

## Uintah Basin Adaptive Resource Management Local Working Group

The Uintah Basin Adaptive Resource Management (UBARM) sage-grouse local working group is facilitated by Ms. Lorien Belton. UBARM meets three times yearly: a spring meeting, a summer field tour, and a fall meeting. The group may meet more frequently as the need arises. Upcoming meetings will address plan revisions and updates.

This past year, UBARM has worked to address a wide variety of threats to sage-grouse. Concern about encroachment of PJ into current and former sage-grouse habitat across the Basin has resulted in a suite of PJ treatment projects with multiple species goals, including sage-grouse habitat improvement. Multiple research efforts are also ongoing in the area. Researchers from BYU have entered a second year of work on Diamond Mountain to study population dynamics. Their research has been greatly helped by the involvement of private landowners in the area. In several other key sage-grouse areas in the Basin, including Anthro Mountain and Deadman Bench, USU researchers continue to work on projects focused on better understanding the effects of different types of vegetation treatments on sage-grouse habitat. UBARM also works proactively on many fronts. The group considers the impacts of proposed projects, just as transmission lines, and comments as appropriate. Several group members participated in the scoping process conducted by TransWest for their proposed transmission line through the area. The group sent a joint letter regarding their concern that the alternate proposed route over Diamond Mountain was of concern for sage-grouse populations on that mountain. Also, many members of UBARM work with private landowners to find ways to improve sage-grouse habitat. Several private landowners participated in the NRCS Sage-grouse Initiative to improve habitat for sage-grouse on private lands.



Figure 10. The Uintah Basin Adaptive Resource Management (UBARM) Sage-grouse Local Working Group Conservation Area consists of 5,375,423 acres located in eastern Utah.

## Conservation Strategies and Actions

**1. Strategy:** Increase cooperation and coordination between UBARM and public and private partners.

**1.1. Action:** By 2007, meet with the Ute Tribe Fish and Game Department to update them on UBARM activities and encourage participation.

**1.2. Action:** Work with the NRCS to review and potentially endorse NRCS WHIP and EQIP projects that would benefit sage-grouse on private land.

**1.3. Action:** Encourage use of UBARM defined desired conditions for state and federal lands and influence management actions in order to move toward those conditions.

*Another round of NRCS SGI funding through NRCS's EQIP and WHIP programs was made available this spring. A number of landowners expressed interest, and projects are being designed in consultation with NRCS and UDWR staff. Three NRCS projects are planned for the upcoming year on Diamond Mountain, as follows: SGI funds will support two projects: The first, on a 640 acre tract of private land, will include 163 acres of lop and scatter of PJ, 98 acres of spike treatment, water well/pipeline/troughs to help aid in prescribed grazing/fence to break tract up into pastures to help with prescribed grazing, upland wildlife habitat management (prescribed grazing for three years following other treatment completion). The second, which covers 2125 private acres and 1600 acres of BLM leases, will include 300 acres of spike treatment for sagebrush, 600 acres Dixie harrow (mosaic), fence, pipeline, troughs, and spring development to help facilitate prescribed grazing, upland wildlife habitat management (prescribed grazing for three years following other treatment completion). In addition, 1670 acres of private land will be under GRP and include prescribed grazing designed to benefit both livestock and sage-grouse habitat.*

*No sage-grouse activity related to Tribal land is known to have occurred in the reporting period, although a planned prescribed fire on Towanta Flats in sage-grouse areas may be under consideration for a mosaic, mechanical treatment instead if the project becomes a priority for the tribe. UDWR has yearly meetings with tribal biologists to discuss joint projects and opportunities, including those related to sage-grouse. The tribe has done greenstripping for firebreaks. Further work may provide opportunities to design greenstripping projects to also benefit sage-grouse; for example, by conducting lop and scatter projects in key sage-grouse areas.*

