SAGE GROUSE

QUARTERLY REPORT

Contract No. 146311

October 2017

Stag Consulting

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STAG CONSULTING EFFORTS

INTRODUCTION

This report is provided in compliance with state of Utah Contract 146311. The contract requires Stag Consulting to provide "written, quarterly progress reports to the Department of Natural Resources and to the Natural Resources, Agriculture, and Environment Interim Committee." This report will provide an overview of the progress and results of the fourth quarter of the contract period that covers July 1, 2017 to September 30, 2017. This report is being provided in addition to the quarterly progress reports that have previously been submitted by Stag Consulting related to the Sage-grouse Coordinated Consulting Team's efforts, which are incorporated herein by reference.

There has been significant progress in the state of Utah addressing the needs of Greater Sage-grouse. Utah's Watershed Restoration Initiative is significantly reducing the severity and acreage impacted by wildfire within Utah's SGMAs. From 1999-2007, wildfires within the state of Utah burned 628,663 acres within Utah's SGMAs. This amounts to 8.7% of the acreage within Utah's SGMAs during the 9-year period. From 2008-2016 significant expenditures through Utah's Watershed Restoration Initiative have resulted in on-the-ground conservation expenditures on behalf of Sage-grouse.

The impact on wildfire from these conservation efforts has been immediate and dramatic, from 2008-2016, wildfires within the state of Utah burned 114,111 acres within Utah's SGMAs. This is an improvement of 82% since 2008. This amounts to 1.5% of acreage within Utah's SMGAs that were impacted by wildfire from 2008-2016. Just as importantly, this means that 514,552 fewer acres were impacted by wildfire in the last 9 years compared to the previous 9-year period (1999-2007). These efforts have resulted in fewer acres impacted by wildfire, less fragmentation from pinyon/juniper encroachment, and hundreds of thousands of fewer acres of cheat grass dominance. This is one more way that Utah's plan is addressing the most important needs of Sage-grouse in the state of Utah.

As a result of Utah's conservation efforts, in September 2015, the Obama Administration agreed that Sage-grouse were "not warranted" for listing under the Endangered Species Act. The announcement represents major progress as well. As recently as 2010, the Obama Administration announced that Sage-grouse were warranted for listing, despite being precluded by higher listing priorities. In making the announcement, Secretary Jewel indicated that the decision would "…give states, businesses and communities the certainty they need to plan for sustainable economic development."

Avoiding a listing of Sage-grouse was an important first step in the Greater Sage-grouse Coordinated Consulting Team's efforts. However, significant challenges remain. As part of this process, substantial pressure was brought by the U.S. Fish and Wildlife Service and Bureau of Land Management to implement new land use plans through the amendment process. These plans comprise 2,000 pages of new restrictions. Many federal officials have issued direct warnings about the impact of these new plans on economic activity and the ability of Utahns to use working landscapes and public lands in the state.

A detailed analysis of these plans shows they will in fact have significant impact on the state of Utah. Analysis of the federal Sage-grouse record demonstrate the plans have a significant likelihood of reducing mule deer populations, hunter access, and undermining state management of over 100,000,000 acres of prime big game and upland game hunting across the West. The federal management plans also contemplate extreme criteria for livestock grazing, mining, and other productive uses of public lands in the state. They include significant restrictions which will impact oil and gas development on "priority" Sage-grouse habitat, but also provide federal regulators significant flexibility to restrict responsible use of "general" habitat in the state. In fact, a September 2016 instructional memorandum contains significant and troubling restrictions that far exceed negotiated mineral development standards. This is yet another example of the federal unilateralism and the repeated broken commitments to the state by Obama Administration Officials.

The good news is that these plans are now under review. On June 8, 2017, Interior Secretary Ryan Zinke signed Secretarial Order 3353 to address serious concerns of Bureau of Land Management and Forest Service Record's of decision in the name of Sage-grouse. The secretarial order specifically ordered a review of federal pans to ensure conservation plans are implemented in ways that do not impede local economic opportunities and established an internal review team to evaluate federal and state sage grouse plans and programs to ensure they are complementary and consistent with local economic growth and job creation.

Secretary Zinke inspects Utah lands up close, May, 2017 - Photo by Tami A. Heilemman, Interior.

The secretarial order is a sign of progress in our efforts to protect Utah's plans for Sage-grouse conservation. It is also consistent with objectives of H.R. 527 and S. 273 which ensure federal plans are consistent with state management authority over non-endangered Sage-grouse.

On August 4, 2017 Secretary Zinke released a memo that detailed the Sage Grouse Plan Review Team's initial findings and recommendations and ordered the Department of the Interior and its agencies to look for ways to implement the recommendations. The team's recommendations are a step in the right direction in reducing the onerous requirements of the BLM and US Forest Service's plans and will lead to better coordination between the Federal and State Sage-grouse Management Plans.

The Greater Sage-grouse Coordinated Consulting Team continues to expend significant efforts to protect Utah's conservation programs, to address onerous provisions within the BLM and Forest Service management plans, and to prevent a listing of Greater Sage-grouse as an Endangered or Threatened Species. These efforts are producing significant results for the state of Utah and for conservation of Greater Sage-grouse.

Greater Sage-grouse Coordinated Consulting Team's Work

The Sage-grouse coordinated consulting team has expended significant efforts for the following contractual purposes:

Legal Strategies

Educating Members of Congress

Engaging the Public in the Process

LEGAL STRATEGIES

As with many species, the legal and administrative history of Greater Sage-grouse and efforts to force an Endangered Species Act listing is long, convoluted, and full of controversy. The push to list Sage-grouse as an endangered species began over 31 years ago. Understanding the reasons for which an ESA listing has been proposed is helpful to understand the legal strategies the Sage-grouse Coordinated Consulting Team utilized to protect the interests of the State of Utah.

BACKGROUND

Greater Sage-grouse as a Candidate Species

Greater Sage-grouse were first proposed as a potential candidate for study pursuant to the Endangered Species Act on September 18, 1985. At that time, it was suggested that a potential western subspecies of Greater Sage-grouse should be included as a "category 2" research candidate for listing consideration on the Endangered Species List (50 FR37958). Subsequently, it was questioned whether western and eastern variations of the Greater Sage-grouse justified a subspecies separation. In 1996, use of the "category 2" designation of species for listing consideration under the Act was discontinued (61 FR 7596), effectively removing Greater Sage-grouse as a candidate species for listing consideration.

Repeated Petitions to List Greater Sage-grouse

However, this was just the beginning of efforts to force the U.S. Fish and Wildlife Service to list the Greater Sage-grouse. From 1999 to 2003, eight petitions to list the Greater Sage-grouse as an endangered or threatened species were filed. Three of these petitions to list pertained to Greater Sage-grouse in Utah, as these petitions requested listing of the Greater Sage-grouse range-wide. On January 12, 2005 the Service announced a 12-month finding that listing of Greater Sage-grouse was not warranted, consolidating its findings on the three range-wide petitions (70 FR 2243).

Lawsuit Challenging the "Not Warranted" Decision

On July 14, 2005, plaintiff Western Watersheds Project filed a complaint in a federal district court challenging the Service's 2005, 12-month finding as "arbitrary and capricious." On December 4, 2007, the U.S. District Court of Idaho ruled in favor of the plaintiff and remanded the listing decision to the Service for reconsideration. On January 30, 2008, the court approved a stipulated agreement between the Department of Justice and the plaintiff, Western Watershed Project.

New Decisions "Warranted but Precluded"

The U.S. Fish and Wildlife Service published a new listing decision for Greater Sage-grouse on March 23, 2010. The Service's new findings concluded that a listing of Greater Sage-grouse was "warranted but precluded," designating the bird as a candidate species under the Endangered Species Act. As a candidate species, the bird remained under state management authority while listing determinations for species of higher conservation priority were conducted. The published finding identified primary threats to Sage-grouse as habitat destruction and/or modification. A significant focus of the "warranted but precluded" decision was whether regulatory mechanisms were adequate to protect Sage-grouse and their habitats.

Mega-Petitions to List 1,230 Species Filed

From 2007 to 2011 petitions to list hundreds of species on the Endangered Species List were filed. In fact, these "mega-petitions" proposed listing 1,230 species nationwide. These petitions included 207 species in the Mountain-Prairie Region and 475 species in the Southwest Region. Considering that U.S. Fish and Wildlife Service averaged only twenty petitions per year from 1994 to 2006, the filing of petitions to list 1,230 species during this period was truly unprecedented. In fact, a single special interest group filed petitions to list over 700 species in a four-year period.

Lawsuits filed to Challenge the "Warranted but Precluded"

Petitioners pushing these "mega-petitions" also filed dozens of lawsuits in an attempt to force endangered species listing of many of these species. Among these lawsuits were challenges to the "warranted but precluded" determination on Greater Sage-grouse. "Warranted but precluded" findings must demonstrate: (1) there are higher priority proposed rules that preclude the Service from issuing a proposed rule at the time of the finding; and (2) expeditious progress is being made to add qualified species to the list.

Multi-District Litigation Settlement and September 2015 Deadline for New Decision

On May 10, 2011 a Multi-District Litigation (MDL) Settlement was announced between the Obama Administration and the private plaintiff organizations. The settlement resulted in legally mandated deadline for 251 candidate species. The specific deadline for a decision on Greater Sage-grouse under this agreement was September 2015. Several third parties attempted, unsuccessfully, to challenge the MDL settlement in court.

Causative Factors in "Warranted but Precluded" Listing

It is important to point out that the 2010 finding of "warranted but precluded" was based on two factors: (1) the present or threatened destruction, modification, or curtailment of habitat or range of Greater Sage-grouse; and (2) the inadequacy of existing regulatory mechanisms.

Threats to Greater Sage-grouse and Sage-grouse habitats identified in the 2010 "warranted but precluded" decision include:

1. *Direct conversion (to agriculture or urbanized land)*
2. *Infrastructure (road and power lines)*
3. *Wildfire and change in wildfire frequency*
4. *Incursion of invasive plants*
5. *Grazing*
6. *Nonrenewable and renewable energy development*

Four of these perceived "threats" pertain to Sage-grouse and their habitats in the state of Utah: (1) Pinyon/juniper encroachment; (2) Wildfire and change in wildfire frequency; (3) Direct conversion through ex-urban development; and (4) Non-renewable energy development.

PROGRESS & RESULTS

Quantified Spatial Legal and Scientific Analysis of Potential "Threats"

The Sage-grouse Coordinated Consulting Team worked closely with the State of Utah and agencies within the state to provide a more complete and transparent understanding of how Utah's plan is working to ameliorate perceived threats to Greater Sage-grouse and address the needs of birds across the state. This is helpful to:

1. *Provide an enhanced level of understanding of the science and management efforts on behalf of Greater Sage-grouse;*
2. *Increase the reliability of information relative to these efforts and results;*
3. *Demonstrate a level of certainty that Utah's conservation practices utilize science-based solutions that are proven to work for Greater Sage-grouse; and*
4. *Illustrate how Utah's investment in conservation of Sage-grouse habitat is addressing other important values in the state of Utah, including watershed restoration, wildfire, invasive species concerns, balancing conservation needs with responsible energy development, and low-density rural development.*

We are grateful for the contributions and efforts of:

Utah Public Lands Coordinating Office

Utah Department of Natural Resources

Utah Division of Wildlife Resources

Utah Division of Forestry Fire and State Lands

Governor's Office of Economic Development

Utah Division of Oil, Gas & Mining

Governor's Office of Energy Development

Utah State University

The University of Utah

This was truly a coordinated and collaborative effort to process volumes of information, requiring countless hours and tireless efforts to meet the aggressive deadlines of this project. The years of data accumulation, science, research and extensive subject matter expertise were instrumental in synthesizing these Utah Conservation Strategies documents.

UTAH'S PLAN

On February 14, 2013, the State of Utah adopted an updated Conservation Plan for Greater Sage-grouse in Utah ("Utah's Plan"). Utah's Plan stated goal was "to protect high-quality habitat, enhance impaired habitat, and restored converted habitat to support, in Utah, a portion of the range-wide population of Greater Sage-grouse (Centrocerus urophasianus) necessary to eliminate threats to the species and negate the need for the listing of the species under the provisions of the federal Endangered Species Act (ESA)."

The 2013 Utah's Plan was not the first conservation plan for Greater Sage-grouse, but rather built upon previous statewide conservation plans and decades of experience managing Greater Sage-grouse in the state. Utah's Plan also adopts important conservation objectives and measures to ensure long-term conservation success of Greater Sage-grouse, including:

1. *Protection of 90% of habitat and 94% of Sage-grouse in Sage-grouse Management Areas (SGMAs).*
2. *Maintaining an average of 4,100 male Sage-grouse on a minimum of 200 leks (breeding areas).*
3. *Increasing usable habitat by 50,000 acres per year and improving an average of 25,000 acres of habitat each year.*
4. *Protecting 10,000 acres of habitat on private and School and Trust Lands (SITLA) lands.*

State management of Sage-grouse allows for implementation of common-sense conservation measures that not only protect balanced use of our working landscapes, but also long-term conservation of species like Greater Sage-grouse. These conservation measures are paying dividends for Utah's Sage-grouse populations.

Utah's Sage-grouse populations have been increasing over the last 15 years, with a 40% increase in 2014. Increased population counts were also documented in 2015 and 2016. This demonstrates that Utah's Sage-grouse populations remain resilient and can respond with strong population growth in years with favorable conditions. Additionally, 10-year population averages, which help control for annual population fluctuations, demonstrate that Sage-grouse population growth trend is one of positive long-term growth and stability. In fact, the 10-year rolling average number of males counted on leks shows increasing population trends since the mid-1990's. Utah's Sage-grouse are currently at 101% of its population objective.

Visit *http://wildlife.utah.gov/learn-more/greater-sage-grouse.html* to view a copy of Utah's Conservation Plan and learn about it's successful track record.

Total Sage-grouse Populations #'s Within State Sage-grouse Management Areas 1968-2014

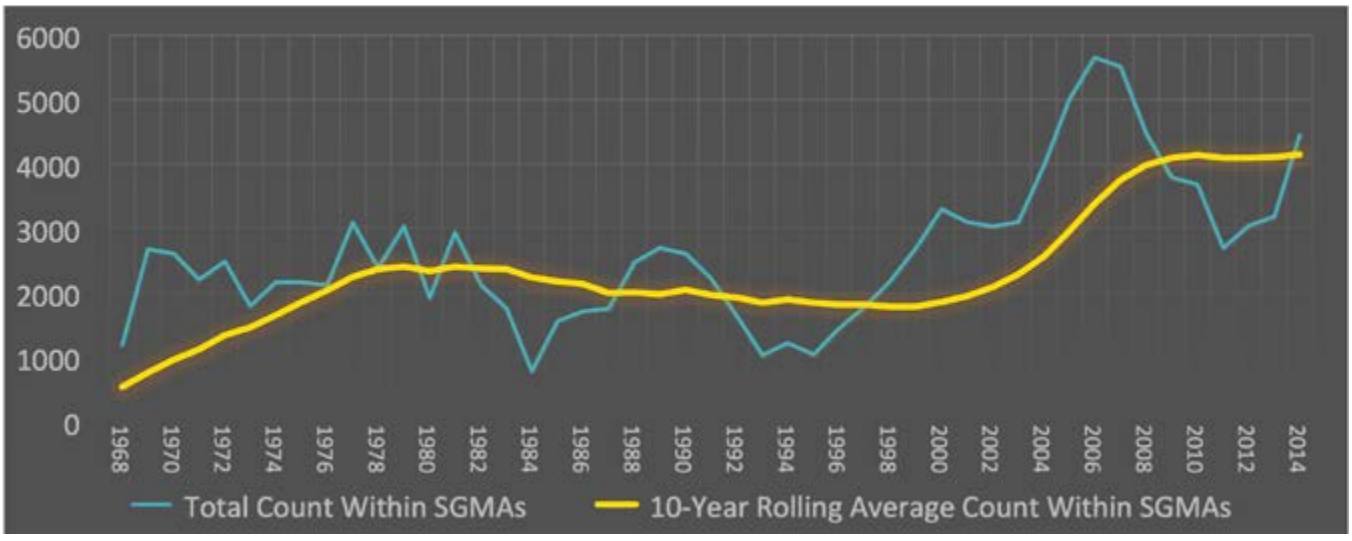

Figure 1. Population growth trends based on 10-year rolling average illustrates the growth of state Sage-grouse populations in Utah.

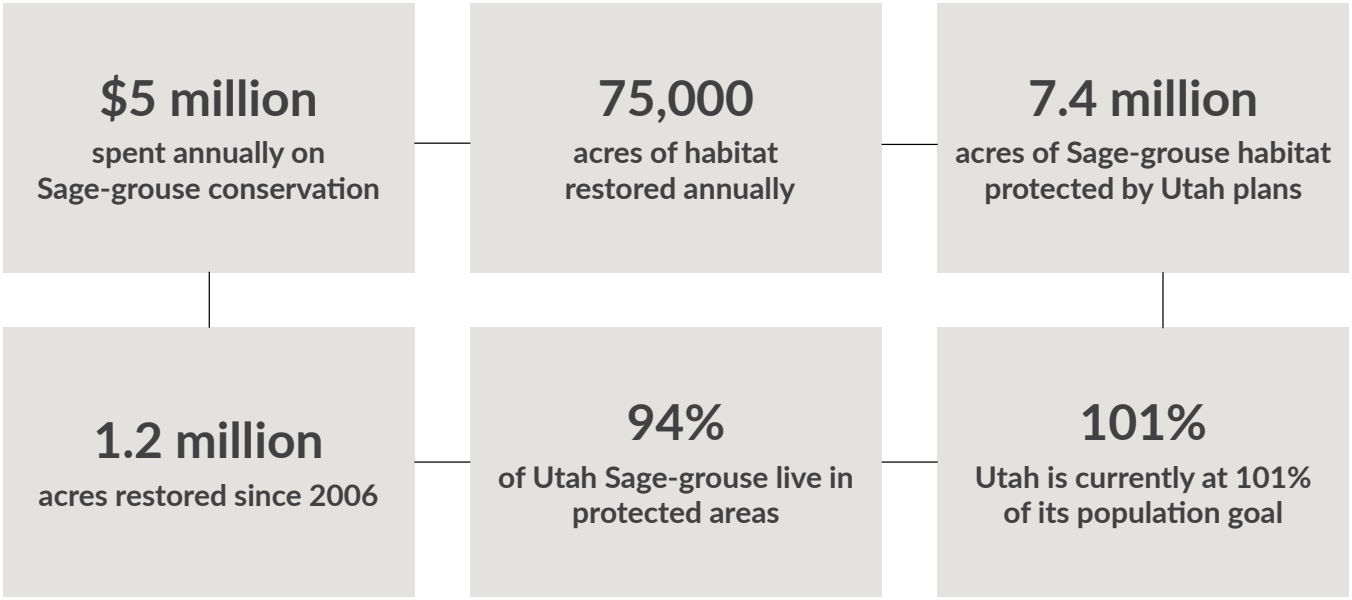

Figure 2. Utah's Plan is based on quantifiable objectives both in on-the ground conservation investment and overall Sage-grouse population numbers.

Reaffirming Utah's Commitment to Long-term Sage-grouse Conservation

During the 2015 Utah Legislative Session, the Utah Legislature passed Senate Concurrent Resolution 3 (SCR 3), reaffirming the state's commitment to long-term Sage-grouse conservation, funding for Utah's plan and requesting Congressional action to provide additional time for implementation of Utah's Plan. For a complete copy of SCR 3 please refer to Exhibit B.

Utah Demonstrating that State and Local Solutions Work

Implementation of Utah's Plan utilizes science-based strategies and proven conservation solutions for Greater Sage-grouse. Utah's adaptive management strategies are vitally important as additional science is developed on Greater Sage-grouse conservation. State management of Sage-grouse under the Utah model provides significant benefits not only to Sage-grouse, but also other critical issues facing Western Landscapes.

Sage-grouse experts acknowledge that Sage-grouse conservation should be possible given the current numbers and distribution of Sage-grouse. Perhaps this is the reason why efforts to force an Endangered Species Act listing have focused on long-term "threats" to Sage-grouse populations and their habitats.

Utah's conservation strategies focus on the most important threats, mechanisms to augment Sage-grouse populations, and increase the redundancy and resilience of habitat in areas where Sage-grouse populations can grow and thrive. Just as important, these solutions protect the rights and needs of Utahns and bring together diverse stakeholders to invest in on-the-ground Sage-grouse conservation efforts in their own communities.

Utah Conservation Strategies

A complete analysis of Utah's detailed conservation strategies were developed to demonstrate that Utah's Plan works to address the needs to Sage-grouse in the state of Utah. These conservation strategies documents create spatially explicit and detailed quantification of issues identified as potential "threats" as identified in the "warranted but precluded" decision by U.S. Fish and Wildlife Service. These "Utah Sage-grouse Conservation Strategies" (or "Utah Conservation Strategies") provide a more complete understanding of the scope and nature of each threat and a meaningful level

of certainty for implementation of on-the-ground conservation measures.

This project challenged many of our assumptions about threats, where they occurred and the degree to which these threats could impact Greater Sage-grouse and their habitats. For example, we found that 77% of habitat within Utah's SGMAs were not affected by these potential threats.

Just as surprising, we found that conifer encroachment, wildfire, and post wildfire effects were substantially more likely to create long-term impacts to Sage-grouse habitats and populations than oil and gas development and low density rural development within the 7.5 million acres comprising Utah's SGMAs. Most striking was the fact that over 95% of these birds live in areas that are virtually free of any of these threats. This strongly suggests that populations of birds are not only stable and free from threats, but inherently select habitat areas not naturally affected by wildfire, conifer encroachment, and invasive plant species. Utah's conservation strategies are more than sufficient to not only protect these habitats, but also increase the total usable habitat in areas where the grouse populations can continue to grow and thrive.

The most important threats to Sage-grouse in Utah's Sage-grouse Management Areas are wildfire, pinyon/juniper encroachment, and post-wildfire effects. In fact, these challenges account for 97% of impacts to Sage-grouse habitat in Utah's SGMAs. Addressing these threats requires significant investment in on-the-ground conservation efforts. Utah's Watershed Restoration Initiative has restored and enhanced 661,096 acres of Sage-grouse habitat from 2006-2016. When federal projects are added to this total, total habitat treatments should exceed 750,000 acres during this same period. Hundreds of thousands of acres of current and proposed projects will be completed in the coming months in Utah's SGMAs.

