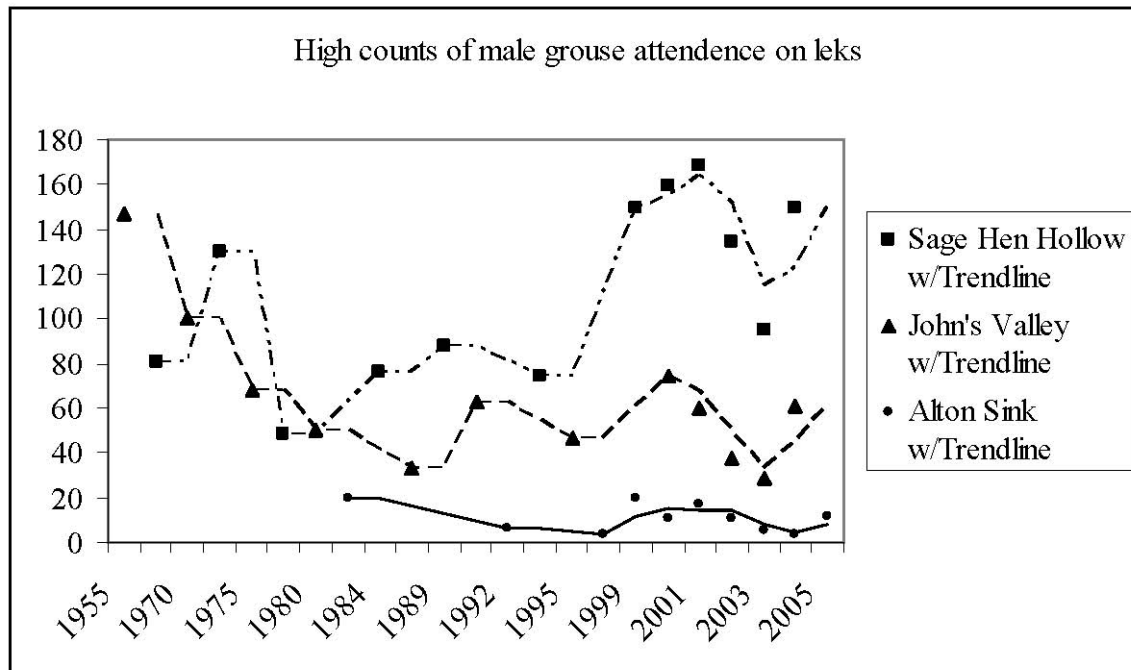


Figure 8. Male grouse attendance counts at each lek cluster in the Color Country Adaptive Resources Management Sage-grouse Local Working Group Resource Area, 1955-2005. The trend line represents a 5-year moving average.

c. Key Ecological Indicators and Threats

In a step-wise fashion, CCARM participants identified key ecological aspects (KEAs) of sage-grouse ecology and biology and associated indicators (to measure KEAs), determined and ranked the range of variation for each KEA, and assessed the current and desired conditions for each KEA (Table 12). They then identified and ranked potential threats (Table 13).

Table 12. Greater sage-grouse key ecological aspects identified in Utah's Kane, Garfield, Sevier, and Piute Counties, Color County Adaptive Resources Management Sage-grouse Local Working Group, 2007. The 'Key Attribute' and 'Indicator' cells' are those defined by Greater Sage-grouse guidelines (Connelly et al 2000). The shaded cells represent the current condition as recorded by local working group members of a particular attribute and indicator as it relates to sage-grouse habitat and life history requirements.