**2. Strategy:** Increase information/education opportunities with local community and UBARM partners.

**2.1. Action:** By 2008, develop informational handout about sage-grouse ecology and UBARM activities.

**2.2. Action:** Through 2016, include information about UBARM activities in County Extension newsletter.

**2.3. Action:** Schedule spring field tour of habitat management projects.

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

*A late-summer 2010 field tour was held jointly with UBARM and the UPCD, which gave both groups the chance to expand their understanding of habitat projects in the area. In late June of 2011, another joint field tour to the Book Cliffs gave participants a solid understanding of the scale of PJ treatments and fire management in that region, including context for the sage-grouse populations in that area. An article on corvid predation on sage-grouse and habitat issues was published in the Vernal Express in the spring of 2011. Despite some factual inaccuracies, it explained some of the core issues addressed by the working group. A series of conversations with private landowners on Diamond Mountain regarding a possible CCAA occurred through the winter and spring of 2011. No work is currently being done on this unless the landowners chose to move forward with it. If that occurs, a public workshop would likely be held to increase the opportunity for others to participate. NRCS held a landowner workshop, also attended by the UDWR Sensitive*

*Species biologist, to educate agricultural producers in the area about SGI funding and how to design projects to help sage-grouse.*

**3. Strategy:** By 2016, increase brood-rearing habitat quality in the Resource Area.

**3.1. Action:** Work with agency partners to develop projects that would increase brood-rearing habitat quality in the Resource Area.

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

**3.3. Action:** Conduct vegetation treatments to improve forb diversity in the understory (e.g., harrowing, aerating, chaining) and reclaim or reseed disturbed/treated areas, when necessary, using seed mixtures high in native bunch grasses and desirable forbs.

*A second phase of the WRI Cedar Camp lop and scatter in the Book Cliffs is located near sage-grouse summer habitat, and will continue to expand acceptable habitat for sage-grouse in the area. A new guzzler in the area will provide water for bison, mule deer, and livestock in the area. It does not create wet areas for forbs but will improve grazing distribution in the area. A harrow project on Raven Ridge east of Deadman Bench is in winter and brood-rearing habitat will treat 501 acres.*

*Several private lands projects may also help sage-grouse. For one large Sage-Grouse Initiative project on Diamond Mountain, UDWR biologists have helped adapt plans for a sagebrush treatment on private land on the rim of Diamond Mountain (Siddoway Ranch) to be more sage-grouse friendly. The treatment will be extended onto the operator's BLM allotment to allow for treatment of the same number of acres of sagebrush for livestock forage enhancement, but in a way that improves habitat for sage-grouse by creating a mosaic rather than treating all those acres in a smaller area. On larger areas of 2,125 private acres and 1,600 BLM acres, the project includes 300 acres of spike treatment on the private land and 600 acres Dixie harrow (mosaic) on BLM, fence, pipeline, troughs, and spring development to help facilitate prescribed grazing, upland wildlife habitat management (prescribed grazing for three years following other treatment completion). A different landowner, west of Matt Worner Reservoir, has proposed a project to do several hundred acres of vegetation treatment and a water development. UDWR may be able to pay for seed so that the project can move forward; otherwise, it will be proposed to WRI in late 2011.*

**4. Strategy:** By 2016, increase population and habitat monitoring efforts in the Resource Area.

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

**4.2. Action:** In 2007, UDWR biologists will coordinate with Ute Tribe biologists to identify sage-grouse lek sites and count birds on Tribal lands.

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

*Several research projects continued during the reporting period. BYU continued their research on Diamond Mountain, with almost 80 birds collared over two seasons. The researchers are focusing on bird movements, seasonal habitat use, nest success, nest*

*vegetation characteristics, and other topics. They will be modeling habitat preferences with large amounts of data collected at both best sites and random sites. The researchers have been provided housing by a local landowner, who has been very supportive of the research. USU continues work on Anthro Mountain; a new graduate student is following previously collared birds as well as trapping and collaring approximately 15 additional grouse. Brian Maxfield from UDWR monitors both of the Anthro and Diamond Mountain sage-grouse populations during the winter to learn about winter range use. This year, because of the harsh winter, this data was particularly useful. Anthro Mountain birds went in many different directions. Diamond Mountain birds were found using areas both on the mountain and off the rim. UDWR continues to work toward collaboration with tribal biologists but no formal monitoring coordination occurred this year. In addition, UDWR continued its regular annual lek counts. Anadarko funded mapping of sage-grouse habitat done by researchers at USU. The modeling results will be likely be ground-truthed in the near future. All three Cooperative Sagebrush Initiative projects (two grazing projects on Deadman Bench and Anthro Mountain, and associated Dixie Harrow work on Deadman Bench) are research designed to better understand sagebrush habitats treatment impacts on vegetation.*