Figure 3. Utah's Watershed Restoration Initiative progress tracking data.

These treatments are part of Utah's commitment to habitat improvement and enhancement for wildlife. In total, Utah's Watershed Restoration Initiative has treated 1,316,963 acres at a cost of $161,600,906. An additional 258,166 acres of current projects and 162,359 acres of proposed projects brings the total investment in wildlife habitat enhancement and restoration to well over $225,000,000 dollars in completed, proposed, and current projects. These projects are protecting and restoring watersheds, addressing the threat of catastrophic wildfire, addressing the threat of post-wildfire cheat-grass dominance, and restoring beneficial habitat for Sage-grouse.

On-the-Ground Projects Work for Sage-grouse

New studies published by Utah State University are demonstrating that Utah's conservation projects are doing more than protecting the integrity of existing habitat for grouse[1]. The research demonstrates that Greater Sage-grouse that nest in sagebrush areas where conifers were removed had increased nest success and brood survival. This is important due to the fact that removal of conifers that have encroached into Sage-grouse habitat is a major conservation program in Utah's Greater Sage-grouse Conservation Strategies. An article by the Natural Resource Conservation Service highlights how pinyon/juniper removal is working to increase habitat and rearing of young chicks. The article explains two separate studies in independent Sage-grouse habitat, one in Oregon and one in Northern Utah, that demonstrate that conifer removal not only increases usable habitat, but that birds almost immediately benefit from and utilize these areas for nesting:

> *Despite conventional wisdom that female grouse are strongly tied to the same nesting sites every year, sage grouse hens were quick to consider restored habitat nearby, and nested both in and near sagebrush stands cleared of juniper. Within two to four years after juniper cutting, sage grouse moved in to cut areas, and the probability of nesting in and near treated sites increased 22% each year after cutting. After four years, the number of sage grouse nesting in and near the restored areas increased 29% (relative to the control area). Additionally, birds were much more likely to nest in or near restored sites: for every 0.6 miles from a cut area, the probability of nesting decreased 43%. In short, removing junipers dramatically increased the availability of nesting habitat, and hens proved quite willing to take advantage of good habitat as it became available.*

One quote from the article speaks volumes, "The speed at which space-starved birds colonize our sage-brush restorations is remarkable, and their increased performance is the ultimate outcome in science-based conservation," indicates Charles Sanford, former Graduate Student, Utah State University, and current SGI Partner Biologist, Tremonton Utah.

The article also praises Utah's leadership in restoring intact habitats for Sage-grouse:

> *Utah's Watershed Restoration Initiative has restored another half million acres, and the Bureau of Land Management is now investing heavily in sagebrush habitat restoration across the species' range.*
>
> *Where conifers invade, grouse appear to be lacking enough quality nesting and brood-rearing habitat. These new studies demonstrate that sage grouse know good nesting habitat when they see it, and collaborative, large-scale sagebrush restoration can benefit sage grouse within a relatively short time.*

Another quote from the article explains how the Utah Watershed Initiative has become the model for future of on-the-ground conservation planning across the West. "Most impressive to me is the foresight and planning across state and federal agencies that resulted in these watershed-scale restorations. BLM is now squarely focused on replicating this partner-based model in priority landscapes throughout the West," indicates Steve Small, Division Chief, Fish and Wildlife Conservation, Bureau of Land Management, Washington, D.C. For the full NRCS article on how Utah's Watershed Restoration Initiative and conifer removal efforts are working for Sage-grouse see Exhibit D.

Utah's Plan and Utah's Sage-grouse Conservation Strategies provide a comprehensive model that can work for Sage-grouse and other important conservation needs within the state of Utah. The following sections explain how Utah Conservation Strategies work for Greater Sage-grouse, Greater Sage-grouse habitats, and provide common sense solutions that work for Utah's economy, education funding, and protect the needs of hard working Utahns.

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1 Sandford, C., D.K. Dahlgren, and T.A. Messmer. 2015. Sage-grouse nests in an active conifer mastication site. Prairie Naturalist 47:115-116.

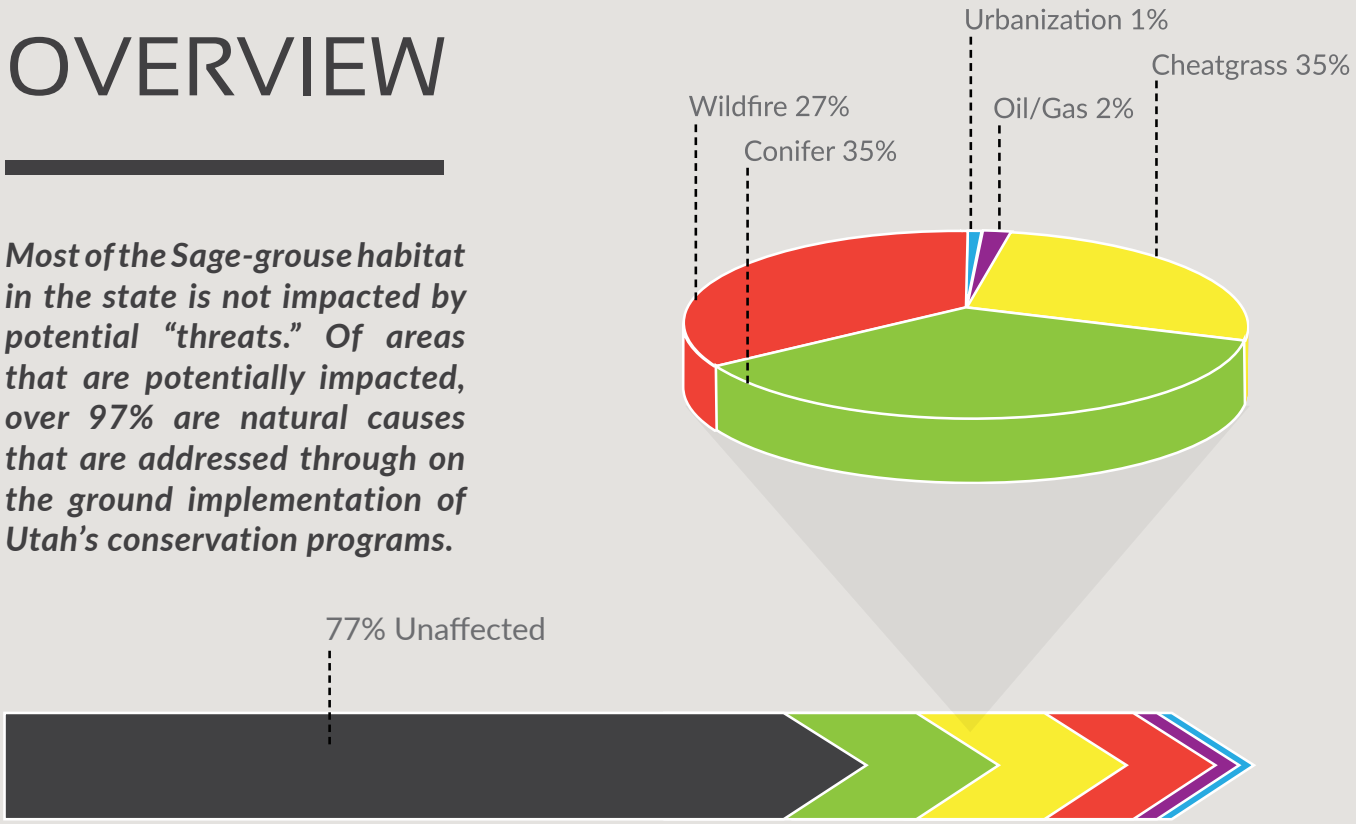
Sandford, C. M.T. Kohl, T.A. Messmer, D.K. Dahlgren, A. Cook, and B.R. Wing. In Press. Greater Sage-grouse resource selection drives reproductive fitness in conifer removal system. Rangeland Ecology and Management.

POTENTIAL THREAT OVERVIEW

Most of the Sage-grouse habitat in the state is not impacted by potential "threats." Of areas that are potentially impacted, over 97% are natural causes that are addressed through on the ground implementation of Utah's conservation programs.

1

Figure 4. Quantified Threat Analysis Based on SGMA acreage affected



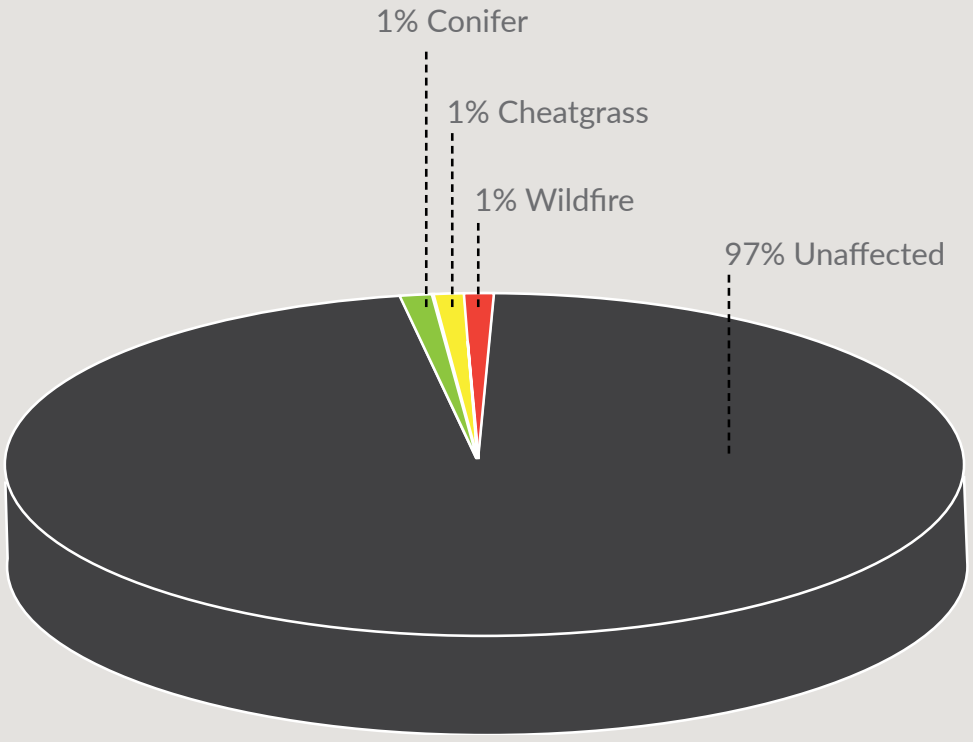


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Figure 5. Over 95% of Utah's Sage-grouse reside in areas of best available habitat. These areas correspond with areas which are largely not impacted by conifer encroachment, wildfire or invasive plant species due to the moisture and natural characteristics of the habitat in these areas.

UTAH CONSERVATION STRATEGIES

Pinyon/Juniper Encroachment & Watershed Restoration

Figure 6. Landscape scale conifer removal in the State of Utah is effectively addressing habitat fragmentation and addressing other important concerns in Sage-grouse habitat.

The state of Utah has invested and will continue to invest millions of dollars into enhancing and restoring habitat for Sage-grouse through targeted removal of encroaching pinyon/juniper trees in Sage-grouse habitats. Recent peer-reviewed scientific research demonstrates that removal of pinyon and juniper trees is an important practice for Sage-grouse habitat. The study found that even a small percentage of encroachment by pinyon and juniper trees can lead Greater Sage-grouse to abandon nesting and brood rearing habitats.

Since 2006, Utah has completed conservation projects on over 500,000 acres of Sage-grouse habitat through Utah's Watershed Restoration Initiative and its partners. The program leads the country in addressing habitat loss from conifer encroachment into Sage-grouse habitats.

For a more complete explanation of the importance of addressing conifer encroachment into Sage-grouse nesting and brood rearing habitat, please refer to the National Sage-grouse Technical Team of the USDA Natural Resource Conservation Service's handout at http://www.sagegrouseinitiative.com/conifer-removal-restores-Sage-grouse-habitat/.

PINYON/JUNIPER REMOVAL FOR PROACTIVE HABITAT RESTORATION

Overview: *The State of Utah has invested, and continues to invest, millions of dollars into enhancing and restoring habitat for Sage-grouse through targeted removal of conifers. Recent peer-reviewed scientific research demonstrates that conifer removal is an important conservation practice for Sage-grouse. The study found that even a small percentage of encroachment by pinyon and juniper trees can lead Greater Sage-grouse to abandon a nesting/brood-rearing area. Since 2006, Utah and its partners have completed conservation projects on more than 560,000 acres of Sage-grouse habitat through Utah's Watershed Restoration Initiative. This program leads the country in addressing habitat loss from conifer encroachment.*

The Importance of Restoring Sage-Grouse Habitat

Conifer encroachment, primarily of pinyon and juniper species, is an area of emphasis in conservation planning within the state of Utah and other Western states. There is a good reason why this is so important. Pinyon and juniper trees have expanded into hundreds of thousands of acres of Utah Sage-grouse habitat in the last 150 years. One estimate suggests this may be an increase of 300-400% from pre-settlement landscapes (Tausch and Hood 2007).

Currently, there is sufficient habitat to support healthy Sage-grouse populations. However, the U.S. Fish and Wildlife Service has identified habitat fragmentation and wildfire as two of the primary threats that may support a listing of Sage-grouse under the Endangered Species Act. Conifer encroachment accelerates habitat fragmentation and increases the likelihood of catastrophic wildfires. To address these challenges, the state of Utah has developed a comprehensive science-based strategy to remove pinyon and juniper trees that are beginning to encroach into existing Sage-grouse habitat. Utah's plans also have a more ambitious goal: to increase the amount of suitable habitat and the quality of that habitat within each of the state's Sage-Grouse Management Areas (SGMAs).

Figure 1 - Biologists work with landowners to implement conifer removal on private property. This program not only helps Sage-grouse populations, it can improve desirability of habitat for grazing.

How Conifer Woodlands Impact Greater Sage-Grouse

To develop comprehensive strategies and implement conifer removal projects in ways that ensure maximum benefit for Greater Sage-grouse, it is important to understand how conifers impact Sage-grouse populations. Pinyon/juniper encroachment hurts Sage-grouse and Sage-grouse habitats in four fundamental ways:

1. Creating an inhospitable environment for Sage-grouse populations;
2. Crowding out sagebrush, grasses and forbs;
3. Increasing the frequency and severity of wildfires; and
4. Altering landscapes in other ways that diminish the value of habitat for Sage-grouse.

A recent study conducted by The Nature Conservancy, University of Idaho and Natural Resources Conservation Service (NRCS) Sage-Grouse Initiative demonstrates that Sage-grouse may avoid areas of even low-density conifer encroachment.

The study found that Sage-grouse leks were not active in areas where conifers covered more than 4% of the land area (Figure 2). The study also demonstrated that Sage-grouse will avoid even small trees widely scattered across a landscape. While the early encroachment stands had less of an impact on understory vegetation than higher-density conifer stands, these areas still did not contain active Sage-grouse leks.

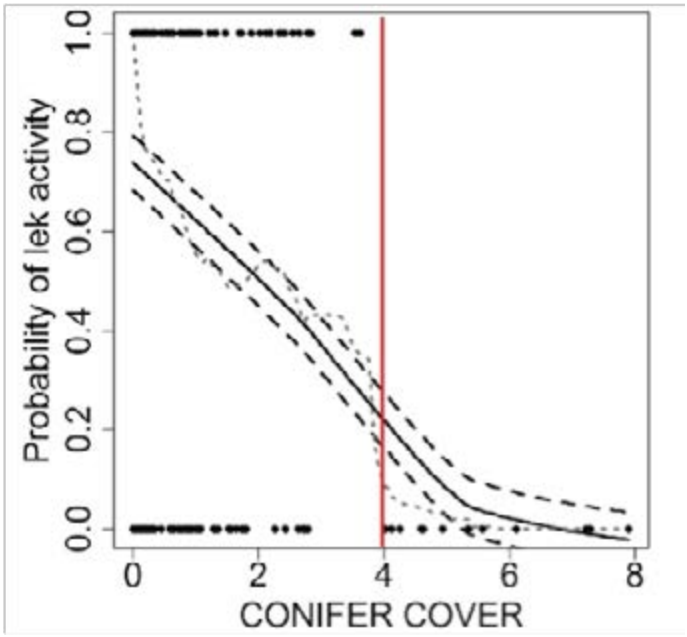


Figure 2 - Recent research underscores the importance of using science-based solutions and proven methodologies in planning and implementing conifer treatment programs.

Conifers also affect Sage-grouse in other ways. Jeremy Maestas from the NRCS Sage-Grouse Initiative Technical Team explains how conifers directly impact Sage-grouse habitats, "They act like millions of tiny little straws sucking up what little moisture we get…it eventually dries up the springs and streams that are so critical to this desert environment." Conifers can also affect soil acidity and compete with understory grasses, forbs and other plants that Sage-grouse rely on for food. Additionally, larger trees can serve as roosts for hawks, ravens, crows and other birds that prey on Sage-grouse eggs and nestlings. Just as important, conifer woodlands also increase fuel loads that can, in turn, dramatically increase the risk of catastrophic wildfire. These wildfires can alter the suitability of Sage-grouse habitat for years.

Not only do conifers increase the risk of wildfire, but the density of conifer stands can increase with the passage of time. Within the next 20 years, the low-density Phase I and Phase II conifer stands may progress toward higher-density Phase III conifer stands (Figure 3). This is a major concern because it is much more expensive and time-consuming to rehabilitate phase III conifer stands and areas burned by catastrophic wildfires than to

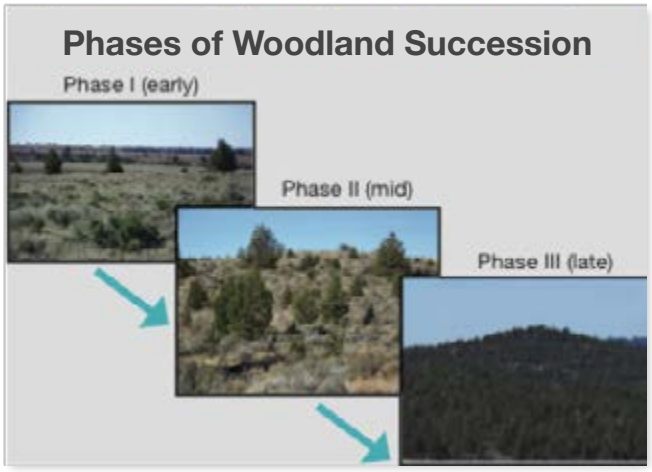


Figure 3 – Progression of conifer stands is an important focus of researchers and land managers.

treat Phase I and Phase II stands. Utah's Conservation Plan for Greater Sage-Grouse (the Conservation Plan) directs the investment in solutions to address those challenges. In fact, the state of Utah invests millions of dollars to complete up to 75,000 acres of habitat work annually.

Proven Strategies for Conifer Removal

Scientists and other experts use specific criteria to prioritize the treatment of tens of thousands of acres of pinyon/juniper encroachment. These criteria not only ensure proper implementation of

Figure 4 - Lop and scatter projects provide cost-effective long-term treatment for Phase-I conifer encroachment.

removal projects, but they also help improve occupation and use of treatment areas by Sage-grouse after projects are completed. Criteria for prioritization include, but are not limited to (1) wildfire frequency and intensity, (2) cheatgrass dominance, (3) Sage-grouse carrying capacity in the SGMA, (4) habitat-restoration capacity, (5) proximity of Sage-grouse populations, (6) seasonal importance of habitat to Sage-grouse, (7) proximity to mesic areas, (8) land ownership, (9) availability of funding for projects, and (10) regulatory obstacles to conservation projects.

State and federal agencies have identified several practical guidelines which dramatically improve the likely success of these treatments:

1. Targeting stands in early stages of encroachment with still intact sagebrush or areas which are important transition corridors;
2. Removing all conifer trees in an area to reduce conifer cover to less than four percent; and
3. Using treatment methods that maintain sagebrush and understory cover.

Figure 5 - Higher-density encroachment areas can be managed by using a brush hog to remove conifers.

This methodology is explained by the NRCS Sage-Grouse Initiative:

"Managers can get the most bang for their buck by focusing conifer removal treatments on early encroachment stands in and around landscapes that are already pretty good for grouse. Prioritizing Phase I stands (those with young scattered trees, <10% conifer canopy cover and intact sagebrush and understory vegetation) for complete removal of conifers will likely prove the most effective for restoring and sustaining habitat. Treating early Phase II stands can also prevent conversion to conifer woodlands and help functionally restore sagebrush habitat for several decades. (Baruch-Mordo et al. 2013)."

Utah's Investment in Sage-Grouse Habitat

The state of Utah has a track record of investing in conifer removal and successful subsequent use of the treatment area by Sage-grouse. Since the year 2006, the Utah Watershed Restoration Initiative has completed projects on at least 560,000 acres of Sage-grouse habitat (Figure 6). A large percentage of these projects involved pinyon and juniper tree removal. With the scientific data and information gleaned from these efforts, experts in the state of Utah can better assess areas where pinyon and juniper removal will provide the greatest conservation lift.