| Resource | Area Category | Key Attribute | Indicator | Poor | Fair | Good | Very Good | Current Indicator Status | Current Rating | Desired Rating | Date of Current rating | Date for re-evaluation |
|---------------|-------------------|---|--|--|---|---|---|--------------------------|----------------|----------------|------------------------|------------------------|
| Color Country | Landscape Context | Connectivity of key habitat types | Condition of surrounding natural vegetation | isolated patches of sage-grouse habitat; encroachment by invasive species and/or development; or area heavily disturbed | <i>healthy habitat patchily distributed; adjustment of disturbance regimes may restore most of the communities to a desired quality</i> | healthy sagebrush community fairly distributed throughout the study area and/or disturbance regimes not in place in all areas to maintain a healthy community | healthy sagebrush community well distributed with disturbance regimes in place to maintain this community | Good | Fair | Good | Feb-06 | TBD |
| Color Country | Landscape Context | Connectivity of Sagebrush Communities | Distance to other suitable or potential habitat | Disjointed small patches of habitat isolated from other patches and many barriers to grouse movements between communities. | Small patches of habitat isolated from other patches or there are many barriers to grouse movements between communities | <i>Large patches of habitat are becoming fragmented, barriers to grouse movements are increasing</i> | <i>Communities consist of large tracts of unbroken habitat and few barriers limiting sage-grouse movements between communities</i> | Good | Good | Very Good | Feb-06 | TBD |
| Color Country | Landscape Context | Landscape pattern and structure | Diverse age class distribution of sagebrush-steppe habitat and understory. Full range of sagebrush community species across landscape. | Majority of sagebrush is mature and decadent with little to no understory | Large tracts of sagebrush of a single age-class with limited community diversity | <i>Large tracts of sagebrush of a few age-classes or has a wide distribution of age-classes with limited understory and vegetative diversity</i> | Wide distribution of sagebrush age-classes with productive understory and wide diversity of sagebrush community plant species | Good | Good | Good | Feb-06 | TBD |
| Color Country | Condition | Breeding Quality (Leks and nesting) | Proximity to sagebrush/cover and openness on lek; nesting/early brood rearing habitat quality | lek locations and breeding habitat are highly disturbed; immediately adjacent habitat not acceptable for nesting/breeding | lek locations and breeding habitat have some disturbance and brood-rearing habitat not adjacent to lek location. | <i>Lek locations and breeding habitat are in adequate condition; brood-rearing habitat not adjacent to lek location.</i> | Active lek locations are in close proximity to nesting and brood-rearing habitat; brood-rearing habitat has diverse composition with access to water/moisture; brood-rearing habitat adjacent to lek location | Good | Good | Good | Feb-06 | TBD |
| Color Country | Condition | Summer/Late brood-rearing habitat quality | Sage canopy cover; height, and composition | High predation mortality; little to no grass/forbs; sagebrush and shrubs sparse. | <i>Average predation mortality (by research reports); grass/forbs <10% of habitat</i> | <i>Average predation mortality (by research reports); grass/forb 10 - 15% of habitat</i> | Low predation mortality; grass/forb >15% of habitat. | Good | Fair | Good | Feb-06 | TBD |

| | | | | | | | | | | | | |
|---------------|-----------|-------------------------|--|--|---|---|---|------|------|-----------|--------|-----|
| Color Country | Condition | Winter Habitat Quality | Sagebrush canopy cover and height | canopy cover <10%; sagebrush decadent | canopy cover 10 - 15%; sagebrush in poor condition or under 12" | canopy cover 15 - 20%; age stand diversity includes many patches of decadent sagebrush | canopy cover >20%; mosaic age stand diversity | Good | Good | Very Good | Feb-06 | TBD |
| Color Country | Size | Population Distribution | Distribution of leks | few leks within 1 focus area or clumped in one portion of the focus area | active leks well distributed in 1 or 2 of the focus areas but other focus areas are in poor condition | active leks well distributed throughout all focus areas | active leks well distributed throughout all focus areas; new leks found/ historic leks re-established | Good | Good | Very Good | Feb-06 | TBD |
| Color Country | Size | Population Size | number of known active leks | <50% of all known leks are active | 50 - 70% of all known leks are active | 70 - 90% of all known leks are active | 90% of all known leks are active | Good | Good | Very Good | Feb-06 | TBD |
| Color Country | Size | Population Size | Number of males counted on active leks | <150 males total among all leks | 150 - 225 males total among all leks | 226 - 300 males total among all leks | >300 males total among all leks | Good | Fair | Good | Feb-06 | TBD |

Table 13. Relative importance/contribution of threats to sage-grouse populations in Utah’s Kane, Garfield, Sevier, and Piute Counties, Color Country Adaptive Resources Management (CCARM) Sage-grouse Local Working Group, 2007. Threats are described in the “Threat Analysis” section of this Plan. Ranks are defined according to TNC (2005).

| Threat | Reduced Population Size | Population Distribution | Reduced Lek Habitat Quality | Reduced Nesting/Early Brood-rearing Habitat Quality | Reduced Summer/Late Brood-rearing Habitat Quality | Reduced Winter Habitat Quality | Reduced Connectivity of Seasonal Habitat Types | Reduced Connectivity of Populations & Sub-populations |
|---|-------------------------|-------------------------|-----------------------------|---|---|--------------------------------|--|---|
| Enhanced native and domestic predators | Medium | Low | Low | High | High | Medium | High | High |
| Recreational use | Medium | Medium | Medium | High | High | High | Medium | Medium |
| Invasive/alien vegetation species | High | High | Medium | Very High | High | Medium | High | High |
| Concentrated wildlife and/or livestock use | High | Medium | Medium | High | High | Medium | Medium | Medium |
| Fire and Vegetation Management | High | Medium | Medium | High | High | High | High | High |
| Development of roads or utilities | High | Medium | Low | Very High | High | High | High | High |
| Lack of communication among public parties | Medium | Medium | Low | High | Medium | Medium | Medium | Medium |
| Diseases and parasites | Medium | Medium | Low | Medium | Medium | Medium | High | High |
| Alternative Land Uses (mining, wind power, water development) | High | High | Medium | High | High | High | High | High |
| Dramatic Weather Events | High | Medium | Medium | High | High | High | High | High |