**5. Strategy:** By 2016, work with public and private partners to reduce invasive/noxious plant species, especially in areas used for nesting and brood-rearing.

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

**5.2. Action:** Coordinate with county weed control department to control invasive/noxious weeds in areas used by sage-grouse.

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

**5.4. Action:** Avoid controlled burns and fight wildfires in areas dominated by cheat-grass.

**5.5. Action:** Encourage and support use of chemical and mechanical treatments to control cheat-grass and invasive/noxious weeds.

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

*Spotted knapweed control (and some musk thistle control) on UDWR land on Diamond Mountain continues near Matt Worner Lake. This is a joint project between many weed management partners, including UDWR and the Uintah Basin Cooperative Weed Management Area association. Weed management is ongoing maintenance for many UBARM partners. In addition, whitetop and hoary cress are managed on Goslin Mountain and Antelope Flat in Daggett County. Some tamarisk treatments have also been done on Red Creek near sage-grouse habitat. One of the primary weed concerns in the Uintah Basin is cheatgrass and halogeton that comes in when land is disturbed, and can be very difficult to combat particularly in dry areas where re-establishment of native vegetation can be difficult. Energy companies work to control weeds related to well pads and other disturbances, but it is very challenging due to the environmental conditions. In areas where sage-grouse populations are more dense, weeds are not a primary threat.*

**6. Strategy:** By 2016, minimize effects of roads and utilities in areas used by sage-grouse.

- 6.1. Action:** Re-vegetate utility corridors with sage-grouse seed mixes.
- 6.2. Action:** Avoid placement of new roads and utilities near lek sites (specific distances should be site specific).
- 6.3. Action:** Where possible, install perch deterrents on tall structures located in areas used by sage-grouse.
- 6.4. Action:** Avoid new construction during important periods and re-route lines where technically and economically feasible to avoid impacts.
- 6.5. Action:** Schedule maintenance to minimize important periods, however, maintenance in emergency situations will be unrestricted.
- 6.6. Action:** Where practicable, install low-profile tanks in areas used by sage-grouse.

*Construction for the WIC compressor station on Diamond Mountain was completed and the station went online in early winter of 2010. Many entities in the last year and a half have been involved in commenting on potential large power transmission line routes in the area. TransWest held scoping meetings in the area in early 2011 to discuss proposed routes. One of those routes, an alternative to the preferred transmission line path, crosses Diamond Mountain. The sage-grouse group wrote a joint letter to TransWest indicating that the group opposed that alternative due to the negative impacts a large powerline over Diamond could have on the large sage-grouse populations there. Routing alternatives for South Gate have not been publicly discussed. The group is working to stay apprised of further project developments. Also, as noted in previous years, the Uintah County Public Lands Implementation Plan (Uintah County Board of Commissioners 2005a) has regulations in place to follow the state sage-grouse plan and ensure buffer zones between known leks and new road, utility, fence, etc. developments.*

**7. Strategy:** Monitor impacts of hunting on sage-grouse population in Resource Area.

- 7.1. Action:** Review and advise UDWR on sage-grouse harvest plans.

*As in previous years, sage-grouse limits are re-evaluated each year based on spring lek counts. UDWR uses wing barrel collections in the UBARM area where hunts are allowed.*

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

- 8.1. Action:** Coordinate grazing management with livestock operators to reduce resource and timing conflicts on leks and prime nesting habitat when possible.
- 8.2. Action:** Apply grazing management practices to achieve desired conditions including maintenance of residual herbaceous vegetation appropriate for the site.
- 8.3. Action:** Encourage implementation of grazing systems that provide for areas and times of deferment while taking into consideration the resource capabilities and needs of the livestock operator.
- 8.4. Action:** Manage livestock to enhance riparian conditions.

