

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

The Parker Mountain Adaptive Resource Management Local Working Group was organized in 1998 by Terry A. Messmer in 1998. Todd A. Black took over facilitation duties in 2003. Sarah Lupis has served as the technical writer and compiler of the Plan. PARM is comprised of state and federal agency personnel, representatives from local government, non-profit organizations, academic institutions, private industry, and private individuals. Please refer to the PARM Plan (<http://utahcbcp.org/files/uploads/parm/PARMfnl-10-06-web.pdf>) for a complete list of LWG participants.

a. Local Legal Authority

Commissions for Wayne, Piute, and Sevier counties serve 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 of these counties, 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. In addition, these counties promote County-to-community, community-to-community and agency-to-County coordination, cooperation, and communication.

b. Status of Local Population

Plan Area

The Parker Mountain Resource Area is located in South/Central Utah in Wayne, Piute, and Sevier counties (Figure 1). The Resource Area encompasses 1,789,644 acres (3,226.3 miles²) managed by the USFS, BLM, SITLA, and private landowners. The Resource Area is defined by the Aquarius Plateau to the south, the Fish Lake area to the north, and the Grass Valley Koosharem Valley area to the west. The Resource Area has been subdivided into 3 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.

The Resource Area is characterized by hot summers and cold winters. According to National Climate Data Center records collected Loa from 1948 to 2005, July is the hottest month with an average high temperature of 82.5° F; winter lows reach 7.5° F in January. The Resource Area is a primarily a dry area, receiving an average of only 7.5 inches of precipitation annually.

Landownership

Most of the Resource Area is public land; less is in private ownership (Table 19). The majority of the private land is located primarily in the Parker Mountain sub unit of the Resource Area and owned by SITLA. Land managed by the USFS are located in Fish Lake and Parker Mountain sub units of the Resource Area, encompassing the Fish Lake National. The BLM manages land

throughout the Resource Area and additional small parcels of land managed by SITLA are scattered throughout the Resource Area.

Table 19. Landownership in the Parker Mountain Adaptive Resources Management Sage-grouse Local Working Group Resource Area, 2007.

Landowner*	Area (acres)	Area (Miles²)	% of Resource Area
Bureau of Land Management	644,996.2	1007.8	36.1
Native American Tribes	668.6	1.0	<1
National Park Service	123,401.3	192.8	6.9
Private	130,182.9	203.4	7.3
State Parks/Wildlife	1,539.1	2.4	<1
State Trust Lands Administration	194,170.2	303.4	10.9
US Forest Service	687,337	1,704	38.4
Total	1,789,644	3,427.2	
* Water adds and additional 7,349.9 acres (11.5 mi ²) and represents 0.4% of the Resource Area.			

Sage-grouse Population Status and Distribution

Accounts from pioneers, trappers, and explorers of the Resource Area indicate that sage-grouse were historically abundant in the area. Stories of sage-grouse darkening the sky to stories of grouse numbers getting fewer and fewer are fairly common when talking to the local residents depending on their age and how long they have lived in the area. One common thread among the locals is that during the winter of 1982-83 many of the sage-grouse died due to starvation or were easily predated upon by eagles due to the significant snow fall during that winter.

The UDWR began using lek counts to monitor sage-grouse populations in the Resource Area in 1967 (Figure 12). That year, a total of 302 male sage-grouse were counted on 8 leks. During these early census years, the locations of only a few leks were known to UDWR biologist. In 1972, 12 leks in the Resource Area were counted for a total of 311 males. The estimated spring population size in 1972 was 3415 adult birds. Sage-grouse population data varied from year to year for the next 25 years mainly due to man power and snow levels. Due to these inconsistencies and the need for data collection, since 1998, a more concerted effort was put forth by participants of the PARM group. This effort has lead to the discovery of several new leks in the Resource Area and much better consistency in counting all known leks. Since 2004, the PARM group as a unit has conducted lek surveys over a 2 day period counting all known leks each of the 2 census days. The total number of males counted on leks during the past 4 years has averaged 830 total males (Figure 13).

The number of active leks can also be used to index sage-grouse population trends. In an attempt to avoid bias due to monitoring effort, only years when >12 leks were counted were included in this analysis (Figure 14). The historical population high of 2006 is still apparent and the current population trend appears to be in an upward cycle. This indicates that while the number of males

counted on leks in the Resource Area is increasing, more leks have been found. In fact, 24 total leks were counted in 2006, more than were ever counted in the Resource Area (range of data below= 12-17).