Through this proactive planning effort the state of Utah systematically identifies areas in each of its SGMAs where conifer woodlands encroach into

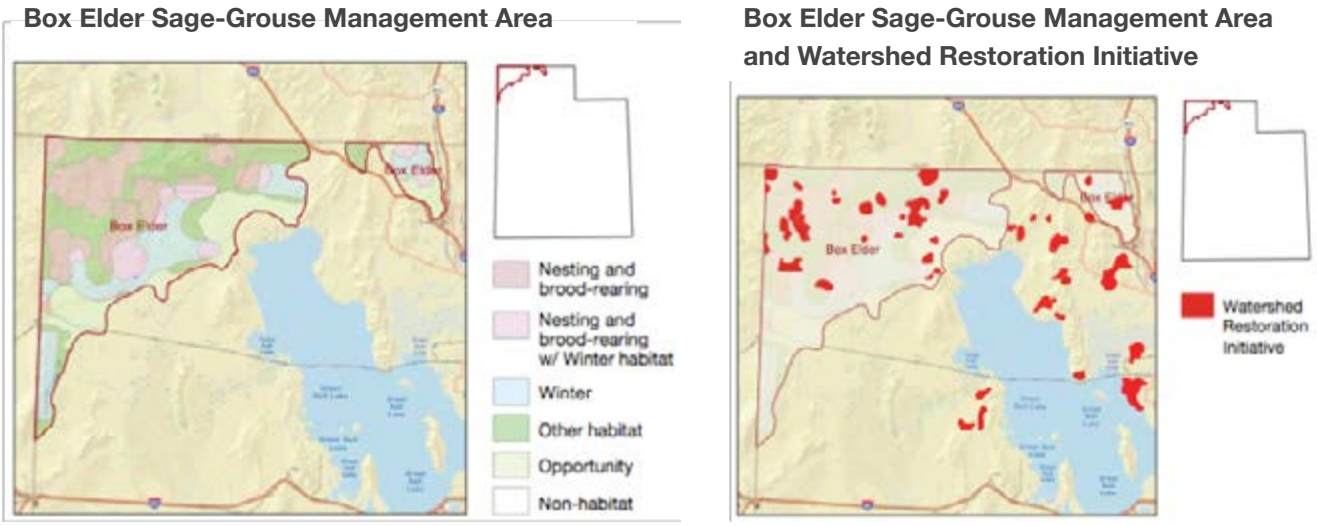


Figure 6 - Understanding Sage-grouse utilization of habitat is a fundamental part of habitat treatment projects within Sage-grouse Management Areas.

Sage-grouse habitat. In the summer of 2014, the state completed extensive fine-scale mapping (Figure 7) of pinyon pine and juniper coverage for all eleven SGMAs. This data is used by the Sage-grouse biologists and ecologists who have a working knowledge of the habitats and Sage-grouse utilization patterns of Utah's SGMAs. Using this information, these experts have developed a comprehensive conifer-removal strategy to be completed during the next 15 years. Coordinating with local working groups, the state has completed detailed plans for implementing conifer removal projects for each SGMA.

Utilizing scientifically established benchmarks for successful implementation, ecologists and Sage-grouse experts are targeting removal in areas that will immediately benefit Sage-grouse. These programs identify areas of treatment according to the following criteria:

1. Encroachment Areas: stands of early-phase encroachment in habitats currently occupied and used by Sage-grouse.
2. Tier I Opportunity Areas: Phase I and Phase II conifer stands with healthy understory but with minimal or no use by Sage-grouse. Nearby bird populations are likely to use the post-treatment area.
3. Tier II Opportunity Areas: conifer stands with healthy understory that are adjacent to encroachment areas. These areas are less

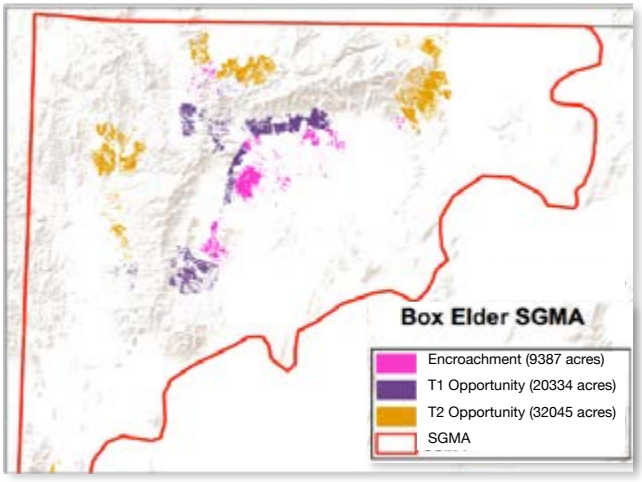


Figure 7 - Implementation of the Conservation Plan proactively protects existing habitat and restores habitats in TI and TII opportunity areas not adequately utilized by birds due to pinyon/juniper encroachment.

Figure 8 - Removal of encroaching pinyon/juniper ensures the health of watersheds in sage grouse habitats. This mesic area is an important source of food and moisture during summer brood rearing.

important to short-term strategies but provide longer-term opportunities for habitat restoration and enhancement.

By implementing proven conservation practices in these treatment areas, Utah is not only reducing the threat of fragmentation of Sage-grouse habitat, the state is increasing usable space by eliminating existing conifer stands and expanding and enhancing habitats in areas where sage grouse can thrive. These projects have increased the productivity of habitat for Greater Sage-grouse by improving stream flows, wet-meadows and the quality and quantity of food sources. Research in the state of Utah demonstrates that pinyon/juniper removal improves utilization rates by Greater Sage-grouse. Conifer removal also helps accomplish other important objectives including improving watersheds, addressing the threat of wildfires and invasive plants, reducing the likelihood of future conifer encroachment, and enhancing the value of habitat for other species.

Detailed Conservation Strategy for Long-Term Success

The Conservation Plan, as part of its identified goals and objectives, calls for the enhancement and improvement of habitat. To accomplish these goals, the state has developed detailed plans to target pinyon/juniper removal in SGMAs. These finalized implementation plans clarify the general

Figure 9 - Projects that restore active corridors can help improve hatchlings survival success. These programs also provide valuable firebreaks and contribute to healthy watersheds.

habitat definitions and expectations listed in the Conservation Plan. Habitat areas mapped for the Conservation Plan have been found to contain areas of conifer encroachment that are prime targets for treatment. Additional acreage has been identified for subsequent treatment, labeled Tier I and Tier II Opportunity Areas.

Over the course of the next two years, the state will treat Encroachment Areas totaling 60,139 acres. Tier I Opportunity Areas totaling 100,320 acres will be treated during the next 5 years. Tier II Opportunity Areas totaling 184,811 will be treated during the next 15 years. Cumulatively, these projects will treat nearly 350,000 acres of pinyon/juniper trees. Not only will these projects ameliorate the threats posed by pinyon/juniper encroachment, they will substantially reduce habitat fragmentation. Specifically, they will expand the overall acreage of contiguous suitable Sage-grouse habitat within Utah's SGMAs.

The key to these projects is consistency. "Pinyon and Juniper encroachment happens at a very slow rate over a period of decades. Steady implementation of targeted conifer removal in Sage-grouse habitat is the best mechanism to stop the loss of nesting and breeding acreage and restore habitat where sagebrush remains but conifers have displaced the Sage-grouse," explains Alan Clark, who oversees key aspects of Utah's Watershed Restoration Initiative. "As a result, we are now removing more acres of conifers in our SGMAs than the encroachment that is occurring, resulting in a net gain in contiguous Greater Sage-grouse habitat." While pinyon/juniper encroachment is not considered a threat in all of the state's SGMAs, projects have been planned for each SGMA to increase usable space for Sage-grouse. The scale of this statewide program is impressive.

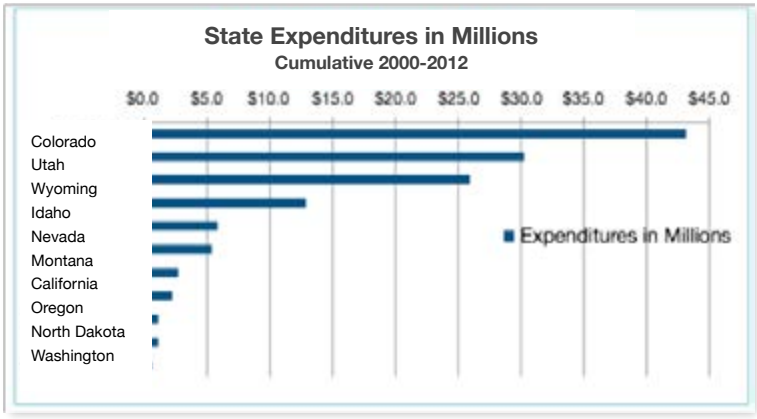


Figure 10 - Utah invests tens of millions of dollars on Sage-grouse conservation efforts.

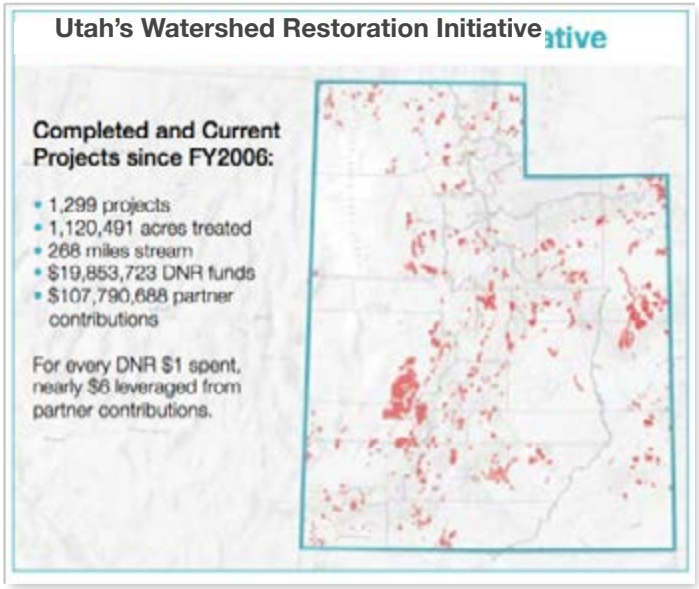


Figure 11 - Utah's Watershed Restoration Initiative is proactively implementing landscape scale habitat improvements for Greater Sage-grouse.

Here's the breakdown of Utah's strategic plan for each SGMA:

1. Box Elder

Past Treatments:	91,185	acres
Encroachment Treatments 0-2 years:	9,387	acres
Tier I Opportunity Treatments 0-5 years:	20,334	acres
Tier II Opportunity Treatments 0-15 years:	32,045	acres
Box Elder Total:	**152,951**	**acres**

2. Parker Mountain

Past Treatments:	30,474	acres
Encroachment Treatments 0-2 years:	10,795	acres
Tier I Opportunity Treatments 0-5 years:	8,923	acres
Tier II Opportunity Treatments 0-15 years:	27,760	acres
Parker Mountain Total:	**77,952**	**acres**

3. Panguitch

Past Treatments:	53,086	acres
Encroachment Treatments 0-2 years:	11,995	acres
Tier I Opportunity Treatments 0-5 years:	10,315	acres
Tier II Opportunity Treatments 0-15 years:	27,356	acres
Panguitch Total:	**102,752**	**acres**

4. Rich/Morgan/Summit

Past Treatments:	29,852	acres
Encroachment Treatments 0-2 years:	3,202	acres
Tier I Opportunity Treatments 0-5 years:	20,334	acres
Tier II Opportunity Treatments 0-15 years:	32,045	acres
Rich/Morgan/Summit Total:	**85,433**	**acres**

5. Hamlin Valley

Past Treatments:	9,839	acres
Encroachment Treatments 0-2 years:	8,720	acres
Tier I Opportunity Treatments 0-5 years:	28,246	acres
Tier II Opportunity Treatments 0-15 years:	36,219	acres
Hamlin Valley Total:	**83,024**	**acres**

6. Sheep Rock Mountains

Past Treatments:	22,515	acres
Encroachment Treatments 0-2 years:	7,981	acres
Tier I Opportunity Treatments 0-5 years:	4,341	acres
Tier II Opportunity Treatments 0-15 years:	18,113	acres
Sheep Rock Mountains Total:	**52,950**	**acres**

7. Carbon

Past Treatments:	661	acres
Encroachment Treatments 0-2 years:	4,091	acres
Tier I Opportunity Treatments 0-5 years:	4,203	acres
Tier II Opportunity Treatments 0-15 years:	221	acres
Carbon Total:	**9,176**	**acres**

8. Bald Hills

Past Treatments:	68,799	acres
Encroachment Treatments 0-2 years:	2,577	acres
Tier I Opportunity Treatments 0-5 years:	1,466	acres
Tier II Opportunity Treatments 0-15 years:	4,841	acres
Bald Hills Total:	**77,683**	**acres**

9. Uintah

Past Treatments:	128,153	acres
Encroachment Treatments 0-2 years:	1,063	acres
Tier I Opportunity Treatments 0-5 years:	1,383	acres
Tier II Opportunity Treatments 0-15 years:	2,718	acres
Uintah Total:	**133,317**	**acres**

10. Ibapah

Past Treatments:	7,413	acres
Encroachment Treatments 0-2 years:	139	acres
Tier I Opportunity Treatments 0-5 years:	476	acres
Tier II Opportunity Treatments 0-15 years:	3,266	acres
Ibapah Total:	**11,294**	**acres**

11. Strawberry

Past Treatments:	8,473	acres
Encroachment Treatments 0-2 years:	189	acres
Tier I Opportunity Treatments 0-5 years:	299	acres
Tier II Opportunity Treatments 0-15 years:	227	acres
Strawberry Total:	**9,188**	**acres**

Conclusion

Research in Utah is demonstrating that when trees are removed from encroachment and opportunity areas, Sage-grouse can begin to immediately occupy those newly restored areas. “Our research has demonstrated that Sage-grouse may respond quickly to habitats improvements such as pinyon and juniper removal, and will occupy treated areas within one year after treatment. The Utah plan, with its bold objectives to create or enhance 75,000 acres of habitat annually, are designed to increase the state’s habitat base,” explains Terry

Figure 12 - Sage-grouse chick in restoration area.

Mesmer, PhD, a Sage-grouse range biologist who has been studying the birds for more than 20 years. "Our studies are also showing that where we have increased late brood-rearing habitats, both individual bird use and overall population production has increased because of increased chick survival."

Conifer treatments will be critically important in the next 10-15 years. Approximately 80% of the identified pinyon/juniper occupied areas in the state are categorized as Phase I or II, which means these areas still have a healthy understory. These will eventually evolve into Phase III conifer stands without treatment. Utah's fine-scale mapping of pinyon-juniper encroachment into Sage-grouse core areas is informing a state-wide conservation strategy to address conifer encroachment. With 560,000 acres of Sage-grouse habitat treated since 2006 and an additional 340,000 acres planned in the next 10-15 years, the state of Utah is successfully reducing the threat posed by conifer encroachment into Greater Sage-grouse habitat. These programs also help restore healthy watersheds, address the threat of wildfire, improve working landscapes for multiple uses.

> ***"Our research has demonstrated that Sage-grouse may respond quickly to habitats improvements such as conifer removal, and will occupy treated areas within one year after treatment."***
>
> ***—TERRY MESMER, PHD SAGE-GROUSE RANGE BIOLOGIST***

Sources and Additional Reading

Sage Grouse Initiative. 2014. Conifer removal restores sage grouse habitat. Science to Solutions Series Number 2. Sage Grouse Initiative. 4pp. http://www.sagegrouseinitiative.com/wp-content/uploads/2014/09/Conifer-Encroachment-HIGH-RES-FINAL-091614.pdf

Baruch-Mordo, S., J.S. Evans, J.P. Severson, D.E. Naugle, J.D. Maestas, J.M. Kiesecker, M.J. Falkowski, C.A. Hagan, and K.P. Reese. 2013. Saving Sage-grouse from the trees: a proactive solution to reducing a key threat to a candidate species. Biological Conservation 167:233-241.

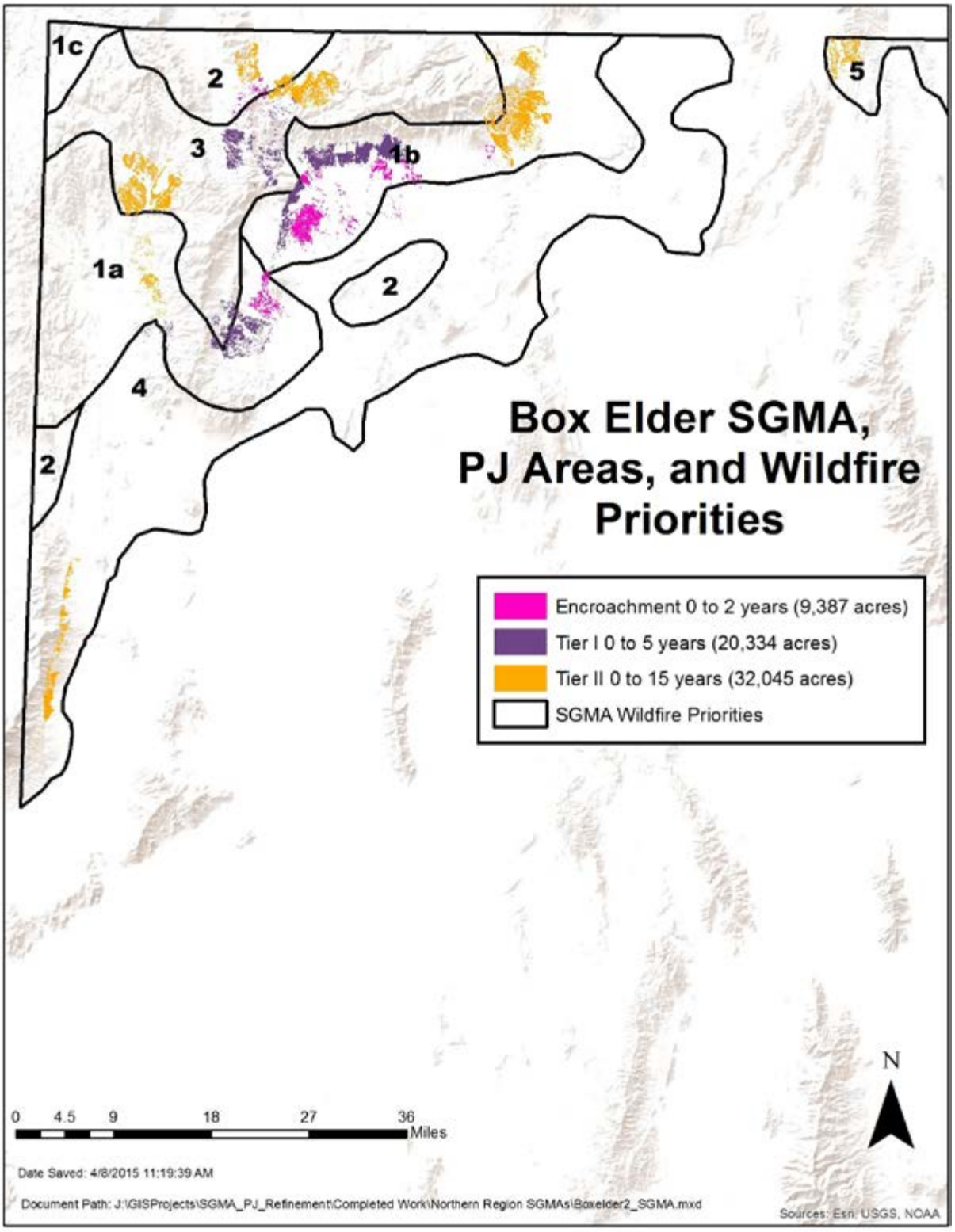
Knick, S., S.E. Hanser, and M. Leu. In press. Ecological scale of bird community response to pinyon-juniper removal. Rangeland Ecology & Management.

Miller, R.F., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2005. Biology, Ecology, and Management of Western Juniper. Oregon State University, Agricultural Experiment Station Technical Bulletin 152.

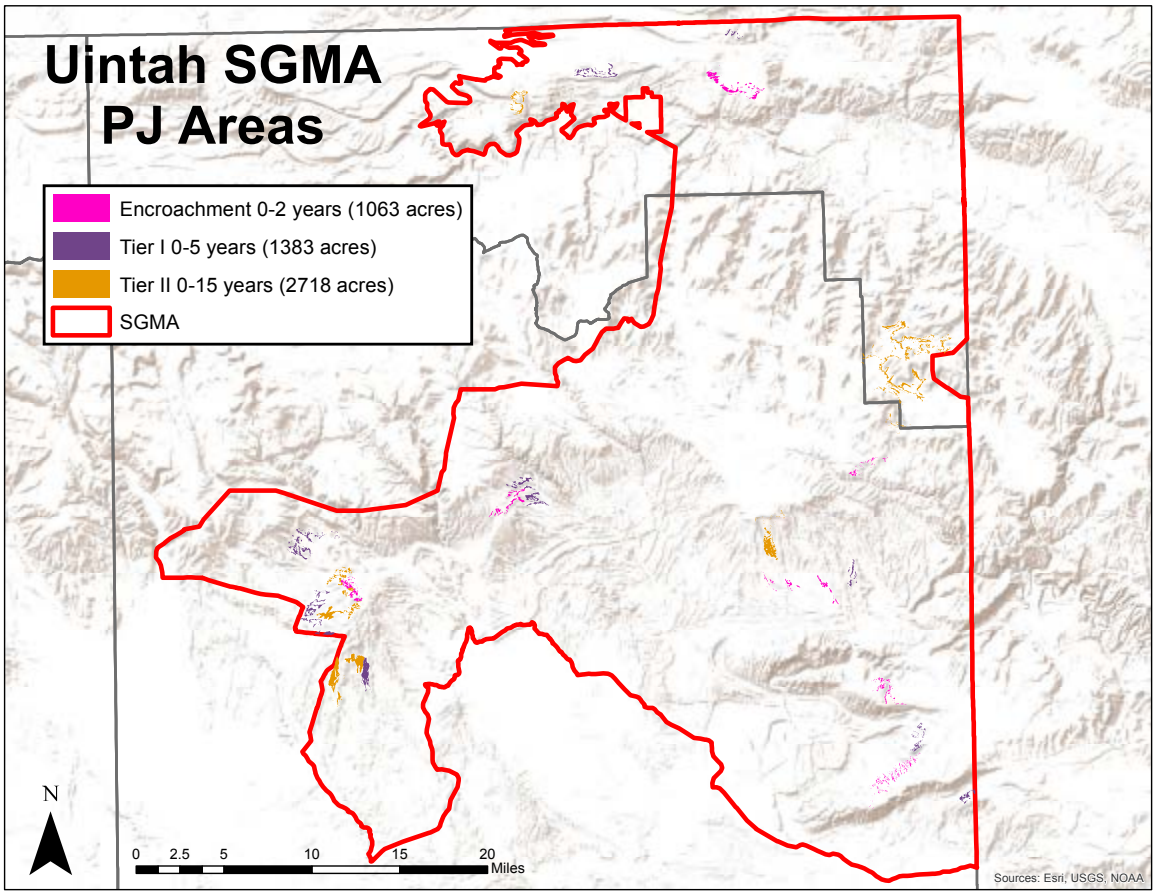
SGI. 2013. Tackling conifer encroachment. Produced by Conservation Media. Sage Grouse Initiative. Video available: http://www.sagegrouseinitiative.com/news-media/ photo-video-gallery/.Miller, R. F., J. D. Bates, T. J. Svejcar, F. B. Pierson, L. E. Eddleman. 2007. Western juniper field guide: asking the right questions to select appropriate management actions. U.S. Geological Survey, Circular 1321.