*As in recent past years, grazing is excluded from riparian areas on the UDWR land (Matt Warner) on Diamond Mountain. If a proposed feral horse roundup on Winter Ridge in the Book Cliffs takes place next year, the subsequent grazing pressure reduction range*

*improvements would likely benefit sage-grouse habitat in the area, although political opposition to horse roundups make them uncertain. If horses are rounded up, vegetation treatments that would increase forb and grass availability can be considered. The three previously mentioned NRCS projects under contract on Diamond Mountain – of 640, 1670, and 3725 acres respectively – all include prescribed grazing designed to help sage-grouse. NRCS projects funded through the Sage-Grouse Initiative last year were primarily sagebrush treatment with Spike. UWDR biologists worked to reduce regular chemical application rates to reduce sagebrush kill so the brush treatments would be at a level that benefits sage-grouse. Due to the late spring, project success rates are still unclear.*

*Grazing projects associated with the Cooperative Sagebrush Initiative have used cattle to reduce smooth brome on Anthro Mountain and reduce sagebrush using sheep grazing. Both projects are being monitored to determine how grazing can be used to manipulate vegetation in ways that may benefit sage-grouse habitat.*

*NRCS, GIP, and federal partners who manage private grazing leases are all members of the local working group who work with grazers to plan and implement strategic grazing management on Blue Mountain, Diamond Mountain, and Anthro Mountain. Sage-grouse considerations are part of their work when working with grazers.*

**9. Strategy:** By 2016, key public and private lands in the UBARM Resource Area (specific locations to be selected) are protected and/or managed so as to conserve/improve sage-grouse nesting and breeding habitat.

**9.1. Action:** Pursue private land protection on a few key parcels (TBD).

*UBARM partners remain open to opportunities to conserve key sage-grouse areas more permanently, although the group has not worked on any projects this year.*

**10. Strategy:** Manage PJ stands to reduce encroachment into sagebrush/grass communities.

**10.1. Action:** Remove encroaching trees and tall shrubs mechanically (chainsaws, chaining, etc.) or by other methods, where needed to maintain visibility at lek sites and security from predation in other seasonal habitats.

**10.2. Action:** Identify areas where pinyon or juniper trees are encroaching on good quality sagebrush habitat and treat and re-seed as needed.

**10.3. Action:** Revisit and retreat as needed PJ removal sites to prevent reestablishment in previously treated areas.

*The Cedar Camp lop and scatter, phase II, funded by WRI, should improve sage-grouse habitat by opening up sagebrush stands in otherwise thick PJ. Sage-grouse broods have been seen in the area in recent years. Cherry Mesa, another PJ removal project in the same area, has been completed also. On Diamond Mountain, the Mail Draw and Ryegrass lop and scatter projects, each about 1000 acres, were done, and will likely improve late brood-rearing or winter habitat by removing PJ encroachment. Other projects with the potential to improve sage-grouse habitat by removing PJ include the proposed Buck Camp Canyon lop and scatter just south of East Bench, and the next phase of Anthro Mountain lop and scatters on Jeep Trail and Gilsonite Ridge.*

*In addition, one PJ-related Sage-Grouse Initiative project with NRCS is planned for the upcoming year. This project, as mentioned previously, is on Diamond Mountain, and on a 640 acre-tract; the project includes 163 acres of PJ lop-and-scatter.*

**11. Strategy:** Enhance existing riparian areas or create small wet areas to improve nesting, brood-rearing, late summer, and fall habitat.

**11.1. Action:** Identify opportunities or needs to create small wet areas in areas used by sage-grouse, implement such projects where economically feasible.