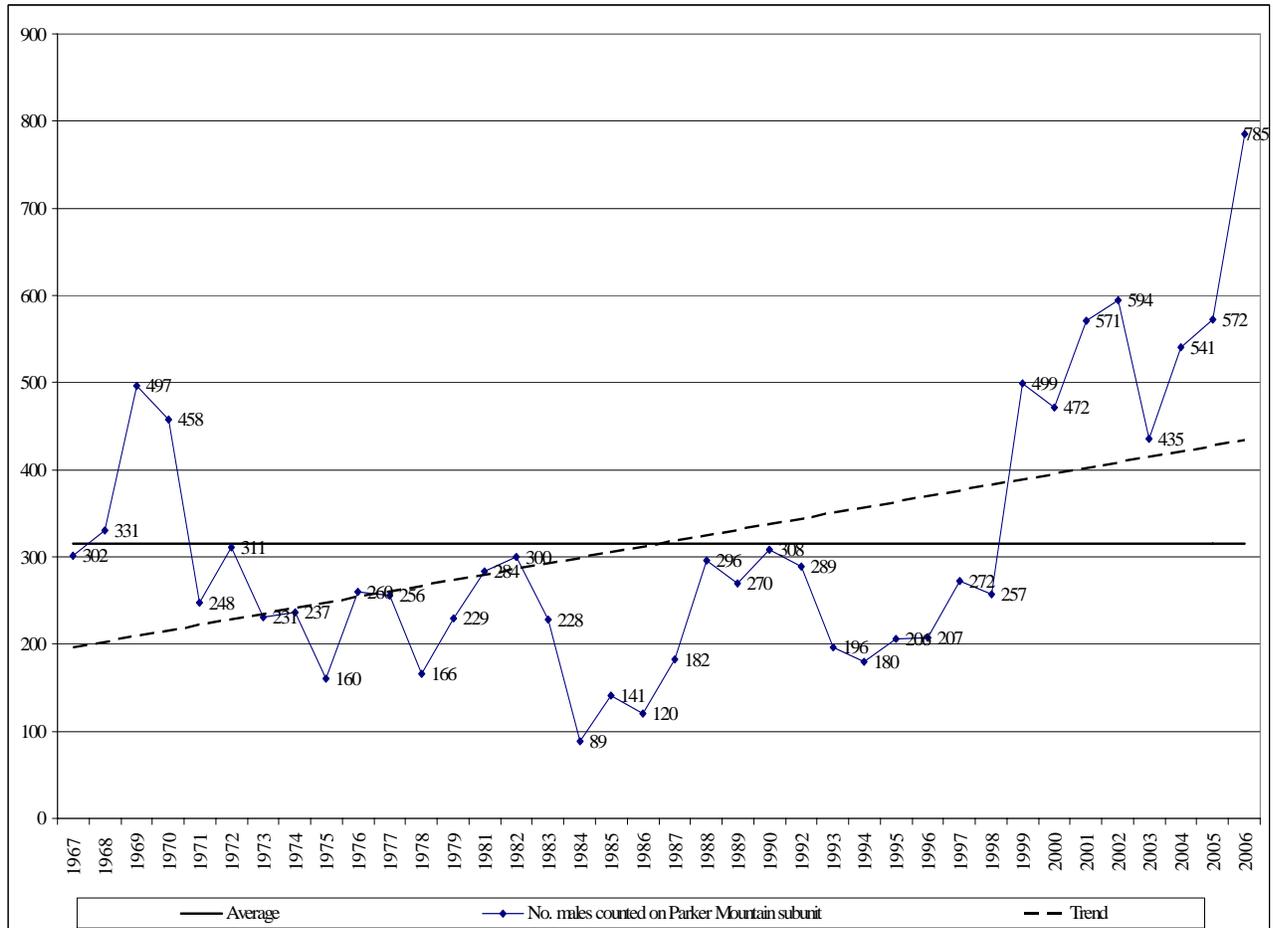


Figure 12. Maximum total number of males counted on the Parker Mountain sub unit and the average number of males attending leks in the Parker Mountain Adaptive Resources Local Sage-grouse Working Group Resource Area, 1972-2006.