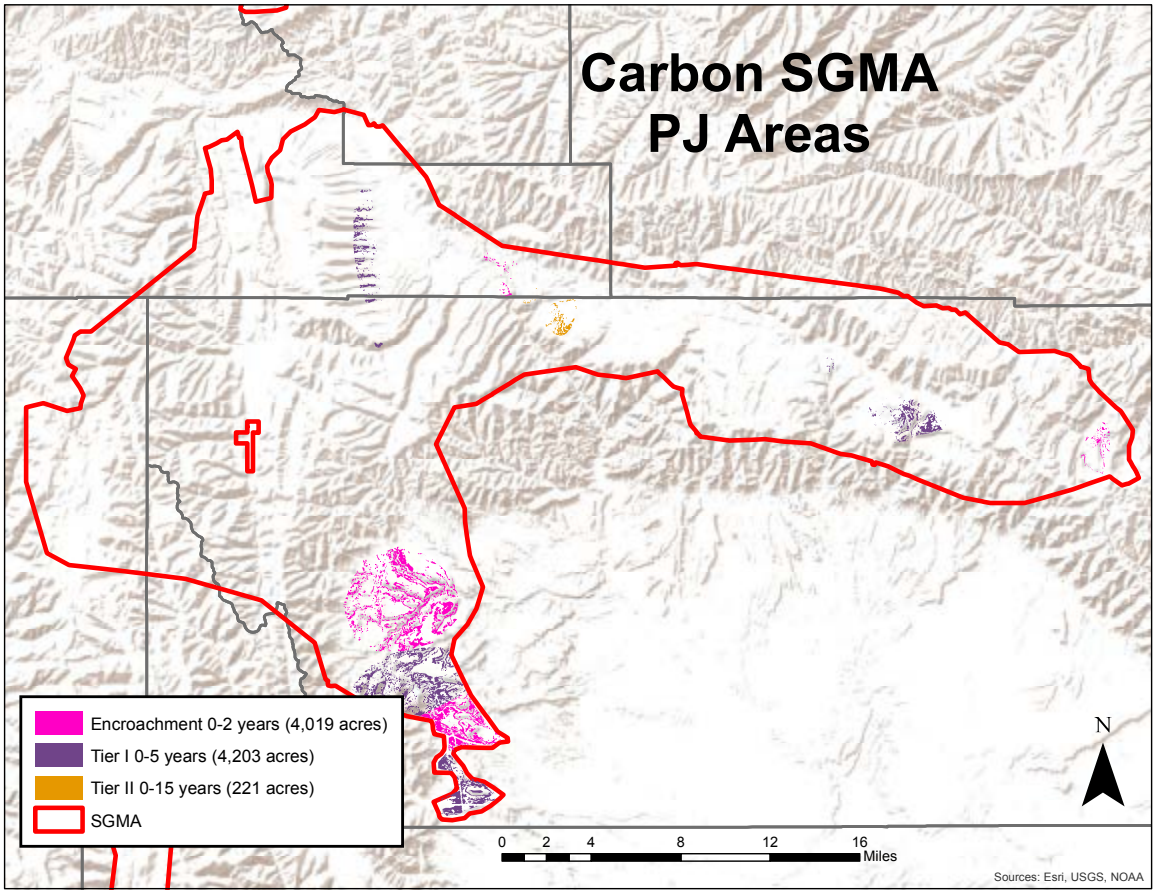
Tausch, Robin J.; Hood, Sharon 2007. Pinyon/juniper woodlands [Chapter 4]. In: Hood, Sharon M.; Miller, Melanie, editors. Fire ecology and management of the major ecosystems of Southern Utah. Gen. Tech. Rep. RMRS-GTR-202. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 57-71.

Pinyon Juniper Removal Maps[1]



[1] Wildfire Priority Boundaries are provided in connection with maps for Box Elder SGMA, Bald Hills SGMA, Sheeprock Mountains SGMA, Ibapah SGMA and Hamlin Valley SGMA. The remaining SGMA do not include priority areas due to the effectiveness of existing wildfire suppression efforts.


Uintah SGMA
PJ Areas
Encroachment 0-2 years (1063 acres)
Tier I 0-5 years (1383 acres)
Tier II 0-15 years (2718 acres)
SGMA
N
0 2.5 5 10 15 20
Miles
Sources: Esri, USGS, NOAA


Carbon SGMA
PJ Areas
Encroachment 0-2 years (4,019 acres)
Tier I 0-5 years (4,203 acres)
Tier II 0-15 years (221 acres)
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Sources: Esri, USGS, NOAA

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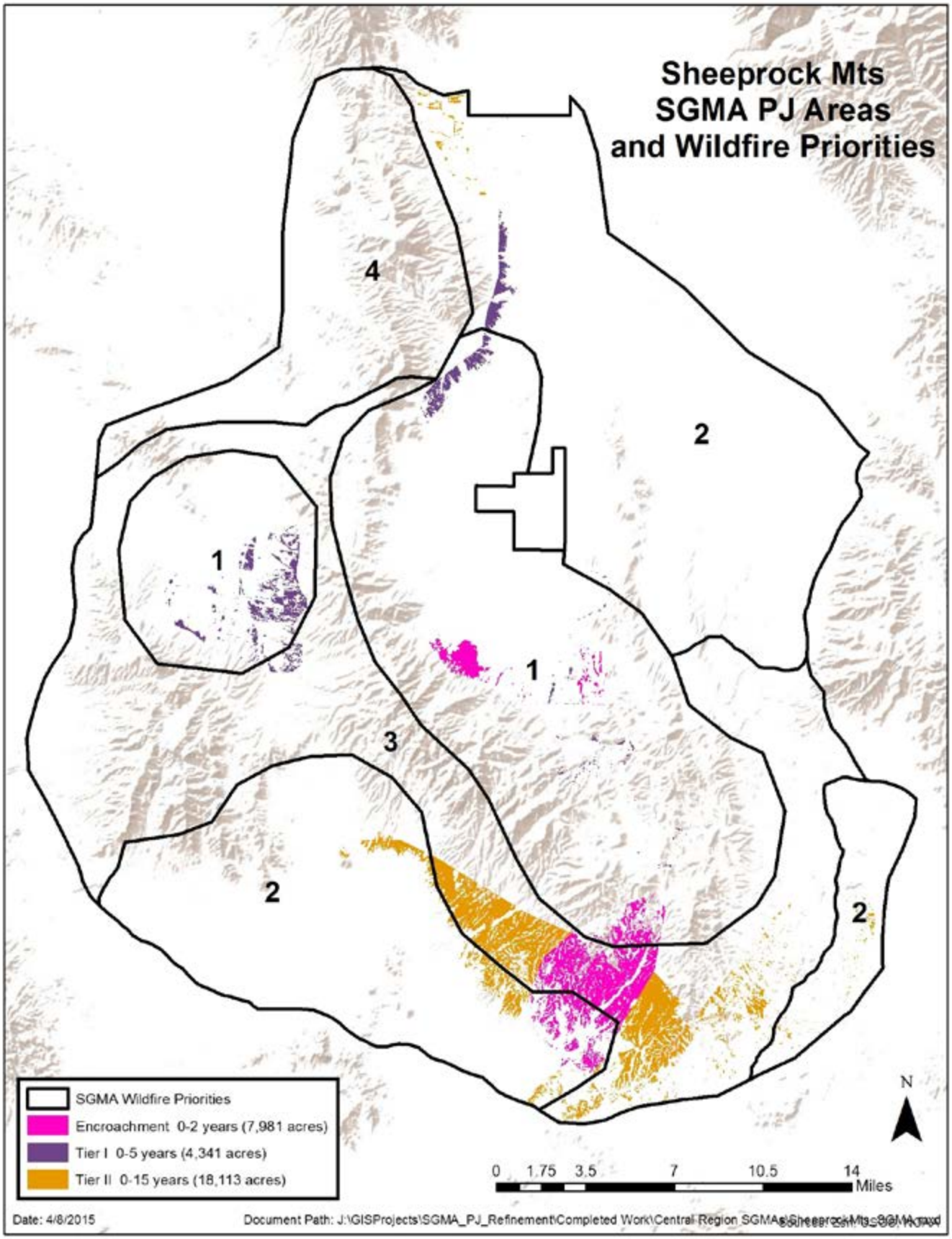
Sheeprock Mts
SGMA PJ Areas
and Wildfire Priorities
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SGMA Wildfire Priorities
Encroachment 0-2 years (7,981 acres)
Tier I 0-5 years (4,341 acres)
Tier II 0-15 years (18,113 acres)
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0 1.75 3.5 7 10.5 14
Miles
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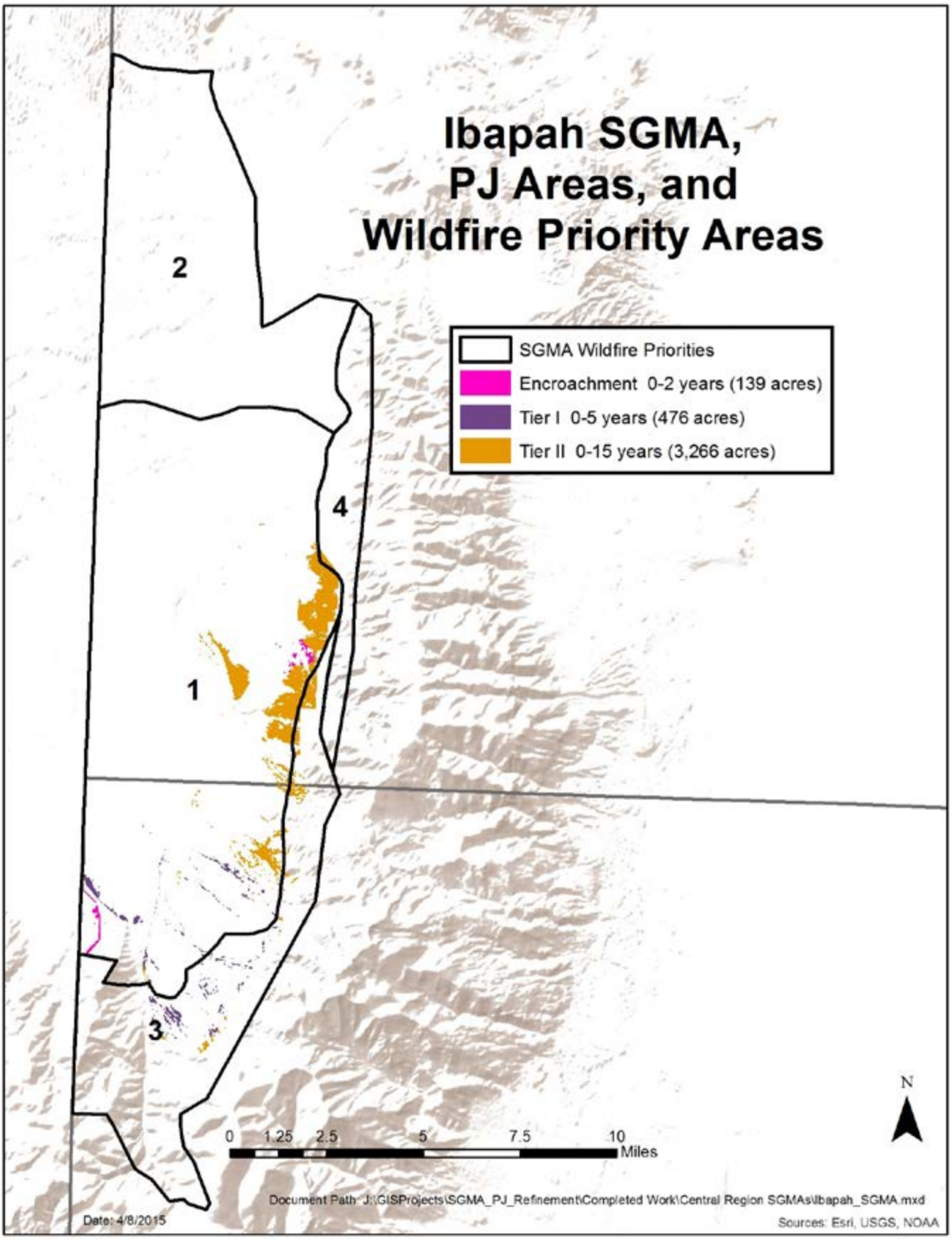
Ibapah SGMA,
PJ Areas, and
Wildfire Priority Areas
SGMA Wildfire Priorities
Encroachment 0-2 years (139 acres)
Tier I 0-5 years (476 acres)
Tier II 0-15 years (3,266 acres)
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Miles
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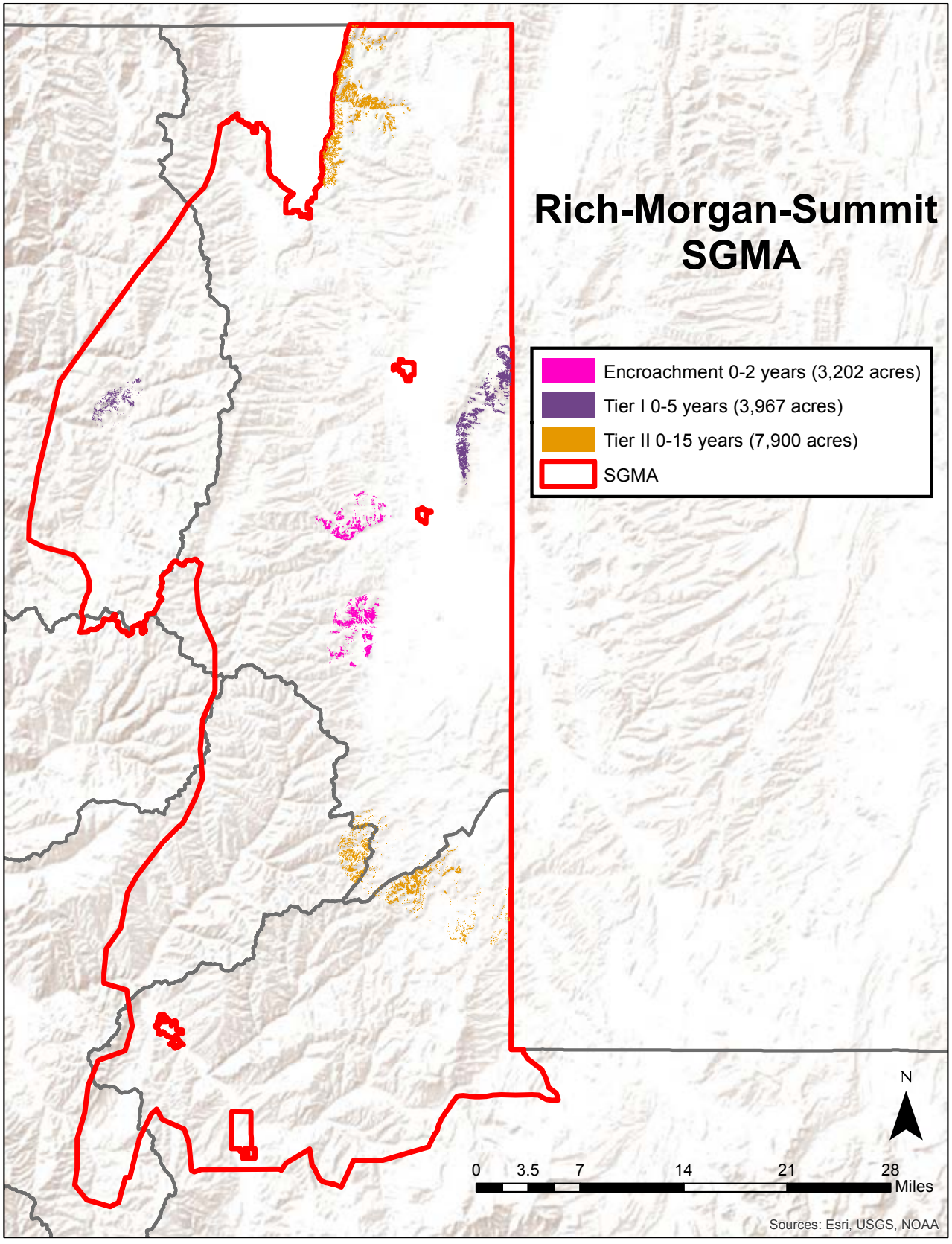
Sources: Esri, USGS, NOAA


Rich-Morgan-Summit SGMA
Encroachment 0-2 years (3,202 acres)
Tier I 0-5 years (3,967 acres)
Tier II 0-15 years (7,900 acres)
SGMA
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3.5
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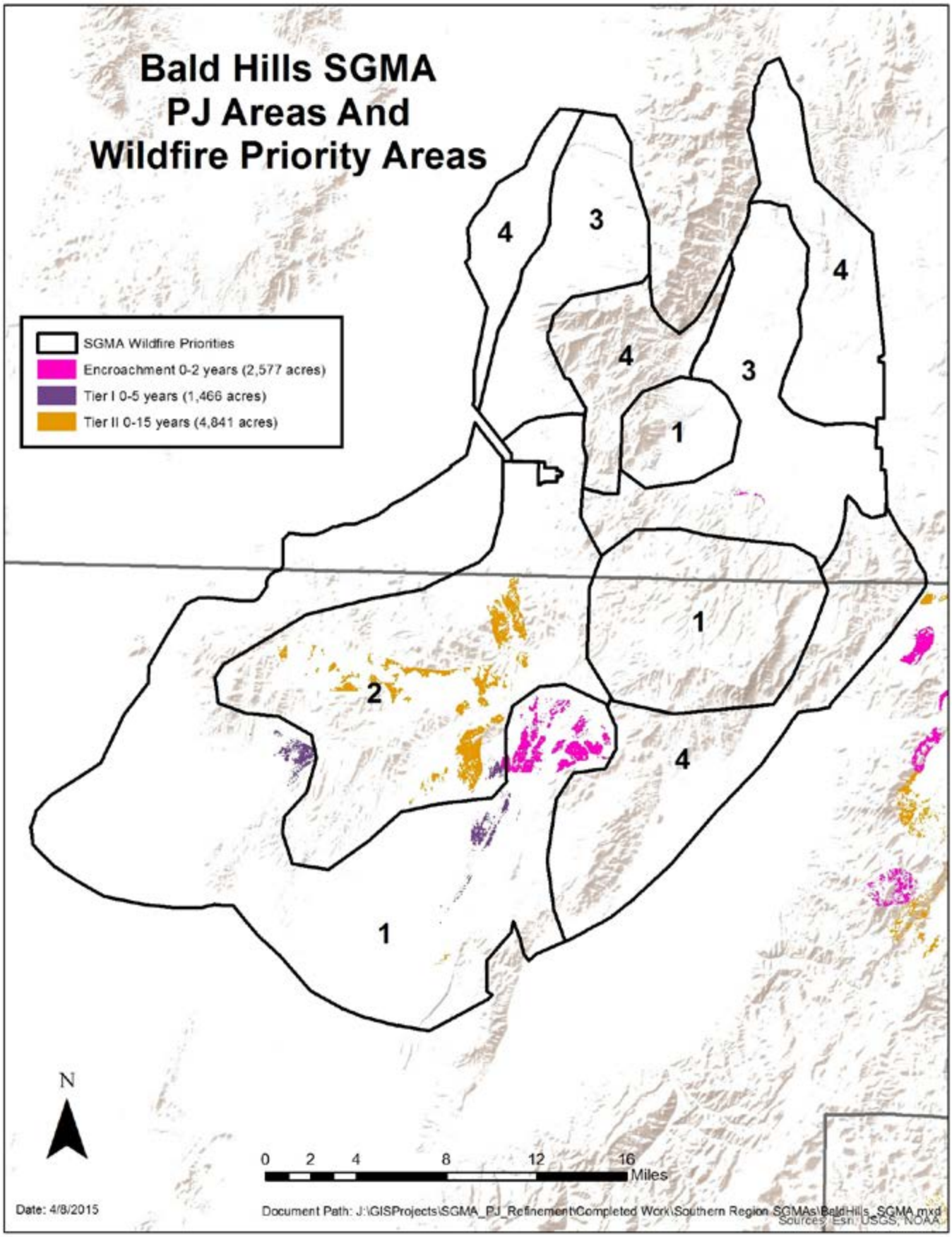
Miles
Sources: Esri, USGS, NOAA