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

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

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

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

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

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

*On Diamond Mountain, two projects funded through NRCS's SGI will include water developments to help in prescribed grazing.*

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

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

**12.2. Action:** Map and inventory leks with potential for restoration.

**12.3. Action:** Maintain and enhance desired conditions for leks.

*No lek-specific work was done this year. The need for focus on the lek on Tribal land -- where birds reportedly strut on the road -- remains.*

**13. Strategy:** Maintain Conservation Reserve Program (CRP) lands for sage-grouse.

**13.1. Action:** Work with NRCS and others to maintain the CRP program and improve its benefit to wildlife by altering seed mixes to be more sage-grouse friendly, including bunchgrasses, forbs and big sagebrush

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

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

**13.4. Action:** Encourage interest and enrollment of key sage-grouse habitats, including those in grain production, in relevant Farm Bill programs (CRP and GRP).

*A large section of Diamond Mountain is in CRP. 160 acres that came out of CRP last year has been reenrolled in the project and will continue to be rested.*

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

**14.1. Action:** Participate with County land use decision makers in identifying key sage-grouse habitats and establishing zoning ordinances that protect those areas from inappropriate development

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

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

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

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

**14.6. Action:** If development does occur, work to minimize impacts to biodiversity.

*Housing and commercial land development is not currently a major issue for sage-grouse in the area. USUEXT and UWDR staff presented basic sage-grouse issues and information to the county commissioners in March 2011. This included information that the GIS shape files for sage-grouse habitat have been updated, and a third category added (occupied habitat). This information also went out to the whole email list.*

**15. Strategy:** Minimize sage-grouse habitat loss to oil and gas activities while ensuring continued development.

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

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

**15.3. Action:** Reduce cumulative impacts of oil and gas development.

**15.4. Action:** Use directional drilling where feasible to minimize surface disturbance, particularly where well density exceeds 1:160 acres.

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

**15.6. Action:** Plan and construct roads to minimize duplication.

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

**15.8. Action:** Use existing, combined corridors where possible.

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

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

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

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

**15.13. Action:** Minimize width of field surface roads.

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

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

- 15.16. Action:** Avoid breeding/nesting season (March 1 – June 30) construction and drilling when possible in sage-grouse habitat.
- 15.17. Action:** Limit breeding season (March 1 – May 1) activities near sage-grouse leks to portions of the day after 9:00 a.m. and before 4:00 p.m.
- 15.18. Action:** Reduce daily visits to well pads and road travel to the extent possible in sage-grouse habitat.
- 15.19. Action:** Utilize well telemetry to reduce daily visits to wells, particularly where well density exceeds 1:160 acres.
- 15.20. Action:** Locate compressor stations off ridge tops and at least 2,500 feet from active sage-grouse leks, unless topography allows for closer placement.
- 15.21. Action:** Avoid locating facilities within ¼ mile of active sage-grouse leks, unless topography allows for closer placement.
- 15.22. Action:** Plan for and evaluate impacts to sage-grouse of entire field development rather than individual wells.
- 15.23. Action:** Study, and attempt to quantify, impacts to sage-grouse from oil and gas development.
- 15.24. Action:** Evaluate need for near-site and/or off-site mitigation to maintain sage-grouse populations during oil and gas development and production, especially where well density exceeds 1:160 acres.
- 15.25. Action:** Implement near-site and/or off-site mitigation as necessary to maintain sage-grouse populations.
- 15.26. Action:** Share sage-grouse data with industry to allow planning to reduce impacts.
- 15.27. Action:** Participate in county planning efforts for oil and gas exploration and development to ensure that sage-grouse impacts are minimized.

*Appendix 5 of the 2009 Utah State Sage-Grouse Plan, which covers development recommendations in sage-grouse habitat, including energy development guidelines and buffer zones around leks, is still under discussion, so guidelines have not been formally issued by the state.*

*Several proposed energy developments with the potential to impact sage-grouse populations. On Anthro Mountain, the USFS has been working with Vantage and Berry Petroleum to address sage-grouse issues. UDWR has provided comments. USFS is currently developing an amendment to the Berry Petroleum EIS to better address sage-grouse issues. One concern was that both companies planned to use access roads that would increase disturbance to sage-grouse. Berry Petroleum has agreed to not use Nuttar's Ridge as access; Vantage is still in discussion, but may be able to use the recommendations from the Berry EIS changes. Possible amendments that would benefit sage-grouse include timing restrictions, increased buffers around leks, and pad spacing restrictions. Berry has also worked to power pumpjacks using natural gas-powered engines, which should improve noise levels and air quality.*