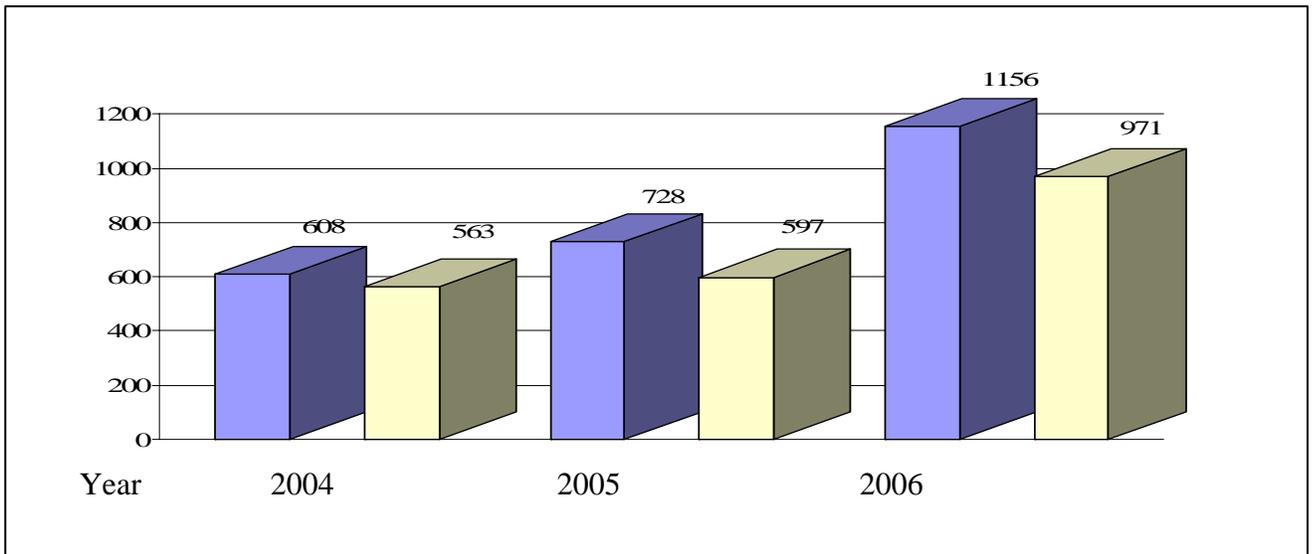


Figure 13. The total number of males counted on all known leks since the Parker Mountain Adaptive Resources Management Local Sage-grouse Working Group started a combined counting effort. The light color shows the number of males on leks counted in the Parker Mountain subunit, the darker color shows the total number of males counted on all leks.

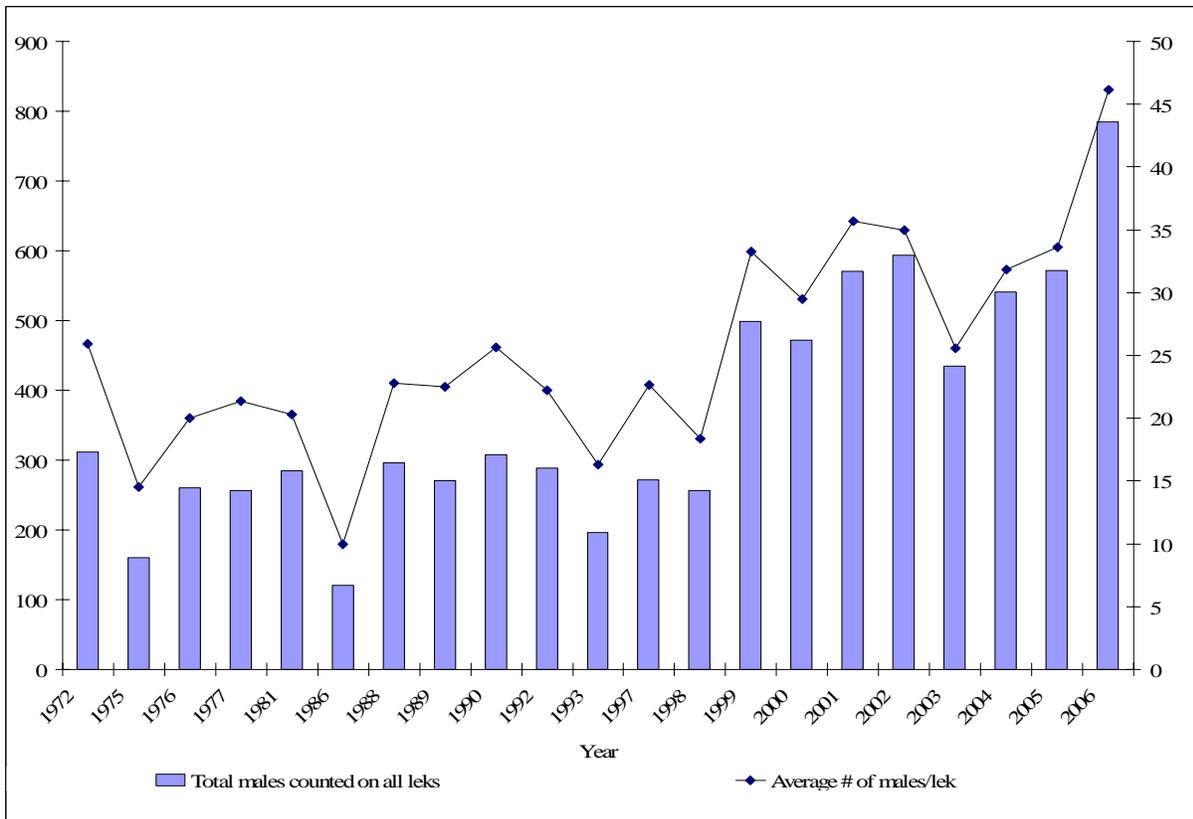


Figure 14. The number of males per lek in the Parker Mountain Adaptive Resources Management Greater Sage-grouse Local Working Group area, 1972-2005. In years where >11 leks were counted. Also show are the average number of males attending these leks.