Bald Hills SGMA
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Wildfire Priority Areas
SGMA Wildfire Priorities
Encroachment 0-2 years (2,577 acres)
Tier I 0-5 years (1,466 acres)
Tier II 0-15 years (4,841 acres)
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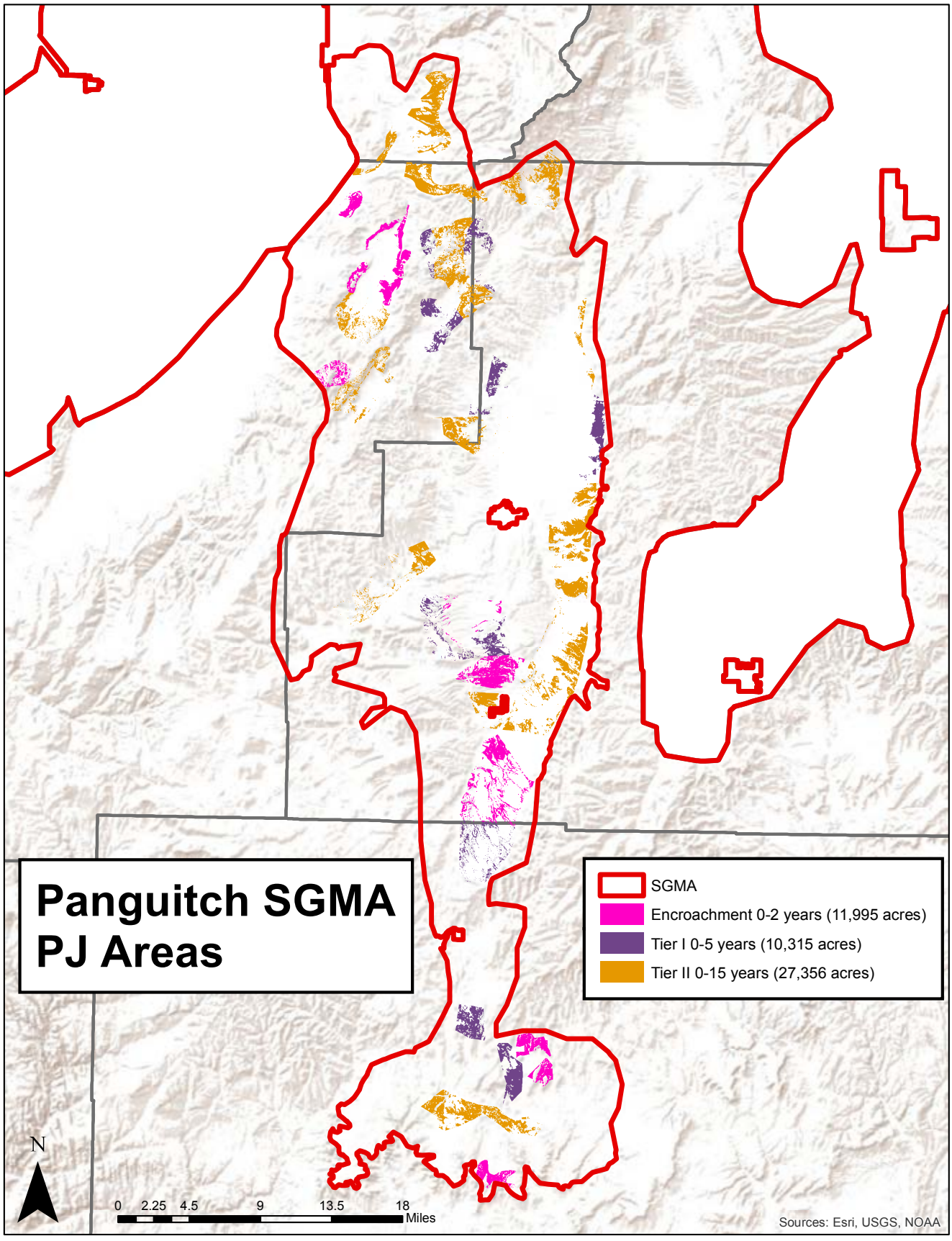
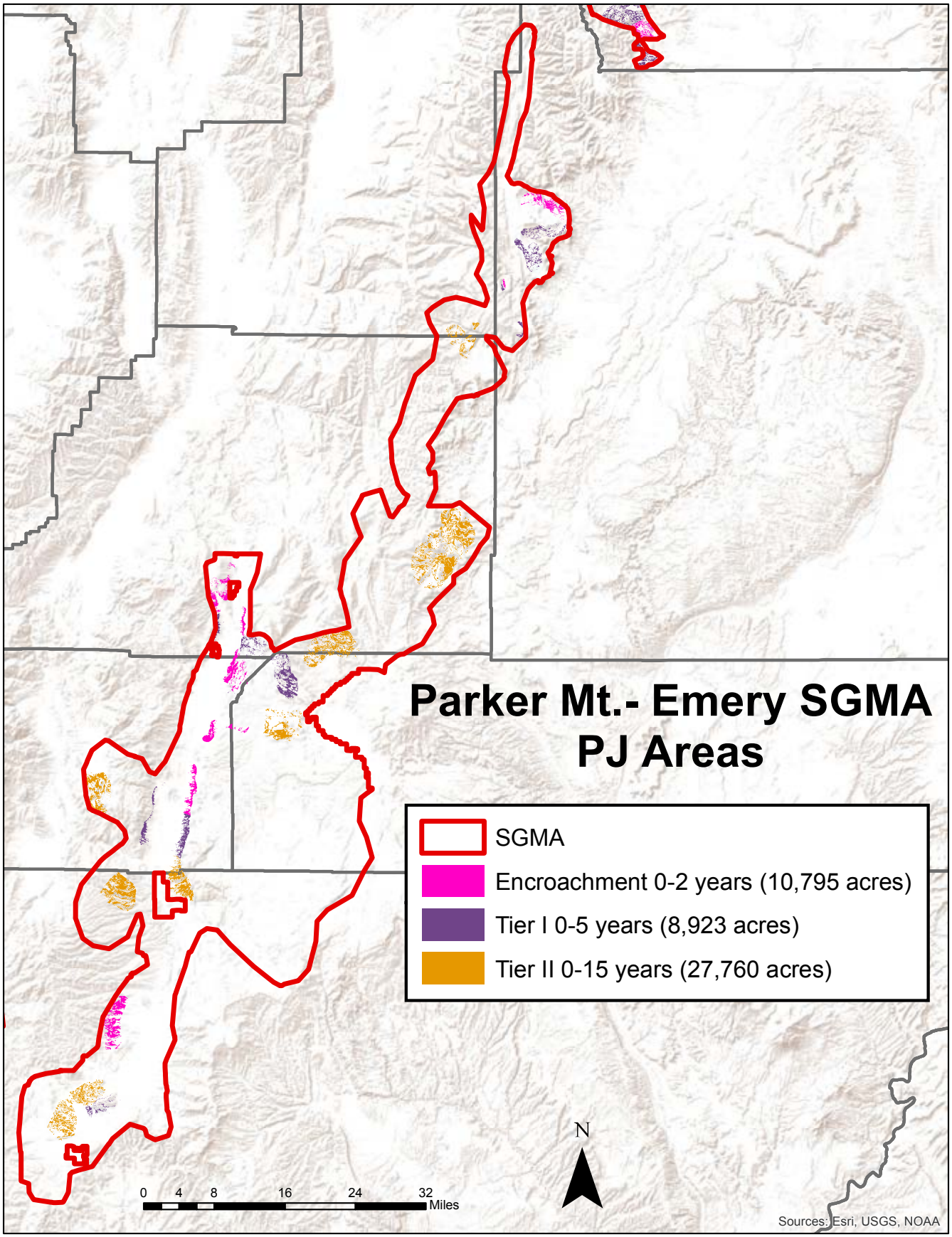
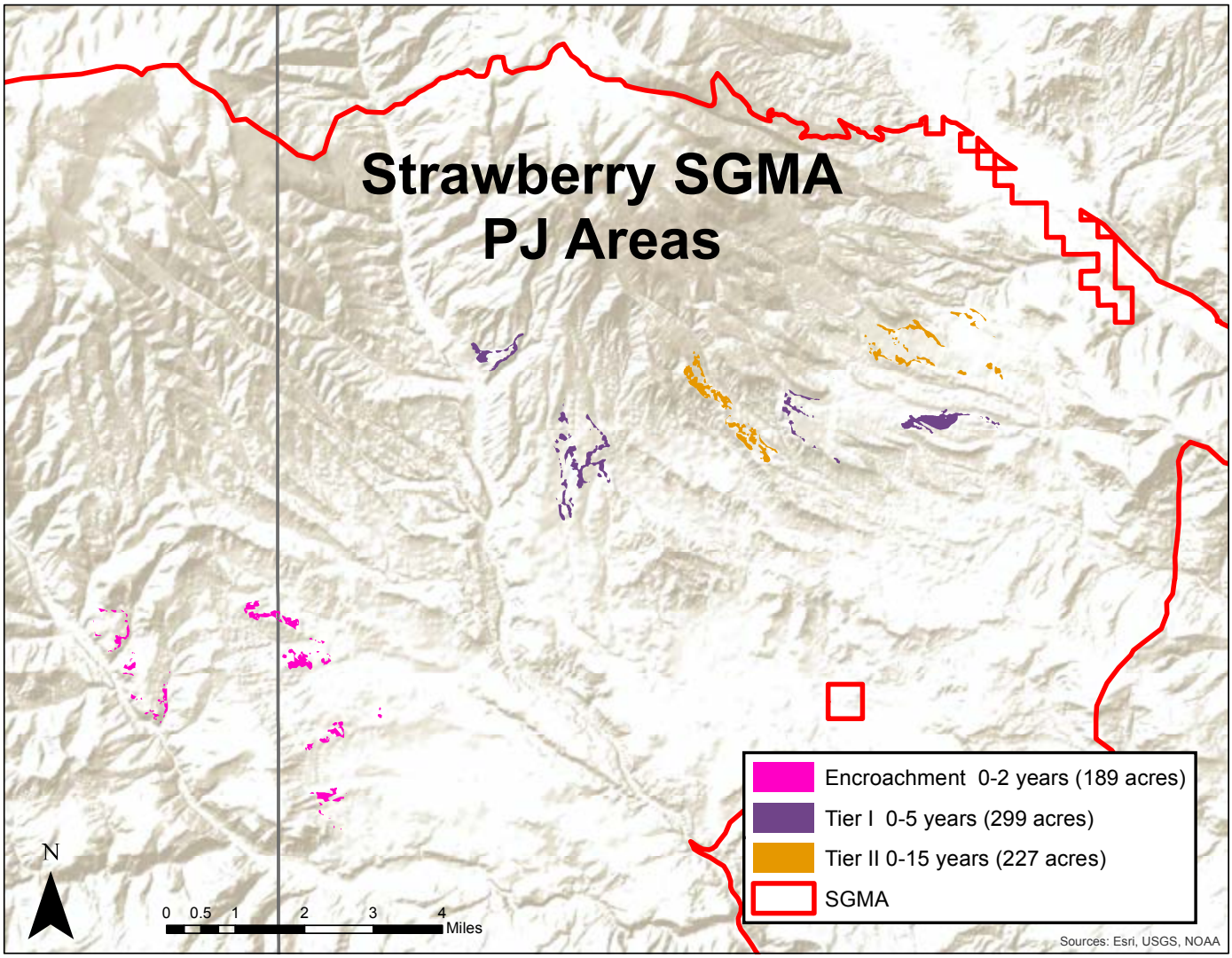

Panguitch SGMA
PJ Areas
SGMA
Encroachment 0-2 years (11,995 acres)
Tier I 0-5 years (10,315 acres)
Tier II 0-15 years (27,356 acres)
N
0 2.25 4.5 9 13.5 18
Miles
Sources: Esri, USGS, NOAA


Parker Mt.- Emery SGMA
PJ Areas
SGMA
Encroachment 0-2 years (10,795 acres)
Tier I 0-5 years (8,923 acres)
Tier II 0-15 years (27,760 acres)
N
0 4 8 16 24 32
Miles
Sources: Esri, USGS, NOAA


Strawberry SGMA
PJ Areas
Encroachment 0-2 years (189 acres)
Tier I 0-5 years (299 acres)
Tier II 0-15 years (227 acres)
SGMA
N
0 0.5 1 2 3 4
Miles
Sources: Esri, USGS, NOAA

UTAH CONSERVATION STRATEGIES *(CONT.)*

Wildfire Management & Restoration

Figure 7. Landscape scale conifer removal in the State of Utah is effectively addressing habitat fragmentation and addressing other important concerns in Sage-grouse habitat.

Overview

Wildfire is a natural occurrence on Utah's landscapes. Many plant and animal species, including Greater Sage-grouse, evolved in an environment having cycles punctuated by natural wildfire.

While Sage-grouse can adapt and even benefit from some fires, disruptions in the natural fire cycle, encroachment of conifers, and the presence of exotic annual grasses such as cheatgrass have presented new challenges. Changes in wildfire frequency and intensity are raising concerns about the cumulative impact of fires within some of the state's Sage-grouse Management Areas (SGMAs).

The State of Utah invests millions of dollars into programs to proactively address wildfire concerns including:

1. prevention;
2. suppression (including rapid response to wildfire in SGMAs); and
3. rehabilitation/restoration to areas affected by wildfire.

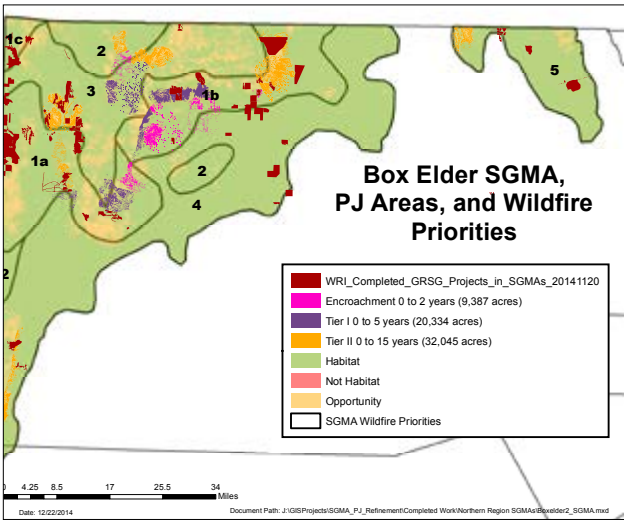


Figure 8. Implementation of Utah's Detailed Conservation Strategies for Wildfire can reduce the acreage burned by up to 85% within impacted SGMAs in the State of Utah.

Progress and Results on Wildfires with Utah's SGMAs

Utah's Watershed Restoration Initiative and Comprehensive Conservation Strategies for Wildfire are producing significant benefits for Sage-grouse habitat in the state of Utah.

In 2007, the Milford Flats fire burned over 350,000 acres in central Utah. While this was an unusually large wildfire, it served as a wake-up call to the state of Utah. In 2008, the Utah legislature provided significant funding for pinyon/juniper removal and post wildfire restoration activities. Since 2008, over 500,000 acres of habitat enhancement and restoration activities have been completed.

The Utah Coordinated Sage-grouse consulting team has conducted a comparative analysis wildfire to determine whether Utah's conservation strategies for wildfire are paying dividends to address wildfire within the state of Utah.

From 1999-2007, the 9 years before these conservation actions, wildfires within the state of Utah burned 628,663 acres within the 5 Utah SGMAs with a heightened wildfire risk. This amounts to 8.7% of acreage within Utah's SGMAs in a 9-year period. As explained in Utah's Conservation Strategies, a handful of wildfires over 20,000 acres account for the vast majority of the acreage burned during this period.

From 2008-2016, the 9 years after these conservation actions were commenced, wildfires within the state of Utah burned 114,111 acres within the 5 Utah SGMAs with heightened wildfire risk. This amounts to 1.5% of acreage within Utah's SMGAs that were impacted by wildfire during the 9-year period. This is an improvement of 82% since 2008. Just as importantly, this means that 514,552 fewer acres were impacted by wildfire in the last 9 years when compared with the previous 9 years from 1999-2007.

The improvement within Utah's SGMAs is significant and promising. Utah's Conservation Strategies utilize the best available science and data regarding the causes of wildfire and mechanisms to reduce acreage impacted. Wildfire is a natural occurance on Utah landscapes and many plant and animal species including Greater Sage-grouse evolved in areas where cyclical wildfire were routine events.

This has not changed. The dramatic improvement in wildfire acreage in recent years result from fewer wildfires (an improvement of 51%), fewer large wildfires, and substantially smaller acreage of large wildfires. More importantly, this demonstrates the importance of Utah's on-the-ground conservation approach which includes:

1. **Prevention, including:**
    a. Fuels management/reduction strategies, and
    b. Fire-zone buffers such as green stripping and firebreaks.
2. **Suppression Strategies, including;**
    a. Prioritizing at-risk habitats,
    b. Providing rapid response strategies, and
    c. Fire control resource allocation.
3. **Post-fire habitat restoration and rehabilitation efforts to:**
    a. Restore desirable vegetation; and
    b. Control of undesirable species, such as cheatgrass.

A comparative analysis for the same periods was conducted in each of the 5 SGMAs affected by wildfire: Box Elder, Bald Hills, Sheep Rock, Hamlin Valley and Ibapah. The table in Figure 9 shows the total number of wildfires and the acreage impacted in each of these SGMAs from 1999-2007 and 2008-2016.

As can be seen by a review of the data in Figure 9, four of the 5 SGMAs showed significant improvement. However, Sheep Rock SGMA experienced an increase in acreage burned. In fact, 6,950 acres burned within the Sheep Rock SGMA from 1999-2007. While 19,390 acres burned from 2008-2016. This represents a 3-fold increase. The total numbers of wildfires also increase during the same periods from 149 wildfires to 176 wildfires. As with other areas, a handful of large fires accounted for most of the acreage burned. Just 7 fires in Sheep Rock SGMA accounted for 83% of the acreage burned. As we analyzed potential causative factors, one pattern emerged. From 2008-2016, 98% of total acres burned were wildfires which started on BLM and Forest Service land within Sheep Rock SGMA.

Further implementation of Utah's conservation strategies have the potential to further reduce wildfire risk in the state of Utah. Portions of Utah's SGMAs still contain areas which are prone to large wildfires. There also remain the possibility of large catastrophic wildlfires during certain wildfire years. What is clear, is that Utah's conservation strategies are significantly reducing these risks. The best way to continue to protect Sage-grouse and their habitats from Utah wildlfires, is implementation of these on-the-ground conservation efforts.

Figure 9. Wildfire Trends From 1999-2017

Zone	Box Elder	Bald Hills	Sheep Rock	Hamlin Valley	Ibapah
Average fires per year					
1999-2007	25	38	16.5	21	0.67
2008-2017	11.1	13	19.5	7	0.22
% Improvement	56%	66%	-18%	66%	68%
Average acres burned					
1999-2007	21,103	46,114	772	1,351	510
2008-2017	5,487	4,343	2,145	510	183
% Improvement	74%	91%	-179%	63%	64%

WILDFIRE MANAGEMENT AND RESTORATION

Overview: *Wildfire is a natural occurrence on Utah's landscapes. Many plant and animal species, including Greater Sage-grouse, evolved in areas where cyclical wildfires were routine events. While Sage-grouse can adapt and even benefit from some fires, disruptions in the natural fire cycle, encroachment of conifers and the presence of exotic annual grasses such as cheatgrass have presented new challenges. Changes in wildfire frequency and intensity are raising concerns about the cumulative impact of these fires within some of the state's Sage-Grouse Management Areas (SGMAs). The state of Utah invests millions of dollars into programs to proactively address wildfire concerns including: (1) prevention; (2) suppression (which includes rapid response to wildfire in SGMAs); and (3) rehabilitation/restoration in areas affected by wildfire. Utah's Conservation Plan for Greater Sage-Grouse uses the best available science to reduce the threat of wildfire on Greater Sage-grouse habitats.*

Affected SGMAs: Box Elder, Bald Hills, Sheep Rock Mountains, Hamlin Valley and Ibapah.

Wildfire Management Strategies for Sage-Grouse

In Utah, wildfire is an important area of emphasis for Greater Sage-grouse conservation. Utah's Conservation Plan for Greater Sage-Grouse (the Conservation Plan) indicates, "Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to Greater Sage-grouse in Utah. Immediate, proactive means to reduce or eliminate the spread of invasive species, particularly cheatgrass (*Bromus tectorum*) after a wildfire, is a high priority."

These concerns also appear in the U.S. Fish and Wildlife Service 2010 Rule, which found that Greater Sage-grouse was "warranted but precluded" from listing. The rule specifically addressed the threat of wildfire:

"Many of the native vegetative species of the sagebrush-steppe ecosystem are killed by wildfires, and recovery requires many years. As a

Figure 1 - An airtanker drops retardant in Utah pinyon/ juniper wildfire.

result of this loss of habitat, fire has been identified as a primary factor associated with Greater Sage-grouse population declines (citations omitted)…In nesting and wintering sites, fire causes direct loss of habitat due to reduced cover and forage (citation omitted)."

Suppression costs in the western United States have exceeded one billion dollars in each year since 2000 and reached $1.7 billion in 2013[1]. Western wildfires are not only costly to suppress, but they also can degrade the value of vegetative communities and working landscapes. These impacts can substantially affect Greater Sage-grouse. Research suggests that changes in wildfire frequency are directly linked to conifer encroachment and the proliferation of exotic annual grasses such as cheatgrass (*Bromus Tectorum*) in sagebrush ecosystems. The U.S. Department of Agriculture's Rocky Mountain Research Station explains how high-density conifer stands can lead to catastrophic wildfires:

"Extreme burning conditions (high winds, high temperatures, and relatively low humidity) in high density (Phase III) stands are resulting in large and severe fires that result in significant losses of above- and below-ground organic matter (*Sensu Keeley* 2009) and have detrimental ecosystem effects (Miller et al. 2013). Strategic and targeted treatments to reduce these risks can help land managers protect key habitats and preserve underlying Sage-grouse population dynamics to reduce the risks of wildfire."[2]

Invasive exotic annual grasses, like cheatgrass in the Great Basin, provide fine-scale fuels that increase the propensity for fires, even from natural sources such as lightning. The presence of these grasses not only shortens the intervals between fires, but also increases the overall acreage burned in a typical fire. When combined with increased fuel loads from encroaching conifer woodlands, the risk of catastrophic wildfire in Sage-brush ecosystems has increased substantially.

[1]http://www.usatoday.com/story/weather/2014/07/23/western-wildfires-climate-change/13054603/

[2] "Using resistance and resilience concepts to reduce impacts of invasive annual grasses and altered fire regimes on the sagebrush ecosystem and Greater Sage-grouse: A strategic multi-scale approach"

How Wildfire Affects Sage-Grouse

To effectively address the threat posed by wildfires, it is important to understand how they impact Greater Sage-grouse populations. Wildfire affects Sage-grouse in four fundamental ways:

- Destruction of sagebrush and other desirable food sources
- Proliferation of exotic annual grasses that compete with desirable food sources including forbs, native grasses and sagebrush
- Increased frequency and severity of wildfires fueled by cheatgrass or other exotic annual grasses.
- Fragmentation of habitat by creating areas which are less suitable for Sage-grouse populations.

In 2013, a team of representatives from the U.S. Fish and Wildlife Service and various Sage-grouse states met to develop recommendations for reducing threats to Greater Sage-grouse and their habitats. The Greater Sage-Grouse Conservation Objectives: Final Report, which resulted from those meetings in February 2013, addresses concerns related to wildfire and post-wildfire effects:

"Fire (both lightning-caused and human-caused) in sagebrush ecosystems is one of the primary risks to the Greater Sage-grouse, especially as part of the positive feedback loop between exotic annual grasses and fire frequency."

Figure 2 – Sage-grouse chicks take advantage of a restoration area during summer brood-rearing period. Insects form an important part of the Sage-grouse diet during this important growth period.

In other words, these experts reiterate the nexus between exotic annual grasses and the increased frequency of wildfires.