*The BLM has been working with several field development proposals as well, including the Natural Buttes EIS (about 3,600 wells), which is close to completion. Sage-grouse protection measures will likely be fairly standard with the RMP for all alternatives except the resource protection alternative, which may include increased NSO buffers around active*

*leks, greater timing restrictions within 2 miles of active leks to protect habitat, noise reduction techniques, etc.*

*Questar continues to work on Energy by Design with various partners, but no formal proposal has been made to the BLM yet. It focuses on core sage-grouse populations regionally, so the peripheral populations south of Hwy 40 (i.e. Deadman Bench) will not fall within that area.*

*Additional EISs for large multi-well developments are in progress in the area, but are not in active sage-grouse areas, such as the Monument Butte and Capita proposals. The Gasco EIS (North of Nine-mile canyon and west of the Green River) is not in an active sage-grouse area but is peripheral to historic habitat. This EIS is almost complete but is under EPA review due to air quality issues. This EIS proposes about 1500 new natural gas wells.*

**16. Strategy:** Minimize the impact of excessive predation.

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

**16.2. Action:** Where sage-grouse population-level effects of predation (especially common ravens and red fox) are clearly identified, plan and implement site-specific predation management as necessary. Incorporate a monitoring plan to determine success.

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

*As in previous years, lethal control of ravens via DRC-1339 baited eggs continues. This year, both Diamond and Blue Mountain were targeted for raven control. A total of 864 eggs were placed on the ground in the spring of 2011. Significant raven-related spring sage-grouse nest predation was recorded on Diamond Mountain in early May. No systematic research to examine raven impacts is being done in the area, although BYU researchers may be able to address raven impacts in their analysis. The same researchers noted that ravens appeared in large numbers in sage-grouse breeding habitat on Diamond Mountain at a particularly sensitive time for eggs and chicks.*

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

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

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

*West Nile is present in the Uintah Basin but has not yet conclusively appeared to be a problem for sage-grouse locally.*

**18. Strategy:** Increase subpopulation numbers and genetic distribution in Resource Area subunits (TBD).

**18.1. Action:** Use translocation from within the Resource Area to supplement subpopulations.

**18.2. Action:** Use translocation from areas outside the Resource Area to supplement subpopulations.

**18.3. Action:** Use translocation techniques developed by Baxter et al. in Strawberry Valley

*No additional translocations to the UBARM Resource area occurred this year. Ongoing research work by USU (on local and translocated birds on Anthro Mountain) may provide additional insight into genetic distribution once data have been analyzed. Several group members feel that translocations from Diamond Mountain to sage-grouse areas in the Book Cliffs would be a valuable research focus for the future.*

**19. Strategy:** Increase knowledge base regarding the positive and negative effects of sagebrush habitat improvement projects on other shrubsteppe species.

**19.1. Action:** Identify and/or develop research and monitoring protocol to address impacts to other shrubsteppe species of management practices targeted at improving or enhancing sage-grouse populations and/or habitats.

*No habitat projects done by UPCD/WRI or NRCS were monitored for wildlife in 2009 and/or 2010, and funding was not available for UPCD/WRI wildlife monitoring in 2011. Many projects include range trend sites that monitor vegetation change, but not wildlife species.*

## **Major Needs and Concerns**

An underlying challenge for the UBARM group is the wide variety of threats facing sage-grouse and the effort required to fully understand and address those threats. Large-scale energy development continues to be a concern for sage-grouse. Interstate transmission line routing has the potential to have significant impacts on local populations depending on the routes chosen. Much habitat is threatened by PJ encroachment, and substantial efforts continue to address that concern. Predation continues to be a concern as well, particularly by ravens. The complexity of how threats combine to impact sage-grouse populations and the large area of concern provide ample opportunities to help the bird but also make coordination and targeted interventions challenging.