Sage-grouse seasonal habitat types in the Resource Area were mapped by the UDWR in 1999. The UDWR Big Game Range Trend project has been monitoring sites throughout the Resource Area to track changes in vegetation composition, structure, and diversity. Although these sites were placed in areas used by big game, where they overlap with seasonal habitat use by sage-grouse, they can provide information about vegetation and habitat conditions in those areas in a general sense. Data collected at these sites are summarized and available at: <http://www.wildlife.utah.gov/range/>.

c. Key Ecological Indicators and Threats

PARM 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 20). They then identified and ranked potential threats (Table 21).

Table 20. Greater sage-grouse key ecological aspects identified in Utah's Wayne, Piute, and Sevier Counties, Parker Mountain 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
Parker Mountain	Landscape Context	Connectivity of key habitat types	Condition of surrounding natural vegetation	Used habitat patches are sparse and dispersed creating barriers between used habitat patches.	Used habitat patches are isolated and narrowly connected.	Habitat patches are of generally good and close proximity, but with some fragmenting features.	<i>All habitat patches are within a similar matrix and functionally connected.</i>	Sage-grouse year round habitat in the PARM AREA is generally well connected but has some fragmentation. Sage-grouse are able to move between seasonal habitats within the Resource Area	Very Good	Very Good	Jan-06	Jan-11
Parker Mountain	Landscape Context	Connectivity of Populations & Sub-populations	Distance to other populations or subpopulations during the yearly movement patterns of the sage-grouse	Population does not interact with any other population(s).	Next adjacent population/subpopulation are between 20-35 miles away.	Next adjacent population 12-20 mi away.	<i>Next adjacent population less than 12 miles away with occasional to regular mixing of individuals.</i>	Connectivity to other populations seems good based on radio-telemetry studies in the area.	Very Good	Very Good	Jan-06	Jan-11
Parker Mountain	Condition	Lek habitat quality.	Proximity to adequate sagebrush and openness on lek.	No appropriate cover w/in 400 m of most leks; significant encroachment of vegetation that would obscure visibility of the grouse on the leks sites.	Dispersed patches of sagebrush cover w/in 300 m of lek; some encroachment of vegetation that would obscure visibility of the grouse on the leks sites.	Large patches of sagebrush or other cover w/in 200 m of lek; with little encroachment of vegetation that would obscure visibility of the grouse on the leks sites	<i>Large patches of sagebrush or other cover less than 100 m of lek with no encroachment of vegetation that would obscure visibility of the grouse on the leks sites</i>	There is variability across the entire Resource Area. Most leks are in good condition.	Very Good	Very Good	Jan-06	Jul-11
Parker Mountain	Condition	Nesting and early brood-rearing habitat quality.	Sagebrush canopy cover and density; understory composition; proximity to open patches dominated by herbaceous vegetation.	Inadequate sagebrush cover/density; little perennial grasses or forbs in dense sagebrush with no openings.	Inadequate or high sagebrush cover/density; poor perennial grass/forb cover in sagebrush with limited openings.	<i>Adequate sagebrush cover/density; some perennial grasses/forbs in sagebrush with good perennial grass/forb content in openings.</i>	High stature grasses in shrublands; dense cover; high species richness; a matrix of open patches that includes mesic sites.	Most areas are in Good condition during a "normal" year and look better in wet years	Good	Good	Jan-06	Jul-11
Parker Mountain	Condition	Summer/Late Brood-rearing Habitat Quality	Sagebrush canopy cover and density; understory composition; proximity to open patches and mesic sites and aspen sites	Little or no shrub land cover/density; little perennial grasses or forbs in dense sagebrush with no open patches or mesic sites.	Little or high shrub land cover/density; poor perennial grass/forb cover in sagebrush with limited openings and mesic sites or alfalfa fields.	<i>Open shrub land (5-10%) some perennial grasses/forbs in sagebrush with good perennial grass/forb content in openings; some mesic and aspen sites.</i>	Open shrub lands greater than 50% grasses/forbs dense cover in mesic and aspen sites; high species richness; a matrix of open patches and many mesic sites.	In the high end of fair--most sites look pretty good. As you get higher elevation on the mountain the potential exists to be very good.	Good	Good	Jan-06	Jul-11