Cheatgrass proliferation after a wildfire is a concern, particularly in lower elevation areas which correspond with warm and dry soil regimes (xeric areas.) Unlike higher elevation, cool and moist areas, areas with xeric soil regimes areas are: (1) more prone to repeated wildfire; and (2) less responsive to restoration of native forbs, grasses and brush species. These areas also tend to include some nesting, brood-rearing and winter habitat.

The Conservation Plan is investing in solutions to address these challenges. In fact, the Utah Watershed Restoration Initiative and its partners have spent tens of millions of dollars to restore hundreds of thousands of acres affected by

wildfires, both inside and outside of Utah's SGMAs.

Proven Strategies for Wildfire

Utah wildfire experts and Sage-grouse biologists are working together on strategies to address the threat of wildfire. The primary objective of these strategies is to protect sagebrush habitats from wildfire. It is much easier to increase the resiliency of Sage-grouse habitat by proactively managing sagebrush ecosystems before sagebrush is burned in a wildfire. After sagebrush is burned in a wildfire, restoring or rehabilitating areas post-wildfire can be difficult and expensive. This is particularly true of Sage-grouse breeding and winter range.

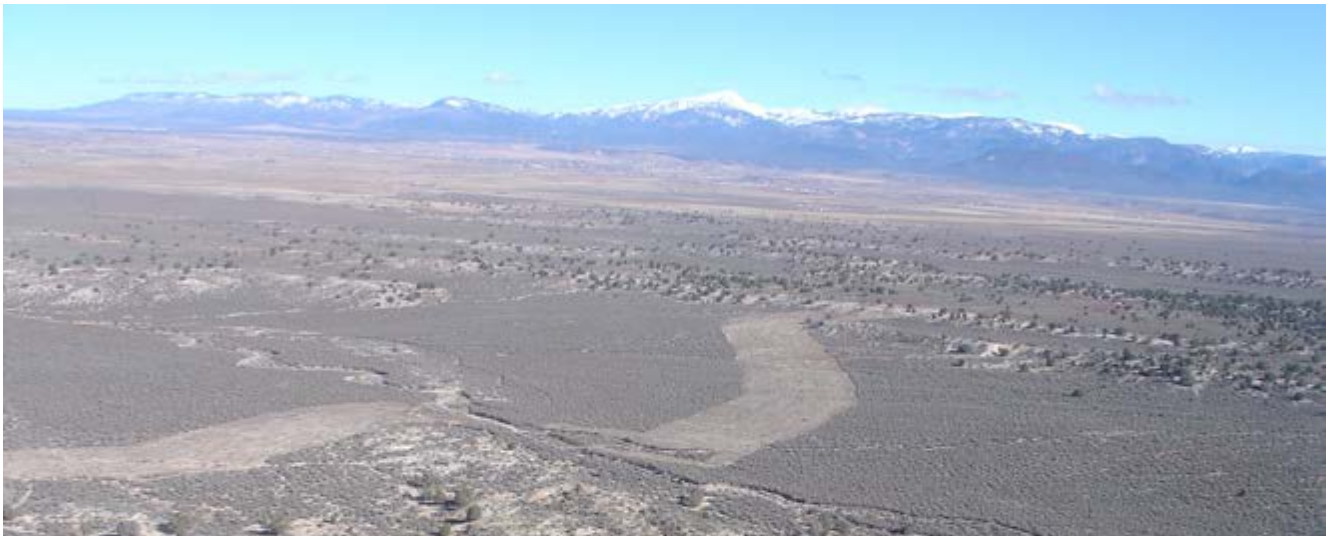
If sagebrush is destroyed by wildfire, the process of natural vegetative succession may take years before healthy native sagebrush plant communities are fully restored. The moisture and temperature conditions needed for successful reseeding of sagebrush restoration may not be available every year. This is why money spent on prevention and suppression strategies makes good economic sense. Prevention not only protects sagebrush by reducing the number and frequency of new fires, but it can also help reduce the size of fires that do start. This saves millions of dollars that would otherwise be spent on controlling wildfires and restoring habitats after a wildfire.

Using specific criteria and the best-available science, Utah has developed a comprehensive strategy and detailed plan to address threats of wildfire and post-wildfire effects. Utah's approach focuses on reducing wildfire threats to habitats while ensuring that the habitat continues to work for Greater Sage-grouse.

This methodology is explained by the Sage-grouse National Technical Team (NTT) publication "A Report on National Greater Sage-grouse Conservation Measures," dated Dec. 21, 2011:

"These programs address the threats resulting from wildfires and post-wildfire effects along with a program (fuels management) designed to try to reduce these impacts. Together these programs provide a significant opportunity to influence

Figure 3 – When healthy landscapes are combined with fuels reduction and greenstripping (as shown below), sagebrush ecosystems are more resistant to wildfire.



sagebrush habitats that benefit Sage-grouse…it is critical not only to conduct management actions that reduce the long-term loss of sagebrush but also to restore and recover burned areas to habitats that will be used by Sage-grouse (Pyke 2011)."

Utah's Conservation Plan focuses on a three-pronged approach to address the threat of wildfire:

1. Prevention, including:
    a. Fuels management/reduction strategies and
    b. Fire-zone buffers such as greenstripping and firebreaks.
2. Suppression strategies, including:
    a. Prioritizing at-risk habitats,
    b. Providing rapid response strategies and
    c. Fire control resource allocation.
3. Post-fire habitat restoration and rehabilitation efforts to:
    a. Restore desirable vegetation and
    b. Control undesirable species such as cheatgrass.

Prevention

Money spent on prevention results in significant cost savings when compared with fire-suppression and rehabilitation efforts. Additionally, prevention is the best way to preserve sagebrush and keep habitats from fragmentation. Prevention is one of the most important parts of Utah's Sage-grouse conservation strategy for wildfire. Prevention involves both the reduction of fuels and the creation of buffers to help control wildfires that occur. The use of fuels-reduction strategies and natural buffers are proven solutions that help increase the resiliency of sagebrush habitats.

Fuels reduction, has become increasingly important in light of pinyon/juniper encroachment and the proliferation of exotic annual grasses. Removing pinyon/juniper and exotic annual grasses can help control both the frequency and severity of wildfires. The state of Utah invests millions of dollars into pinyon/juniper removal projects every year. Utah's Sage-grouse conservation strategy includes detailed plans for

Figure 4 - Conifer removal projects allows the sagebrush understory to flourish and strengthen the ecosystem's resilience to wildfire.

removing encroaching pinyon/juniper from sage-brush habitats. Conifer removal plays an essential role in addressing the threat of catastrophic wildfires. For more information on Utah's conifer-removal efforts, see the Utah Sage-grouse Conservation Strategies report on Pinyon/Juniper Removal for Proactive Habitat Restoration.

Most strategies for the direct removal of exotic annual grasses are either unproven or experimental in nature. However, grazing and post-fire reclamation efforts are proven methodologies to help control exotic annual grasses, particularly cheatgrass. Grazing can help immediately reduce the volume and contiguous nature of exotic annual grasses. Post-wildfire reclamation efforts are also vitally important to control the proliferation of cheatgrass. The treatments Utah uses to control the spread of cheatgrass will be discussed more detail on pages 7 and 8 of this report.

Suppression

Utah has a strong-track record of wildfire suppression. Ninety-eight percent of wildfires are stopped before they burn 1,000 acres. Small sporadic fires have minimal impacts on Sage-grouse habitats. Moreover, some research has found that when the cumulative impact of smaller fires is not excessive, they can actually be helpful to Greater Sage-grouse:

"Small fires may maintain suitable habitat mosaic by reducing shrub encroachment and encouraging understory growth…Sage-grouse using burned areas…may preferentially use the burned and unburned edge habitat."[3]

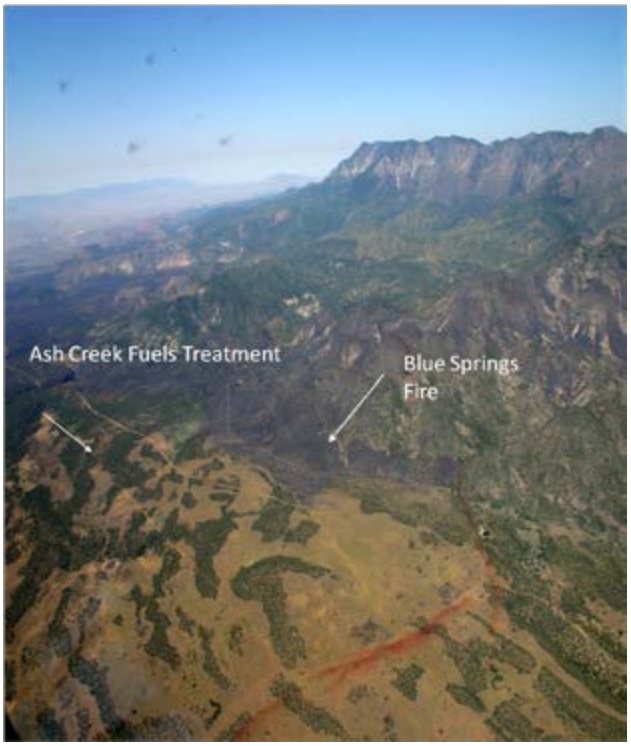


Figure 5 - Conifer removal projects provided important fire breaks which allowed crews to stop progression on blue Springs Fire saving thousands of acres of habitat.

Utah's fire-suppression strategy objective is to suppress all wildfires within SGMAs, with the goal of restricting or containing wildfires in these areas to the normal range of fire activity. Suppression of wildfires within Sage-grouse habitat is prioritized in Utah's fire plan immediately after human life and protecting communities. Utah's wildfire response strategies are evolving as additional information is learned about wildfire within key Sage-grouse habitats.

Utah's rapid response strategy involves ongoing cooperation between federal, state and county fire suppression entities. It also prioritizes resource allocation based on the threat potential inside and outside of at-risk SGMAs. Where resources are limited, Utah's wildfire suppression strategy provides the following degrees of prioritization:

[3][U.S. Fish and Wildlife Service 2010 Rule]

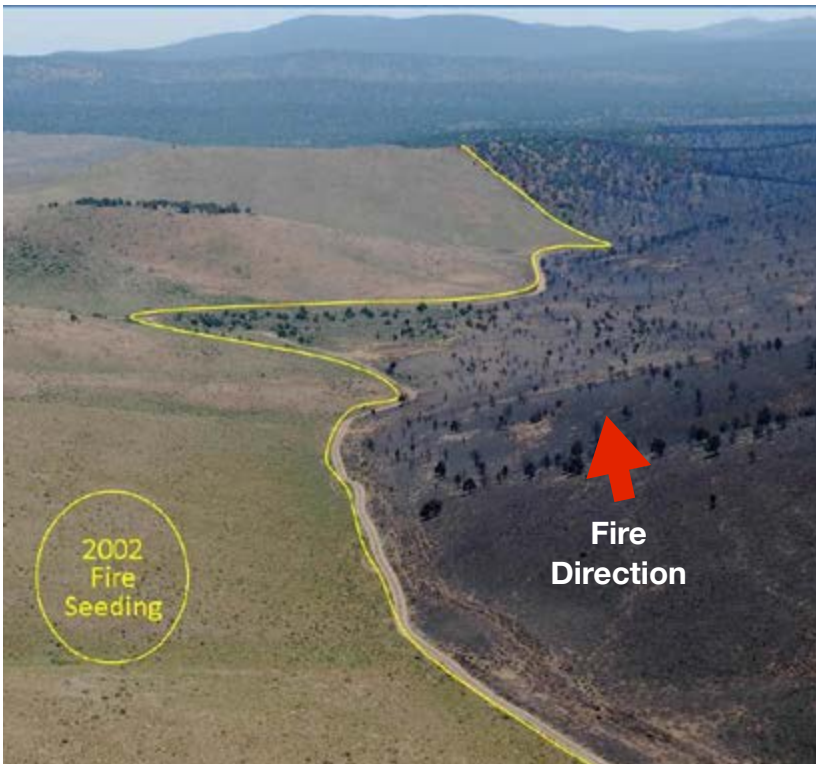


Figure 6- During critical drought conditions thousands of acres were saved from the fast moving Black Mountain Fire by a previous reseeding project of the Utah Watershed Restoration Initiative.

1. Highest priority areas within highest priority SGMAs
2. Prioritization among at-risk SGMAs
3. All SGMAs
4. Any identified connectivity corridors between SGMAs
5. All sagebrush habitats

Utah's conservation strategies stress the importance of using mechanical removal of pinyon and juniper trees within sagebrush ecosystems to eliminate the need for prescribed burns on Sage-grouse breeding and winter habitats. This not only protects sagebrush from unnecessary long-term removal, it ensures that treatment areas are suitable for utilization by Greater Sage-grouse after treatments are completed.

Restoration and Rehabilitation

There is a growing concern about the post-wildfire effects in Sage-grouse habitat. This is one of the reasons it is extremely important to prioritize prevention and suppression strategies for SGMAs which are most susceptible to wildfires and cheatgrass proliferation. It also means that restoration and rehabilitation after a wildfire is helpful. Post-fire strategies for cheatgrass may involve chemical or biological pre-emergents which actively suppress cheatgrass growth. Suppression of cheatgrass, when combined with reseeding of desired grasses, forbs and shrubs is a key part of Utah's restoration strategies after wildfires. Not only can these efforts promote the restoration of desirable vegetation, but they can also help control cheatgrass proliferation after a wildfire.

"The return on investment from this one wildfire alone potentially saved millions of fire-suppression dollars and clearly shows how healthy ecosystems are likely to thrive when post fire rehabilitation efforts are implemented successfully."

—PAUL BRIGGS, DISTRICT FUELS PROGRAM MANAGER

Before a wildfire, cheatgrass is approximately 1% of the understory vegetation in areas that have not previously burned. In the absence of wildfire, the presence of native grasses, forbs and brush help

limit the infiltration of cheatgrass. When wildfire occurs, cheatgrass is often the first plant to emerge, often at much higher densities than before the fire. In this way, the biology of cheatgrass is designed to compete with other plant species in response to wildfire.

Utah's strategy is proving to be very effective in controlling the spread of cheatgrass. After a wildfire, a chemical pre-emergent, which is specific to cheatgrass, is applied to the burned area. The area is then reseeded with native (and in some situations non-native) forbs, grasses and brush. Additionally, multiple reseeding of these areas can be utilized to take advantage of intermittent years where soil temperatures and moisture are favorable for sagebrush restoration. The pre-emergent artificially suppresses cheatgrass growth, which gives the newly reseeded area's forbs, grasses and brush a head-start. In most cases, a second application of the cheatgrass specific pre-emergent is unnecessary. Although a temporary increase in cheatgrass density may occur in the second year, the early-establishment allows desirable plants to more effectively compete with cheatgrass. In many instances, by the third year cheatgrass will return to lower densities within the understory vegetation.

The data shows that this strategy not only helps control cheatgrass proliferation, but it also helps keep cheatgrass densities at levels that minimize the impact on Sage-grouse habitat use. Just as important, by re-establishing desired vegetative communities, the natural processes of plant succession can be restored. This helps ensure that desired forbs, grasses and sagebrush will be restored in ways that will support Greater Sage-grouse populations long-term.

Figure 7 – Sage-grouse actively use winter habitats that have healthy sagebrush populations.

The Report on National Greater Sage-grouse Conservation Measures is consistent with Utah's approach on these post-wildfire restoration strategies:

"Use of native plant seeds for [Emergency Stabilization and Rehabilitation] seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet Sage-grouse habitat conservation objectives (Pyke 2011). Re-establishment of appropriate sagebrush species/ subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts."

By implementing proven prevention, suppression and rehabilitation strategies, the state of Utah is effectively addressing challenges presented by wildfire and post-wildfire effects, including cheatgrass proliferation and dominance.

Utah's Investment to Address Wildfire

The state of Utah has a track record of investing in prevention, suppression and rehabilitation projects, as well as ensuring that those treatment areas work for Greater Sage-grouse. Since 2006, approximately 560,000 acres of habitat has been treated through Utah's Watershed Restoration Initiative. Many of these projects directly address threats of wildfire to Sage-grouse habitats. Utah's methodology for assessing treatment areas relies on years of experience and application of the best available science. Factors considered includes:

1. Characteristics of sagebrush habitats
2. Sage-grouse utilization of those habitats
3. Soil temperature and moisture regimes
4. Likelihood of rehabilitation/restoration success

Using these and other criteria, experts in the state of Utah are able to assess areas where additional pre-suppression projects would provide the most benefit. This information also helps inform prioritization of suppression and rehabilitation efforts.

Utah's systematic approach follows the suggested management practices of the Natural Resource Conservation Service (NRCS) Sage-grouse team, which encourages criteria-based methodology, "Natural Resource managers are seeking coordinated approaches that focus appropriate management actions in the right places to maximize conservation effectiveness (Wisdom and Chambers 2009; Murphy et al. 2013)."

The state of Utah has systematically identified the SGMAs where there is a heightened risk of wildfire and post-wildfire effects. Fortunately, many of Utah's SGMAs are not at a heightened risk. A comparatively small percentage of the acreage within these areas have been burned by wildfires during the last 20 years.

Other SGMAs are not only impacted by wildfire, but they are also at a heightened risk of post-wildfire effects. These areas have a higher overall percentage of land that has been burned by wildfire. Additionally, these SGMAs have large

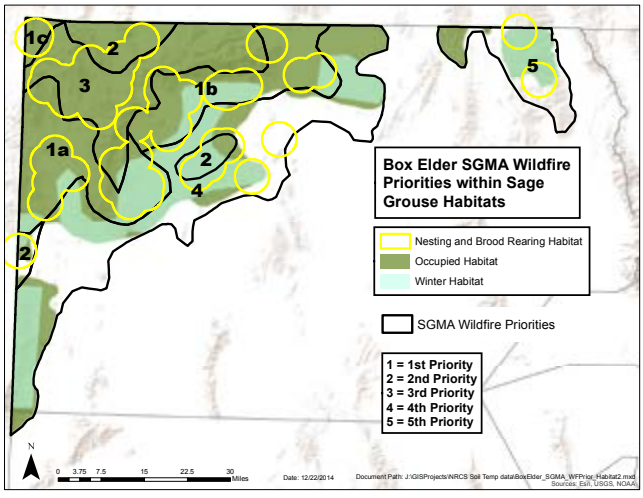


Figure 8 - Wildfire prioritization overlaid with Sage-grouse habitat utilization demonstrates importance of a multi-criteria approach in developing detailed wildfire strategies.

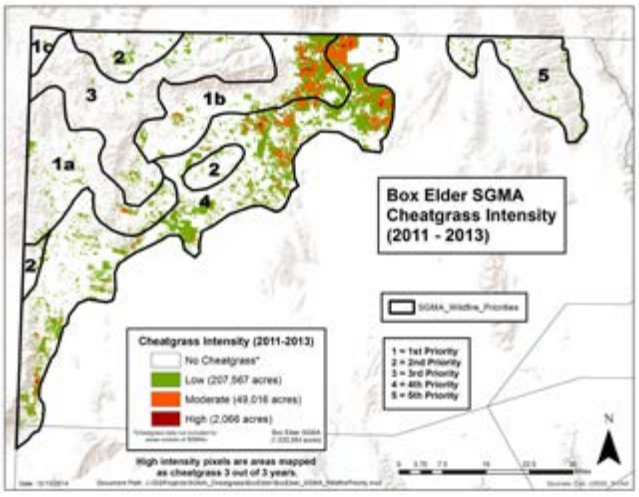


Figure 9 - Cheatgrass intensity is strongly considered when developing wildfire priority strategies within SGMAs.

areas with soil temperature and moisture regimes that are more susceptible to cheatgrass proliferation. These areas may also contain habitats where it is more difficult to successfully reestablish native forbs, grasses and brush. This is particularly true of the five SGMAs that lie within Utah's Great Basin. Language in the U.S. Fish and Wildlife Service's 2010 "Warranted but Precluded" finding confirms that areas within the Great Basin are at the greatest risk of wildfire, "Although fire alters sagebrush habitats throughout the greater Sage-grouse range, fire disproportionately affects the Great Basin (Baker et al. in press, p. 20)…and will likely influence the persistence of Greater Sage-grouse populations in the area."

The five Utah SGMAs that lie within the Great Basin include Box Elder, Bald Hills, Sheeprock Mountains, Hamlin Valley and Ibapah. These five areas hold 26% of the Sage-grouse in the state of Utah. A comparison of these five SGMAs and the 6 SGMAs outside of the Great Basin is helpful. Accumulated acreage affected by wildfire in Utah's SGMAs was closely tracked from 1995-2012.

Utah's five SGMAs within the Great Basin have had an average of approximately 10% of the overall habitat burned by wildfire since 1995. In contrast, the average for Utah's six SGMAs outside the Great Basin is much lower. They have only had approximately 1.8% of their habitat burned by wildfire since 1995. By focusing pre-suppression treatment efforts within the Great Basin SGMAs that are more prone to large acreage wildfires, Utah is proactively working to protect suitable habitat in areas with soil types that are more prone to the infiltration and persistence of cheatgrass and other exotic annual grasses.

Utah's proactive strategies are protecting Greater Sage-grouse habitats. In particular, the state's strategy of prioritizing prevention, suppression and rehabilitation efforts are proactively addressing challenges presented by wildfire and post wildfire effects in areas that are at the greatest risk.

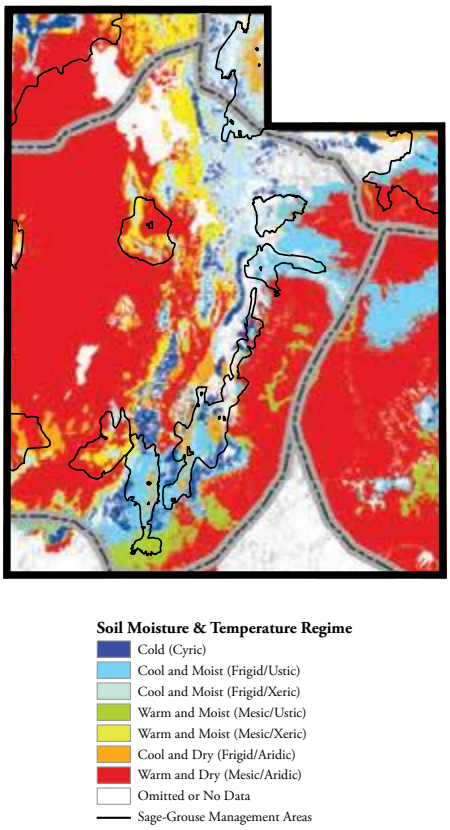


Figure 10 - Five SGMAs within the Great Basin have a high correlation with warm and dry soil regimes. Soil moisture and temperature are a primary indicator of wildfire propensity and post-fire effects.