d. Status of Conservation Strategies and Actions

CCARM participants identified several conservation strategies and actions that could be implemented to enhance greater sage-grouse populations. Here CCARM partners report on specific actions completed or addressed in 2006/2007 but also identified steps to be taken to implement additional actions into subsequent years of the plan. If a strategy or an action number is missing from this report; it means that no action(s) were taken in 2006/2007 towards its completion. To access a copy of the CCARM conservation plan visit the following web site address: <http://utahcbcp.org/files/uploads/color/CoCARM-finalplan.pdf>. The CCARM LWG will be reviewing and updating their Plan in early 2009

1. **Strategy:** Reduce threat of predators on sage-grouse over ten-year period.
 - 1.1 **Action:** Determine predator community composition and depredation rate.
Status: A study to determine the predator community in Sink Valley was initiated in 2007.
 - 1.2 **Action:** Determine brood-rearing success in each focus area annually.
Status: A radio-telemetry project was initiated in 2005. Within this project we are studying brood-rearing success of collared females. Additionally, we are recording any sighting of broods during the course of conducting telemetry data.
 - 1.3 **Action:** Support current predator management efforts by other groups or agencies in the focus areas

Status: The group supports predator management efforts conducted by USDA/APHIS/WS in the focus areas. Addition management has been requested.

2. **Strategy:** Improve age distribution of plants within sagebrush-steppe communities by 2016.
 - 2.1 **Action:** Identify and prioritize target areas needing improvement.

Status: The group has determined that Sink Valley and Hoyt's Ranch are the 2 priority areas for sagegrouse conservation.
 - 2.2 **Action:** Coordinate among agencies and landowners to fund implementation of projects and monitoring.

Status: Interagency efforts have resulted in several projects in the Sink Valley area. The BLM initiated a large project which USU Extension has studied. Additionally, NRCS has overseen a landowner project conducted to improve sagebrush.
 - 2.3 **Action:** Monitor the response of sage-grouse to changing habitat conditions.

Status: A radio-telemetry project was initiated in 2005. In part, this research project monitors the response of grouse to habitat treatment projects.

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.

Status: Throughout the CCARM area, DWR and BLM have identified several areas that need habitat improvement to improve water sources.
 - 3.2 **Action:** Consider new water developments that are multi-use and multi-purpose.

Status: NRCS, BLM and UDWR consider new or improved water conditions with each appropriate project. BLM land use permit renewals in this region considered grouse water use.

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.

Status: On-going
 - 4.2 **Action step:** Identify regional groups and their contact person.

Status: A list of regional groups was created during a meeting. Several group members assisted in contacting a representative from each group. These people also get emails announcing the next meeting.
 - 4.3 **Action:** Develop fact sheet to distribute to special interest groups.

Status: A fact sheet has been created and is distributed at every "event", such as the County Fair, Audubon Society Field Day, Upper Sevier Watershed Day, etc. Furthermore, this sheet is provided at any interagency meeting, RC&D meetings, and agency field trips.
 - 4.4. **Action:** Host open houses, field tours, and presentations.

Status: Field tours, organized and initiated by the group, have been conducted several times each year to investigate potential projects or investigate the status of an ongoing project.
 - 4.4 **Action:** Distribute annual reports to local management agencies, county commissioners, and other interested parties.

Status: Annual reports of agency projects are distributed among our group. Additionally, annual reports of research are disseminated at the group meeting as well as post-mailed to county commissioners and other parties.
 - 4.6 **Action:** Proactively seek partnerships when developing new projects.

Status: New projects are presented at each meeting, where discussion and collaboration to assist or improve the project occur.