			dominated by herbaceous vegetation.									
Parker Mountain	Condition	Winter Habitat Quality	Sagebrush canopy cover and height.	Majority sparse sagebrush cover or very small patches or majority very dense and tall (i.e. "decadent"); sagebrush frequently covered by snow.	Low stature and/or sparse sagebrush cover on westerly and southerly slopes and drainages or majority very dense and tall (i.e. "decadent"); sagebrush often covered by snow.	Less than 10% canopy cover of sagebrush on southerly and westerly aspects and few dense patches available; sagebrush rarely covered by snow.	<i>Widely distributed winter habitat throughout the Resource Area; canopy cover 10-30% sagebrush on southerly and westerly aspects w/avg. of 10" above snow depth on >5% slopes; dense sagebrush cover in drainages.</i>	Winter habitat in very good condition.	Very Good	Very Good	Jan-06	Jul-11
Parker Mountain	Size	Population Distribution	Distribution and number of leks	Allow no Less than 15 active leks on the parker subunit and no less than 80% of the total and no less then 5 of the Fish Lake subunit and no less then 2 on the Grass Valley subunit	16-17 active leks on the parker subunit 5-9 on the Fish Lake subunit and 3-5 on the Grass Valley subunit	18-19 active leks on the parker subunit. 10-15 on the Fish Lake subunit and 6-8 on the Grass Valley subunit	<i>20 + Active leks and at least 50% of the total number of leks in the PARM Resource Area. 16+ leks on the Fish Lake subunit and 9+ on the Grass Valley subunit</i>	Currently there are 19 active leks and one pending in the Parker Mtn. subunit with one pending with a count in 2006.	Good	Very Good	Dec-05	May-08
Parker Mountain	Size	Population Size	3-year running average maximum number of males counted on leks	<300	301-625	626-1,000	1,000+	The lek counts appear to be on an incline. Group participation in lek counts is key and critical to good reliable information.	Very Good	Very Good	Sep-05	May-08
Parker Mountain	Size	Population Size	Number of active leks	<23	24-35	36-60	60+	New leks are being located each year--based on 3 consecutive years of counting lek numbers will likely go up	Good	Very Good	Sep-05	May-08

Table 21. Relative importance/contribution of threats to sage-grouse populations in Wayne, Piute, and Sevier Counties, Parker Mountain Adaptive Resources Management (PARM) Sage-grouse Local Working Group Resource Area. Threats are described in the “Threat Analysis” section of this Plan. Rankings are as follows: L=low; M=medium; H=high; and VH=very high. Ranks are defined according to TNC (2005).

Threat	Aspects of Sage-grouse population in the PARM Resource Area						
	Reduced Population Size	Population Distribution	Reduced Lek Habitat Quality	Reduced Brood-rearing Habitat Quality	Reduced Winter Habitat Quality	Reduced Connectivity of Seasonal Habitat Types	Reduced Connectivity of Populations & Sub-populations
Powerlines, Fences, & Other Tall Structures	M	M	M	L	M	H	H
Natural resource exploration and development	H	H	M	H	H	VH	VH
Grazing practices the are detrimental to the habitat (domestic/wild)	H	H	L	H	H	M	M
Drought & Weather	H	H	L	H	M	M	M
Lack of proper range management	L	M	L	H	M	M	M
Hunting Pressure	L	L	L	L	L	L	L
Altered Fire Regimes	L	L	M	M	L	H	M
Livestock Grazing	L	L	L	H	L	L	L
Incompatible OHV Recreation	L	M	L	L	L	M	M
Invasive/Noxious Weeds	M	M	M	VH	H	M	L
Parasites & Disease	VH	VH	L	L	L	L	H
Extraordinary Predation	VH	H	L	L	L	L	M
Vegetation Management	H	M	H	H	H	H	M
Pinyon-Juniper Encroachment	M	M	M	M	M	M	M
Inability to maintain local control and input	H	H	H	H	H	H	H

d. Status of Conservation Strategies and Threats

This report summarizes the status of the efforts made by individual and partners to address threats and strategic actions identified in the PARM Greater Sage-grouse Local Conservation Plan October 2006. This adaptive plan is in effect until the year 2016. PARM partners not only reported on specific actions completed or addressed in 2006/2007 but also identified steps to be taken to implement addition actions into subsequent years of the plan. Please not that ff 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. For the complete list of threats identified by the PARM group, see page 64 of the conservation plan located on line at <http://utahcbcp.org/files/uploads/parm/PARMfml-10-06-web.pdf>

1. Strategy: By 2011, assess pinyon-juniper stands in the Fish Lake subunit.

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

Status: Dixie harrow to treat 5000 acres (7 mile allotment) north and east of North Mytoge Mountain. The Praetor Slope (south of Koosharem Reservoir) area was identified and small p/j trees treated using hand thinning by Dedicated Hunter Volunteers and Utah UDWR habitat managers.

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

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

Status: In 2006/2007 UDWR and Utah State University Extension placed vegetation study plots in Terza Flats and Tommy Hollow to assess the effectiveness of re-seeding these areas.

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

Status: No prescribed or control burns in the PARM area in 2006/2007

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.