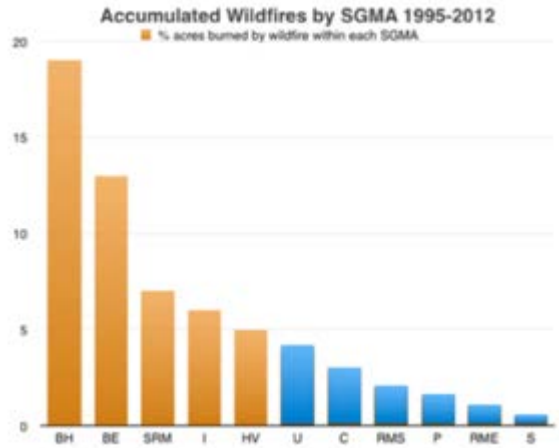


Figure 11- The contrast between acres burned by wildfires within Great Basin SGMAs and SGMAs in other parts of the state helps illustrate the benefits of prioritizing at risk SGMAs.

Detailed Conservation Strategy for SGMA Priorities

Box Elder

Overview

Detailed conservation strategies demonstrate that protecting Sage-grouse from the threat of wildfire in Box Elder SGMA is achievable. Spatial threat analysis illustrates that utilizing a priority system for prevention treatments and rapid-response strategies in difficult fire years can reduce the acreage burned by wildfire by up to 75% in the areas which are key to survival of 98% of the birds in the Box Elder SGMA. Considering that the Box Elder SGMA holds approximately twice as many sage-grouse as the combined populations of the Ibapah, Sheeprock Mountains, Hamlin Valley and Bald Hills SGMAs, a detailed conservation strategy for the Box Elder SGMA is important for protecting Sage-grouse from the threat of wildfire in the state of Utah.

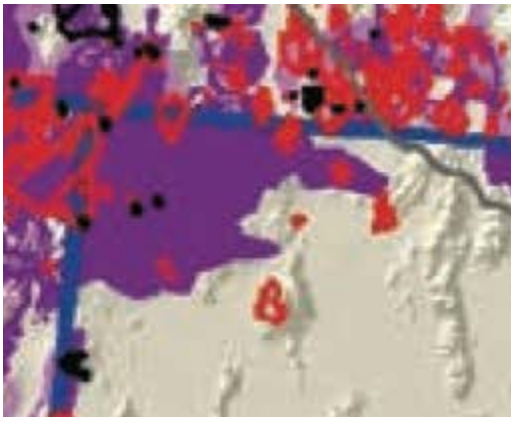


Figure 12 - Chambers et al wildfire map. Red and black polygons represent acreage burned by wildfire from 1995-2012 in Box Elder SGMA.

Detailed Analysis

Every Fire Every Year

In most years, every fire within the Box Elder SGMA can be suppressed before it grows too large. In fact, analysis of wildfires from 1995-2012 in Utah's SGMAs shows that 98 percent of wildfires are extinguished in less than 1,000 acres and 99.7 percent of wildfires are extinguished in less than 10,000 acres. In 16 out of 18 years, no wildfire exceeded 10,000 acres and relatively few overall acres burned in the Box Elder SGMA. However, in two years, 2005 and 2007 several large fires burned extensive acreage in the Box Elder SGMA. In 2008, the state of Utah responded with increased funding to enhance prevention and suppression efforts to address the threat of wildfire in Box Elder and other portions of the state.

Difficult Fire Years

Utah uses a three-pronged approach to address the challenge that wildfires pose to Sage-grouse in extreme conditions:

(1) Prevention: Improving the resiliency of the habitat through conifer removal and control of invasive annual grass before fires start.

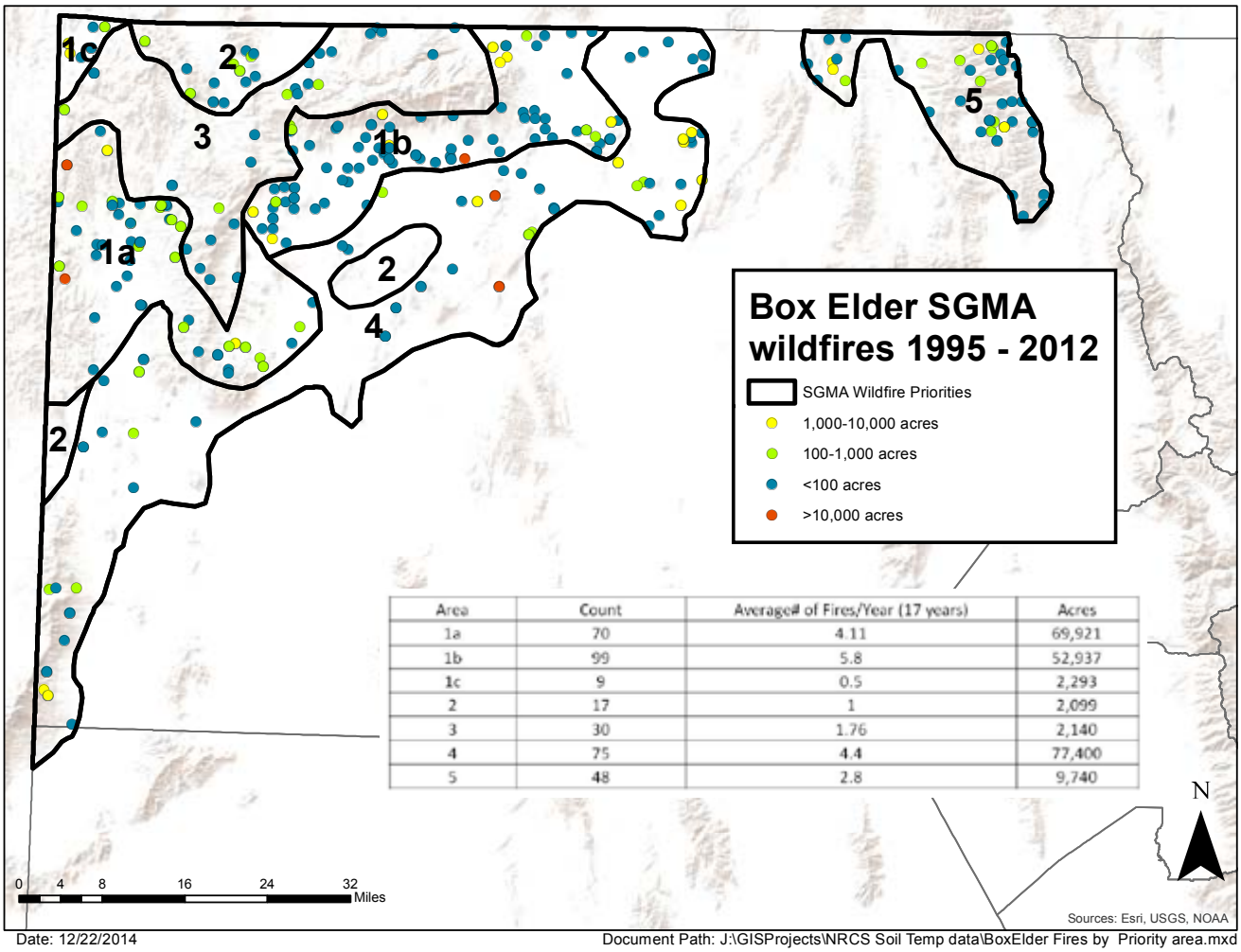
(2) Suppression: Rapid-response strategies that use a priority system for triage situations.

(3) Rehabilitation: Restoring burned habitat through reseeding and cheat-grass suppression to ensure burned acreage is returned to productive Sage-grouse habitat.

In the Box Elder SGMA, priority zones 1-5 were developed using historic fire data, soil/temperature regimes, sage-grouse distribution and key habitat types. Zones 1a and 1b have been designated the top priority areas to accelerate prevention and improve rapid response in the most severe wildfire conditions.

Protecting Key Habitat

While the Box Elder SGMA covers 1.5 million acres, population metrics indicate that nesting/brood-rearing habitat and priority winter range for 98% of the birds in this area occurs within zones 1a-c, 2 and 3. However, the majority of the acreage burned by wildfires in these areas occurs within zones 1a and 1b.



Area	Count	Average# of Fires/Year (17 years)	Acres
1a	70	4.11	69,921
1b	99	5.8	52,937
1c	9	0.5	2,293
2	17	1	2,099
3	30	1.76	2,140
4	75	4.4	77,400
5	48	2.8	9,740

Figure 13 - Ensuring fire control in priority zones 1a and 1b during difficult fire years presents an opportunity to reduce acreage burned by up to 75% in critical habitat for 98% of sage-grouse.

Wildfire not a threat in zones 1c, 2 and 3

Wildfire is not a significant threat in zones 1c, 2 and 3. Soil temperature and moisture conditions combined with existing wildfire-prevention and control strategies are currently sufficient to control wildfires in these areas. Although zones 1c, 2 and 3 encompass more than 440,000 acres, on average only a collective 363 acres burn in these areas per year. This is likely equal to or less than historical totals. In other words, any threat of wildfire in areas 1c, 2 and 3 is already being controlled to acceptable thresholds. Because zones 1c, 2 and 3 provide nesting/brood rearing habitat for 55% of the Sage-grouse in the Box Elder SGMA it remains an important priority for wildfire prevention and suppression efforts.

Cheatgrass favors warm-dry soils (which are classified as xeric or aridic soils by soils experts.) However, most of the soils in zones 1c, 2 and 3 comprise cool and wet soil types (cyric, frigid-xeric and frigid-aridic soils). This means that cheatgrass and other annual grasses are much less likely to become problematic within these zones. Soil moisture and temperature conditions In zone 3 and portions of zones 1c and 2, also allow restoration of healthy vegetation. Using soil moisture, temperature, elevation and other quantified variables, restoration specialists determine whether reseeding or other restoration activities will be helpful. Restoration activities after wildfire in these areas are often highly successful, and revegetation of desirable forbs, grasses and brush occurs in just a few short years.

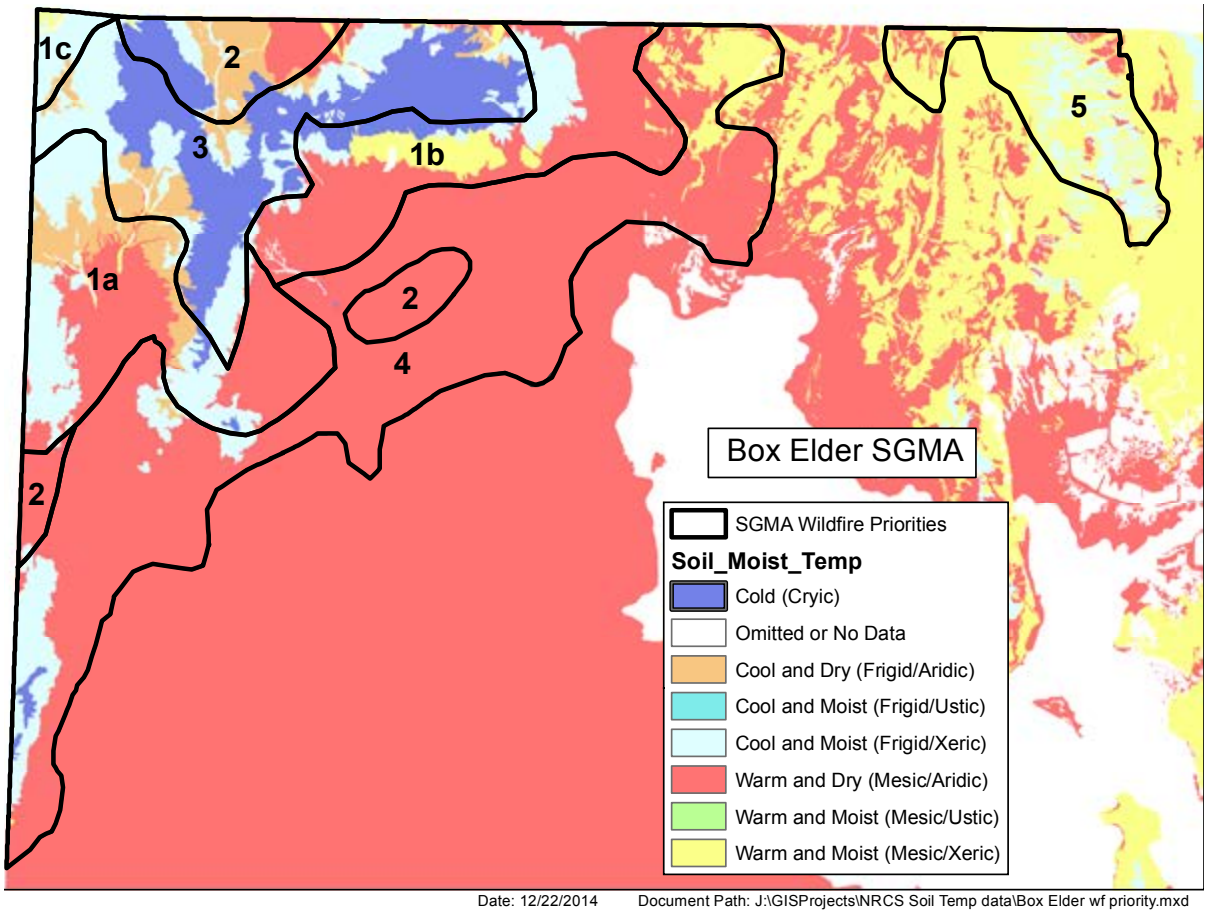


Figure 14 - Soil temperature and soil conditions and existing fire management efforts means wildfire is not a threat in zones 1c, 2 and 3. With less than 365 acres per year burning on average in these areas, sage-grouse populations are not at risk.

Few Birds in Zone 4

Zone 4 provides nesting/brood-rearing habitat for just 2% of Sage-grouse in the Box Elder SGMA. Nevertheless, because zone 4 includes general winter range, it is helpful for it to be included in the prioritization system. While there are less wildfires which start in zone 4 than zones 1a and 1b, the total acreage burned by wildfires from 1995-2012 in zone 4 was relatively high. Nevertheless, because of the large amount of winter habitat in the Box Elder SGMA, the amount of acreage impacted by wildfires in zone 4 is not considered limiting for sage-grouse populations. This does not mean that wildfire suppression is not important in zone 4. Instead, it reflects the reality that in triage situations, where multiple fires may be burning, prioritizing wildfire control in nesting/brood rearing areas and critical winter range in zones 1-3 is a higher priority than general winter range in zone 4. This is because winter range in zone 4 is in more abundant, and the impact of a large wildfire in zone 4 is less likely to directly impact sage-grouse populations than a large wildfire in zones 1-3. It is also important to point out that zones 1-3 contain important winter range for Sage-grouse in the Box Elder SGMA.

Analysis of historical wildfire trends suggests that controlling wildfires in zone 4 will not typically interfere with wildfire-control efforts in zones 1-3. For example, the two largest fires in zone 4 occurred in 2005 and 2006, while two largest fires

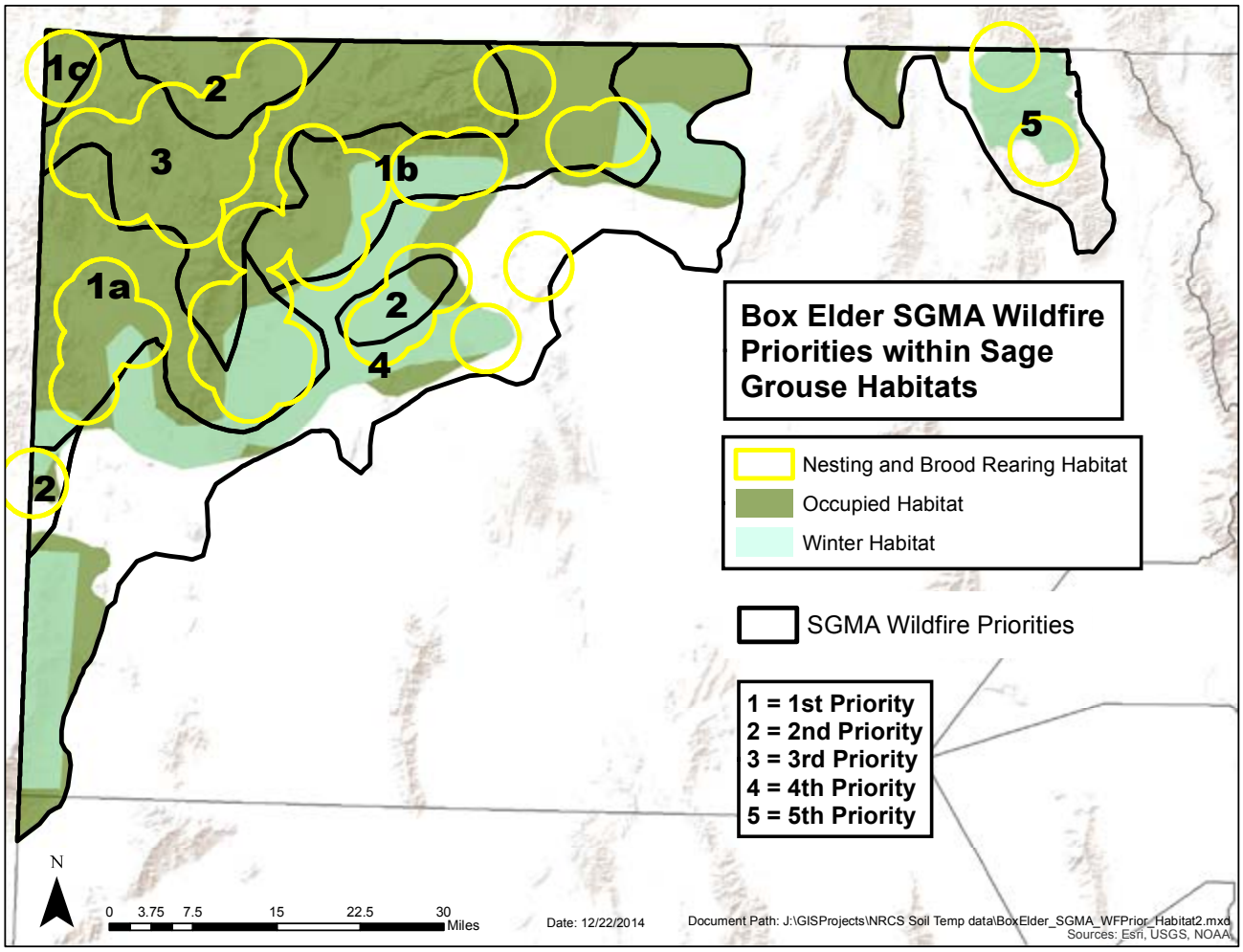


Figure 15 - shows that the majority of nesting brood rearing habitat occurs within zones 1-3. Zones 1-3 also contain winter habitat.

in zones 1a and 1b were in 2007. This demonstrates that the priority system can provide protection of general winter range, even in difficult fire years.

Detailed Wildfire Strategies for Zones 1a and 1b

Prioritization of zones 1a and 1b is important to inform improved rapid response and suppression strategies in the Box Elder SGMA. While there are few large wildfires in zones 1a and 1b, large wildfires account for most of the acreage burned in these areas. In some respects, this is a function of the soil temperature and moisture regimes, elevation and plant communities, but is also informed by historic wildfire trends. Prioritization reflects the fact that wildfires are not only more likely to occur in zones 1a and 1b, but they are also more likely to burn large amounts of acreage.

By prioritizing zones 1a and 1b, Utah can focus its enhanced prevention and suppression efforts on at-risk areas and habitats within the Box Elder SGMA that are important to Sage-grouse survival. There are multiple ways prioritization can be helpful to suppression efforts in the Box Elder SGMA. For example, if multiple fires start in a single night and resources become limited, it is helpful to recognize that a wildfire in zone 1a is more likely to become large than a wildfire in zone 3. Similarly, it is helpful to recognize that a wildfire in zone 1b is more likely to detrimentally impact Sage-grouse populations than a wildfire in zone 4.

Most years, all wildfires within the Box Elder SGMA are extinguished before they become very large. In fact, from 1995 to 2012, there were no wildfires in zones 1a and 1b that exceeded 10,000 acres in 16 out of 18 years. During those 16 years, wildfires burned just a combined 1,434 acres annually on average within zones 1a and 1b. However, in 2005 and 2007, large wildfires far exceeded these annual averages. For example, in 2005 one fire burned 18,420 acres in zone 1a. In 2007 two fires burned 59,296 acres in zone 1b and four fires burned 12,484 acres in zone 1a. Controlling these fires can reduce acreage impacted by wildfire by up to 75%.

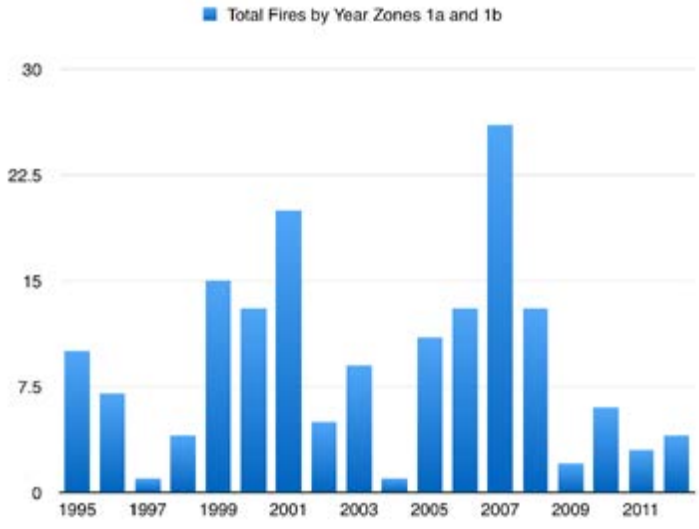


Figure 16 - The number of wildfires within zones 1a and 1b can vary considerably from year-to-year.