- 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.
- Status:** Via NRCS employees and county Extension employees, landowners are continuously surveyed to gather sage-grouse locations and habitat use information. This information is gathered at the local working group meetings and entered into the DWR database as well as USU Extensions records.
- 5.2 Action:** Investigate possible new lek sites based on local reports.
- Status:** Independently, group members investigate local reports. This has expanded our information regarding habitat use and distribution, but has not resulted in new lek sites.
- 5.3 Action:** Survey for new lek sites during lek counts and survey historic sites for new activity.
- Status:** Each spring, UDWR employees survey historic sites and possible sites that were reported by landowners for new leks.
- 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.
- Status:** This is an active discussion in our group. The group has discussed possibilities of translocation after the Alton Mine has been installed, if necessary, to improve the Sink Valley grouse population.
- 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.
- Status:** NRCS is actively engaged in the working group process and utilizes the grouse management plan when assisting with landowner project development.
- 7.2 Action:** Regularly discuss new developments and alternative land uses in management agencies at local working group meetings.
- Status:** The group reports on new developments at each meeting and determines what actions the group should take to support the development or provide comments.
- 7.3. Action:** Involve local county and city planning commissions in meetings.
- Status:** Ongoing.
- 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.
- Status:** Within the local working group area, BLM, UDWR, NRCS has identified several areas that could respond well to improvements in grazing distribution. These projects have been initiated in 2007.
- 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.
- Status:** The BLM initiated a large multi-year project in Sink Valley and Mill Creek to remove invasive juniper and pinyon pines from grouse habitat. Additionally, a landowner has begun a similar project on his property just north of the town of Alton.
- 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.

Status: UDWR and BLM have grouped together to be more efficient with reseeding efforts post-treatment.

e. Habitat Improvements and Completed Conservation Actions

Over the past several years, the BLM and UDWR participated in several projects to improve degraded areas in an effort to improve sagebrush habitat. Future endeavors will continue to improve sagebrush-steppe habitat conditions, including reducing encroachment by pinyon and juniper trees, improving sagebrush age-class distribution, and improving landscape connectivity (Table 14, Figure 9).

Table 14. Habitat improvement projects implemented to mitigate sage-grouse threats identified by the Color Country Adaptive Resources Management Sage-grouse Local Working Group, 2005-2007.

| ID | REGION | FY Start | FY Complete | Project Title | Treatment Type | Threat Code | Acres |
|-----|--------|----------|-------------|---|---|----------------|-------|
| 53 | SR | 2006 | 2006 | SITLA Asay Creek Stream enhance | plantings and stream bank stabilization | 1, 16 | 227 |
| 458 | SR | 2007 | 2007 | Tebbs Hollow/Mud spring PJ removal | bobcat brush saw | 1, 2, 7 | 456 |
| 340 | SR | 2006 | 2006 | Bramall Seed Contribution | disk and drill seed | 9 | 114 |
| 305 | SR | 2006 | 2006 | Bunting discretionary seeding | PJ push and re seed | 7, 9 | 122 |
| 189 | SR | 2007 | 2007 | 5 mile Hollow sagebrush restoration Y-2 | thin lop and scatter PJ with hand crew | 1,2, 18 | 1369 |
| 189 | SR | 2006 | 2006 | 5 mile Hollow sagebrush restoration Y-1 | thin lop and scatter PJ with hand crew | 1,2, 18 | 1541 |
| 188 | SR | 2006 | 2006 | Alton/Mill Creek sagebrush restoration | thin lop and scatter PJ with hand crew | 1, 2, 3, 7, 18 | 991 |
| 121 | SR | 2007 | 2007 | Sanford Sage-grouse 2 | one way harrow broadcast seed | 1, 2, 3, 7 | 488 |
| 120 | SR | 2006 | 2007 | Alton Sink Valley | Bullhog broadcast seeder | 1, 2, 3, 7, 18 | 821 |
| 119 | SR | 2006 | 2006 | P-Hill one-way harrow | two way harrow broadcast seed | 1, 2, 7 | 1784 |
| 445 | SR | 2007 | 2007 | Bramall sage-grouse Year 1 | one way harrow broadcast seed | 1, 2, 7 | 2146 |
| 882 | SR | 2005 | Pending | Tebbs Hollow P/J project | Bullhog to eliminate encroaching P/J | 1, 18 | 1288 |
| 575 | SR | 2007 | Pending | Limekiln drainage | 2-way Dixie harrow | 1, 2, 7 | 494 |

| | | | | | | | |
|-----|----|------|---------|---|---|----------------|-------|
| | | | | NE Panguitch | and seeding of black sage | | |
| 400 | SR | 2007 | Pending | Deer Creek P/J removal | hand cutting lop and scatter | 7 | 9697 |
| 901 | SR | 2007 | Pending | Five Mile Hollow sagebrush restoration Year 3 | thin/lop and scatter or bullhog | 1,2, 18 | 6464 |
| 900 | SR | 2007 | Pending | Alton/Mill Creek sagebrush Restoration Year 3 | thin/lop and scatter or bullhog | 1, 2, 3, 7, 18 | 4248 |
| 900 | SR | 2007 | Pending | Alton/Mill Creek sagebrush Restoration Year 3 | thin/lop and scatter or bullhog | 1, 2, 3, 7, 18 | 161 |
| 883 | SR | 2007 | Pending | Five Mile Habitat Restoration Complex | Dixie harrow, anchor chain, bullhog, thin/lop and | 1,2, 18 | 33925 |