Status: No prescribed or control burns were conducted in the PARM area in 2006/2007.

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

Status: PARM members have identified halogeton presence along county maintained roads at lower elevations as a major threat and concern. Additional efforts have identified cheatgrass in localized camp sites and disturbed areas. PARM partners will identify specific areas during the next 3 years.

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.

Status: See action 2.1. PARM partners are working towards this action through study with PARM members with study plots in Terza Flats and Tommy Hollow.

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

Status: PARM members have identified halogeton presence along county maintained roads at lower elevations as a major threat and concern. Additional efforts have identified cheatgrass in localized camp sites and disturbed areas. PARM partners will identify specific areas during the next 3 years. PARM partners hand treated musk thistle on Parker Knoll. BLM treated Russian Knap weed the main Black Point road.

Monitoring shows no return of the species in the area. Wayne County weed crew is spraying Black henbane on BLM lands on smooth Knoll allotment north timbered knoll.

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.

Status: In 2006/2007 UDWR in conjunction with Utah State University Extension placed vegetation study plots in Terza Flats and Tommy Hollow to assess the effectiveness of re-seeding these areas.

2.8. Action: Identify areas where pinyon or juniper trees are encroaching on good quality

sagebrush habitat and treat as needed.

Status: Identified Cedar Gove allotment to be hand thinned using Dedicated Hunters with BLM and UDWR representatives to identify specific areas and trees. North Boulder area (Forest Service lands) has been identified to treat with a control burn or mechanical methods pending NEPA approval. Implementation in 2008/09

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

Status: No prescribed or wildfires in the PARM area in 2006/2007.

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.

Status: PARM identified bush spring pond to be improved. Parker Mountain Grazers built one new pond south of Jakes Knoll, repaired breach on Ottys Pond (Ottos Reservoir sage-grouse leking area) on the Cedar Peak allotment and cleaned out sediments in dog lake pond on the dog lake allotment (USFS lands).

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

Status: PARM partners identified a need to rip existing pipe from the Antelope pipeline to Hare Lake and Ottys Pond on SITLA and BLM lands. Presently the pipe sits on the surface and is subjected to wear and tare and costly yearly maintenance. PARM partners to treat encroaching conifer species into wet meadows at higher elevations on USFS lands. PARM identified a need to assess all ponds on BLM and FS and to develop a scheduled program to address over silting or loosing clay/bentonite seal.

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

Status: Identify and treat encroaching conifer species into wet meadows at higher elevations on USFS lands. Assess all ponds on BLM and USFS lands to develop a scheduled program to address over silting or loosing clay/ bentonite seal.

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.

Status: Summarize USU graduate student work to identify acres treated, treatment sites, and evaluation of these areas. It would be ideal to have document/guidelines that indicates this is what we have done and what we know and management recommendations here. Also look at NRCS WHIP plan.

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

Status: Ongoing, PARM partners support and encourage efforts to improve grouse nesting habitat.

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

Status: Determined that USU graduate work needs to be summarized to identify acres treated, treatment sites, and evaluation of these areas. Use existing GIS data and nesting/brood rearing locations to address these issues.

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

Status: NRCS/WHIP/SITLA treated 500 acres using SPIKE on the Cedar Grove allotment and 500 acres on the South Pasture allotment.

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

Status: In 2006/2007 UDWR in conjunction with Utah State University Extension placed vegetation study plots in Terza Flats and Tommy Hollow to assess the effectiveness of re-seeding these areas.

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

Status: BLM used Dixie harrow to treat 5000 acres (7 mile allotment) north and east of North Mytoge Mountain and additional acreage on the Praetor Slope (south of Koosharem Reservoir). Reseeded and Dixie Harrow (north of Koosharem town and North of Greenwich to Burrville. USFS Pollywog lake treated 80 acres in '07 and will do more in '08. Brush was treated by mowing with and additional sites Fish Lake Basin of approximately 400 acres.

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

Status: BLM used Dixie harrow to treat 5000 acres (7 mile allotment) north and east of North Mytoge Mountain and additional acreage on the Praetor Slope(south of Koosharem Reservoir). Reseeded and Dixie Harrow north of Koosharem town and North of Greenwich to Burrville.

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

Status: BLM used Dixie harrow to treat 5000 acres (7 mile allotment) north and east of North Mytoge Mountain and additional acreage on the Praetor Slope(south of Koosharem Reservoir). Reseeded and Dixie Harrow (north of Koosharem town) and North of Greenwich to Burrville. USFS Pollywog lake treated 80 acres in '07 and will do more in '08. Brush was treated by mowing with and additional sites Fish Lake Basin of approximately 400 acres.

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

Status: USU graduate work needs to be summarized to identify acres treated, treatment sites, and evaluation of these areas. Use existing GIS data and nesting/brood rearing locations to address these issues.

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 leking habitat.

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

Status: PARM partners identified areas in and around black point lek complex that need to address increasing shrub numbers and density.

- 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.
Status: USU graduate work needs to be summarized to identify acres treated, treatment sites, and evaluation of these areas. Use existing GIS data and nesting/brood rearing locations to address these issues.
- 5.3. Action:** Support partner efforts that manage sage-grouse leking habitat on key public, SITLA, and private lands
Status: PARM partners encouraged the use supplement to increase winter grazing efforts by sheep in the Black point lek complex.
- 5.4. Action:** Pursue habitat improvement projects (to meet PARM defined conditions) on SITLA lands in areas used by sage-grouse for leking habitat.
Status: SITLA put sage-grouse discouragers on the fence in and around Morrell pond lek where sage-grouse were colliding/striking into this fence.
- 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.
Status: No action was taken on Strategy 6 because no natural resource development took place within the resource area during 2006/2007.
- 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.
Status: USU graduate work needs to be summarized to identify acres treated, treatment sites, and evaluation of these areas. Use existing GIS data and nesting/brood rearing locations to address these issues.
- 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.
Status: In order to achieve this action PARM partners determined that USU graduate work needs to be summarized to identify winter locations. Additionally, more winter flights and locations need to be made to better access wintering areas.
8.2. Action: Work with public and private partners to identify winter locations.
Status: UWDR/USU EXT to get more wintering locations on birds and have a mapping day where PARMs expert knowledge would be used to identify areas.
- 9. Strategy:** By 2009, maintain or increase populations of sage-grouse in the Resource Area.
9.1. Action: Support and encourage the prevention of illegal harvest of sage-grouse on public lands throughout the year.
Status: PARM partners will work with UDWR to develop and implemented an action plan to address this issue.
9.2. Action: Support continued sport hunting within current UDWR models.
Status: PARM partners supported UDWR recommendations for 2006/2007 sage-grouse

permit allocation numbers.

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

Status: In conjunction with UDWR, PARM partners conducted their annual 2 day lek counting efforts on Parker Mountain in April 2006/2007. These efforts will be ongoing.

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

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

Status: In the spring of 2006 USU researchers spent 2 different mornings searching areas north of Koosharem Reservoir and found no leking activity or any evidence of sage-grouse.

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

Status: In conjunction with UDWR, PARM partners conducted their annual 2 day lek counting efforts on Parker Mountain in April 2006/2007. These efforts will continue in 2008.

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

11.1. Action: Continue with quarterly PARM meetings.

Status: Through quarterly meetings PARM partners did, and will continue to meet this action item.

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

Status: Through quarterly meetings PARM partners did, and will continue to meet this action item.

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

Status: USU/EXT publishes quarterly newsletters highlight PARM activities.

Additionally, the Utah Farm Bureau published an article of a recent PARM range tour in their 2006/2007 newsletter.

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

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

Status: Report written and put up 60 M44 guns in wintering sage-grouse areas.

12.2. 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.

Status: Through quarterly meetings PARM partners did, and will continue to meet this action item.

- 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:** Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site.
- Status:** Research is continuing with USU PhD candidate Mike Guttery and will continue through 2008.
- 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.
- Status:** Quarterly meetings ongoing.
- 14. Strategy:** Minimize impacts of utilities lines in sage-grouse habitat.
- Status:** Action 14.1—14.3. No action due to no development taking place within the resource area.
- 15. Strategy:** Improve knowledge of disease in sage-grouse populations.
- 15.1. Action:** Monitor radio-collared and other sage-grouse for West Nile Virus and other disease outbreaks.
- Status:** Task was completed by USU graduate students and will continue in subsequent years. No disease birds were identified in 2006/2007.
- 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.
- Status:** Research is continuing with USU PhD candidate Mike Guttery.

e. Habitat Improvements and Completed Conservation Actions

All of the land management partners have been implementing and completing large habitat projects across the Resource Area. SITLA has implemented several habitat improvement projects in the Parker Mountain sub unit targeting dense stands of big sagebrush in sage-grouse brood rearing habitat. In 2001, with a NRCS grant and as part of a research project with Utah State University, 300 acres were Dixie harrowed, 300 acres received a Lawson Aerator treatment and 300 acres were treated chemically. Through 2002-2004, approximately 1,000 acres of habitat were treated with a Dixie harrow and tebuthiron (spike). In 2005, in partners with the NRCS, 750 acres were spiked in Nicks pasture. Treatments were aimed at reducing sagebrush canopy and enhancing native grass/forb cover in the understory. Additionally, the NRCS thinned approximately 30 acres of aspen stands as part of a research project with Utah State University. In 2006, SITLA anticipates treating 1,500 acres of brush with spike in the Parker knoll and cedar grove areas. Table 22 lists the acreage and general location of habitat improvement projects implemented and proposed by the PARM partners. The location of some habitat improvement projects recently or scheduled are found in Figure 15.