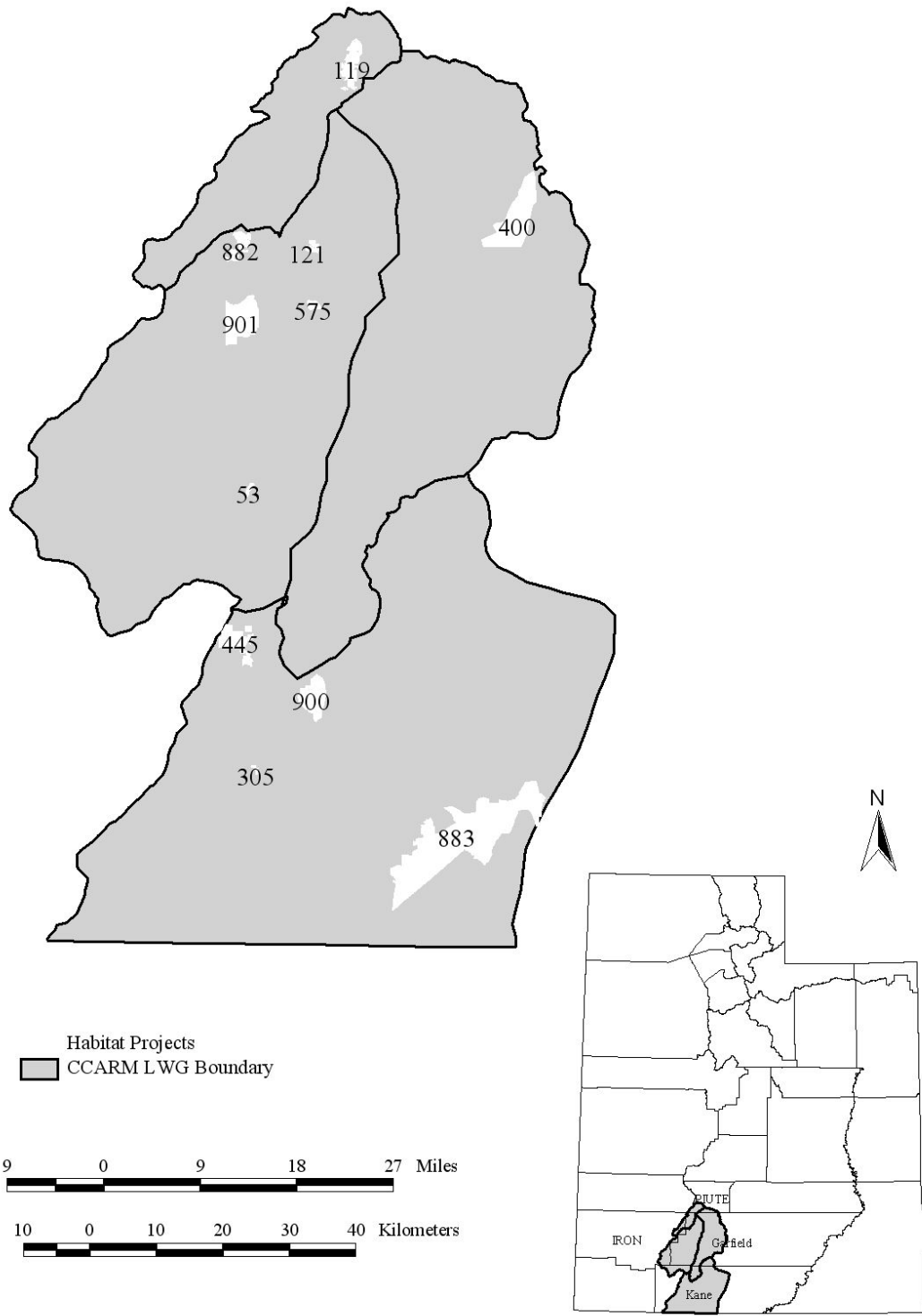


Figure 9. Location of habitat improvement projects completed to mitigate sage-grouse threats, Color Country Adaptive Resources Management Sage-grouse Local Working Group, 2004-2007.