Table 22. Habitat improvement projects implemented to address sage-grouse threats by the Parker Mountain Adaptive Resources Management Sage-grouse Local Working Group Resource Area, 2006-2007.

ID	Region	FY start	FY complete	Project Title	Treatment type	Threat code	Acres
9999	SR	2006	2007	Seven Mile	two pass dixie harrow broadcast seed	1,21	6377
9998	SR	2007	2007	Parker Spike 2	aerial spike treatment 60- 80% kill	1	720
9997	SR	2006	2006	Parker Spike 1	aerial spike treatment 60- 80% kill	1	543
9996	SR	2006	2007	Burville Box	two pass dixie harrow broadcast seed	1,21	4531
118	SR	2006	2006	Bagley LIP	one way harrow broadcast seed	1	199

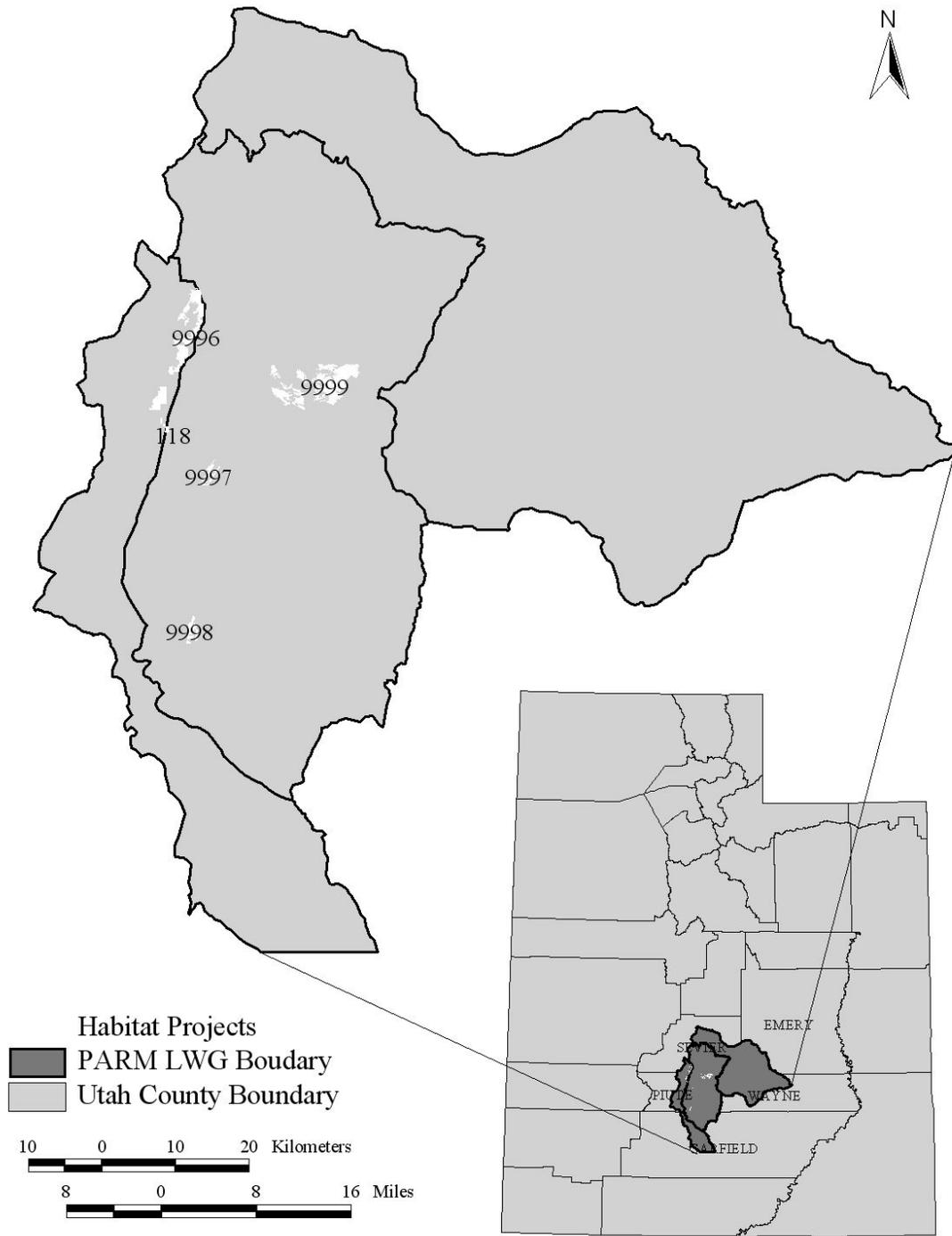


Figure 15. Location of habitat improvement projects completed in the Parker Mountain Adaptive Resources (PARM) Sage-grouse Local Working Group Resource Area, 2006-2007.