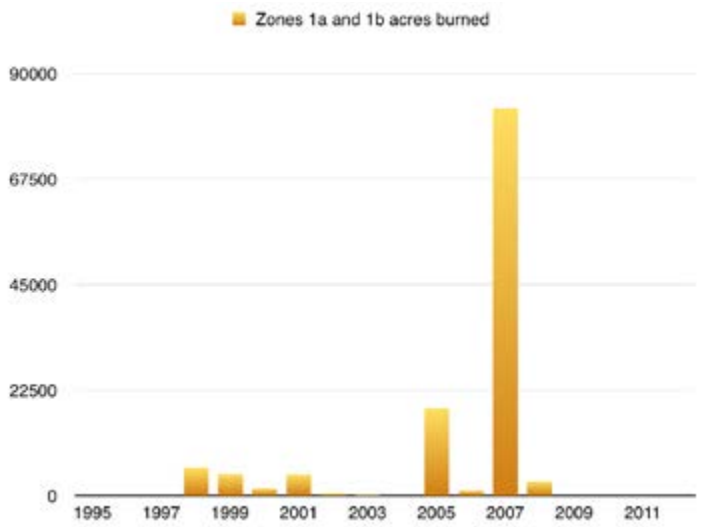


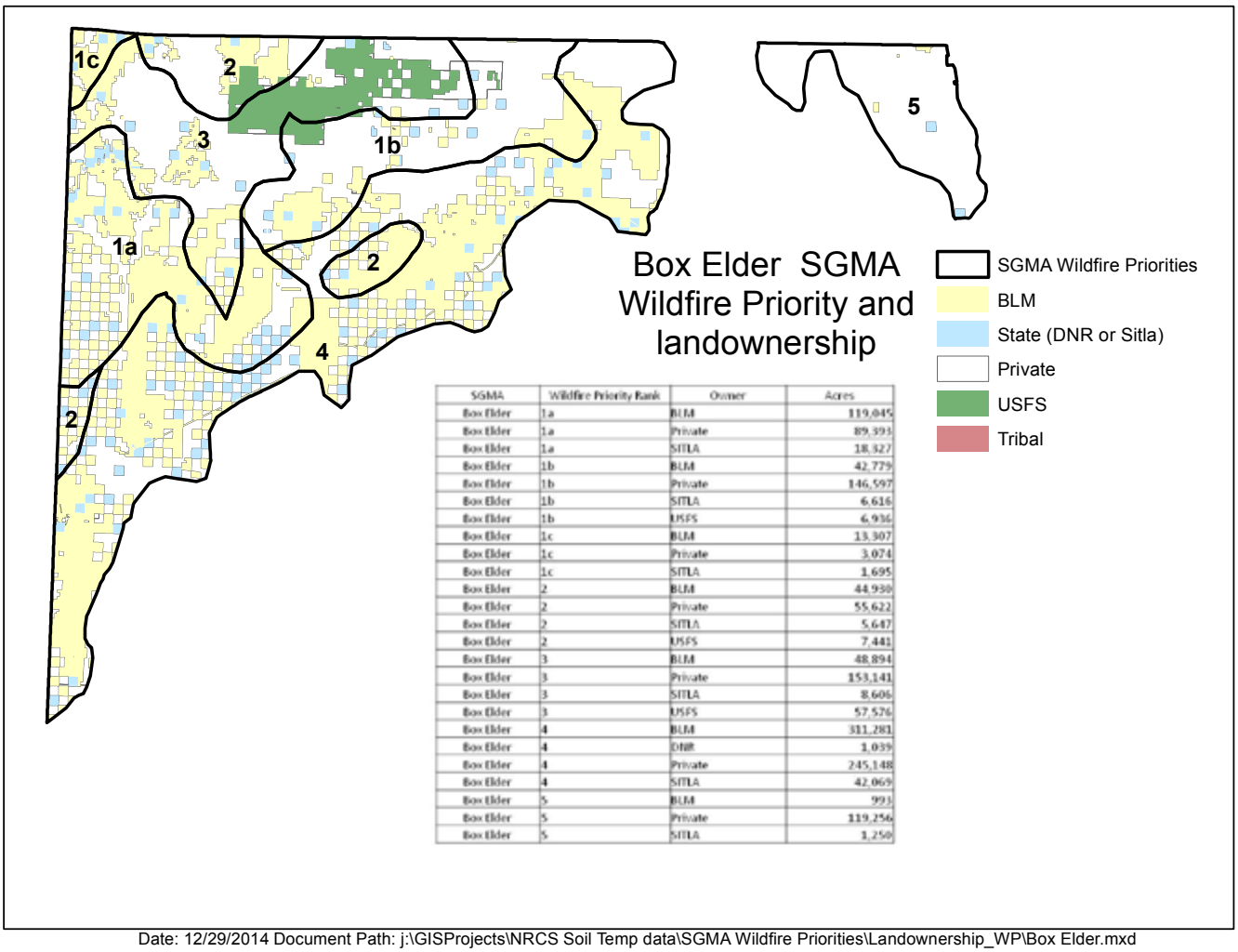
Figure 17 - Severe fire conditions in cert years (particularly 2005 and 2007) account for most of the acreage burned in key areas of the Box Elder SGMA.

15

Enhanced wildfire control in zones 1a and 1b protects nesting/brood-rearing areas and winter habitats for Greater Sage-grouse in the Box Elder SGMA. Zones 1a and 1b provide nesting/brood rearing habitat for 43% of the Sage-grouse in the Box Elder SGMA. Zones 1a and 1b are also important for protecting the habitat in areas 1c, 2 and 3 from catastrophic wildfire. In other words, controlling wildfires in zones 1a and 1b protects not only 43% of Sage-grouse in zones 1a and 1b, but also the 55% of Sage-grouse in zones 1c, 2 and 3. What this means is that protecting 98% of the birds can be achieved by reducing the number of large fires within the 226,765 acres designated as zone 1a and the 202,928 acres designated as zone 1b. Managing wildfires on the combined 429,693 acres of zones 1a and 1b is a much more manageable task than attempting to control every fire on 1.5 million acres in the most extreme fire conditions. Considering the fact that a small handful of fires in zones 1a and 1b in 2007 accounted for approximately half of the acreage burned in an 18-year period in the Box Elder SGMA, the priority system provides invaluable insight for improving rapid-response strategies and enhanced suppression efforts in future fire seasons.

Conifer Removal and Prevention Strategies for Zones 1a and 1b

Prevention is an important tool to reduce the incidence of large wildfires. Pre-suppression



SGMA	Wildfire Priority Rank	Owner	Acres
Box Elder	1a	BLM	119,045
Box Elder	1a	Private	89,393
Box Elder	1a	SITLA	18,327
Box Elder	1b	BLM	42,779
Box Elder	1b	Private	146,597
Box Elder	1b	SITLA	6,616
Box Elder	1b	USFS	6,936
Box Elder	1c	BLM	13,307
Box Elder	1c	Private	3,074
Box Elder	1c	SITLA	1,695
Box Elder	2	BLM	44,930
Box Elder	2	Private	55,622
Box Elder	2	SITLA	5,647
Box Elder	2	USFS	7,441
Box Elder	3	BLM	48,894
Box Elder	3	Private	153,141
Box Elder	3	SITLA	8,606
Box Elder	3	USFS	57,576
Box Elder	4	BLM	331,281
Box Elder	4	DNR	1,039
Box Elder	4	Private	245,148
Box Elder	4	SITLA	42,069
Box Elder	5	BLM	993
Box Elder	5	Private	119,256
Box Elder	5	SITLA	1,259

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Figure 18 - Ownership of land can affect suppression efforts as well as the timing, funding and regulatory hurdles for conifer removal and other habitat restoration efforts.

strategies can dramatically reduce the incidence of large wildfires and can enhance the ability to suppress fires that do start in severe conditions. In 2008, the state of Utah responded to the wildfires of 2007 with funding for an ongoing prevention and restoration program. Prevention is a critical part of the detailed wildfire-reduction strategy in zones 1a and 1b. Pinyon-juniper removal, restoration and other prevention work in zones 1a and 1b can also help address the threat of wildfire by:

(1) Reducing the fuel loads which that can increase the likelihood of catastrophic wildfires.

(2) Enhancing habitats to improve the success of suppression of wildfires in severe conditions.

(3) Reducing the size and intensity of fires that do occur.

These programs have been extremely successful. Since 2007, almost 100,000 acres of conifer removal, invasive plant control and Sage-grouse

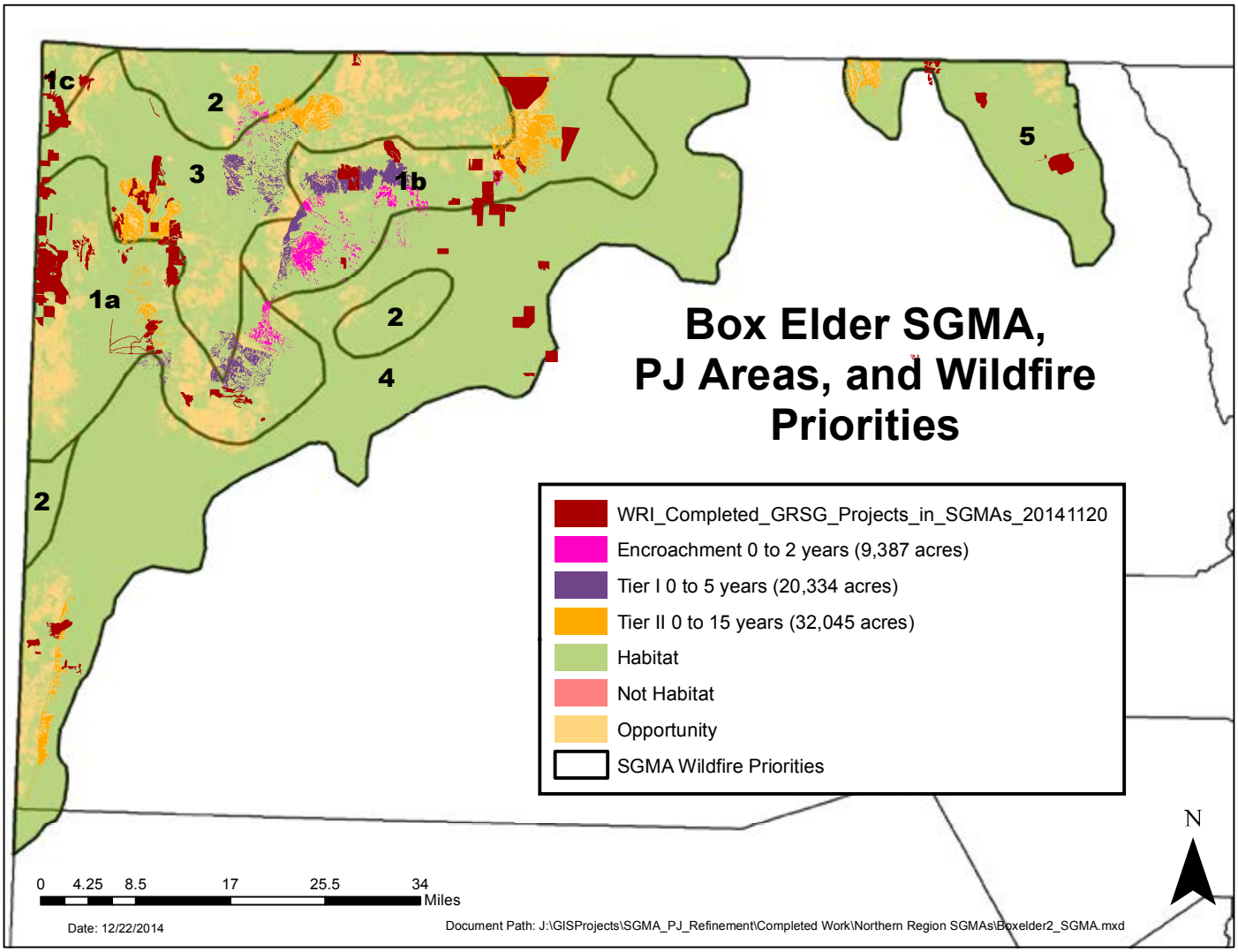


Figure 19-Watershed Restoration Initiative Projects totaling over 100,000 acres have been completed in Box Elder SGMA since 2006. Over 60,000 acres of conifer removal projects are planned in coming years to enhance grouse habitat and reduce the threat of catastrophic wildfire.

habitat restoration efforts have been implemented in the Box Elder SGMA. An additional 60,000+ acres of conifer removal is planned in Box Elder SGMA in the next few years. These projects increase the resiliency and redundancy of sage-grouse habitats, improve watersheds and mesic areas, remove vertical plant structures and reduce the threat of catastrophic wildfires. Many of these projects are planned adjacent to existing Sage-grouse populations or in areas of important winter range. Since 2008, wildfire totals in Box Elder have dramatically improved. Between 2008 and 2014, no wildfire burned over 2,500 acres in the Box Elder SGMA. In that same period, just 4 fires were larger than 1,000 acres.

For more information on the science behind conifer removal and the benefits to Sage-grouse and their habitats, refer to the state of Utah's Sage-Grouse Conservation Strategies document on pinyon/juniper removal.

Most of the habitat restoration efforts in the Box Elder SGMA occurs in zones 1a and 1b. Ownership of land in pinyon-juniper removal areas affects whether funding availability, regulatory restrictions and NEPA assessments may delay or restrict conifer removal projects. For example, the fact that a large percentage of zone 1b is private land makes it much more likely that pinyon/juniper removal will implemented in the next few years. In contrast, zone 1a includes large portions of public lands managed by the Bureau of Land Management (BLM). Though BLM is an important partner in Utah's Watershed Restoration Initiative, NEPA requirements and availability of funding can delay pinyon/juniper removal projects by several months or even years on BLM managed lands.

Box Elder Conclusion

Existing wildfire prevention, suppression and rehabilitation strategies have successfully addressed the threat of wildfire in most years within the Box Elder SGMA. However, in extreme fire conditions, such as those experienced during the 2007 wildfire season, large fires can burn large amounts of acreage. These fires account for most of the acreage burned within important sage-grouse habitats within the Box Elder SGMA.To reduce the threat of wildfire in extreme fire conditions, the state of Utah has developed a priority system to inform prevention projects and rapid-response/suppression strategies. By utilizing a priority system, heightened protections are focused on key nesting/brood rearing and critical winter range. The priority system protects 98% of Sage-grouse in the Box Elder SGMA within the areas designated as priority zones 1-3.

Prioritization is helpful to focus wildfire prevention and suppression strategies in at-risk areas within the Box Elder SGMA. For example, while the Box Elder SGMA covers 1.5 Million acres, protecting 98% of the birds can be achieved by reducing the number of large fires within the 226,765 acres designated as zone 1a and 202,928 acres designated as zone 1b. Quantification and spatially explicit threat analyses illustrate that Utah's priority system for preventive treatments and rapid response strategies in Box Elder SGMA can reduce the acreage burned by wildfire by up to 75% in areas which are key to survival of 98% of the birds in the Box Elder SGMA. By utilizing priority areas, the science and data inform wildfire suppression strategies in a manner that not only reflects likely conditions on the ground, but also informs strategies for significantly reducing the threat of wildfire to greater sage-grouse populations.

Hamlin Valley

encompasses 158,065 acres. Between 0 and 22

Overview

Detailed conservation strategies for the Hamlin Valley SGMA are much more straightforward than for the Box Elder SGMA. Priority zone 1 contains 100% of the nesting/brood-rearing and key winter habitat in the Hamlin Valley SGMA. While Hamlin Valley covers 341,523 acres, priority zone 1 wildfires occur annually within priority area 1. However, most of these fires are quite small. In fact, less than 100 acres burns in zone 1 of Hamlin Valley in a typical year. However, in 2002, one fire burned 4,550 acres. In 2012, another fire

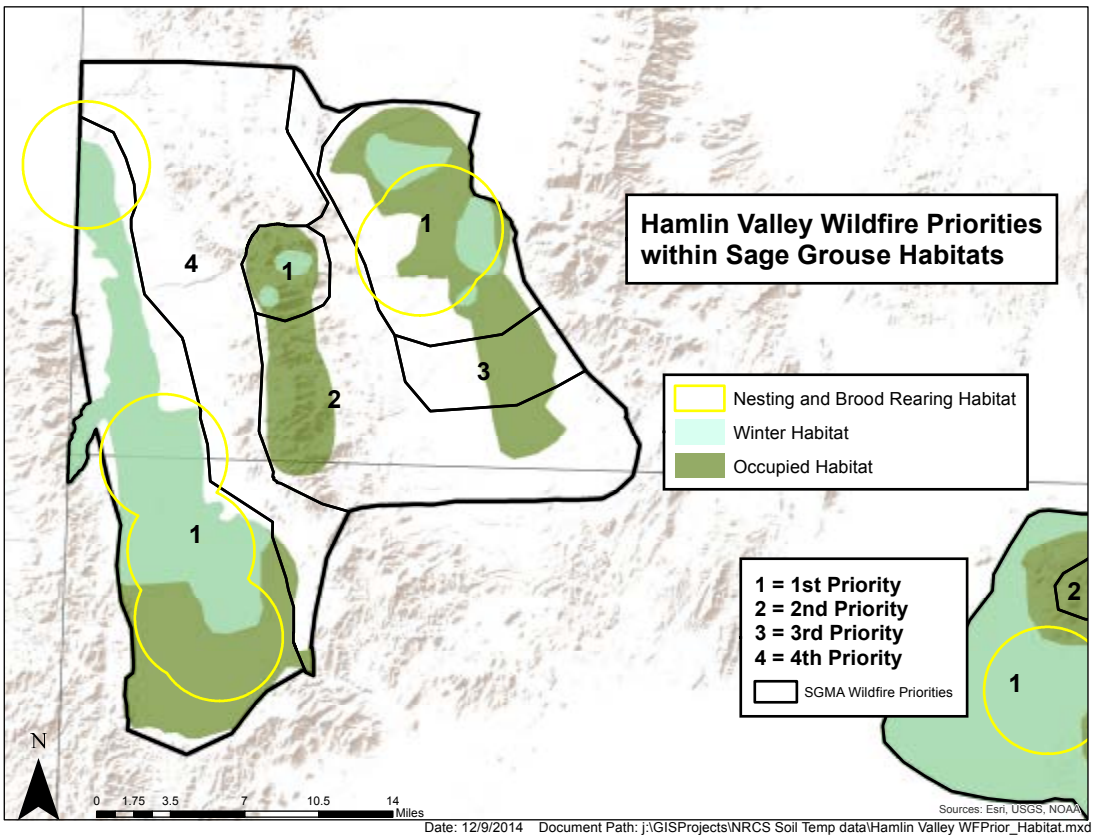
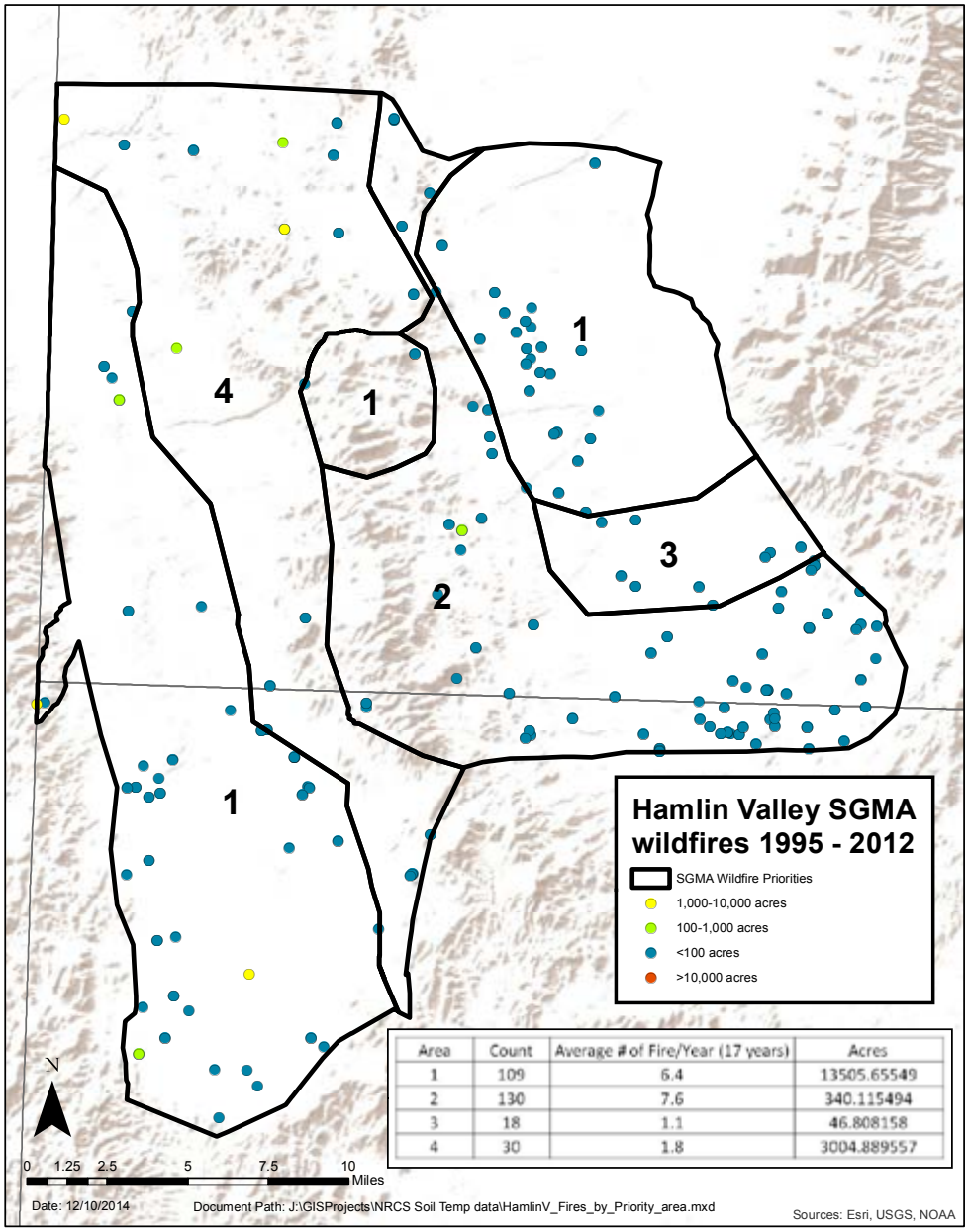


Figure 20 - One-hundred percent of leks, nesting/brood-rearing habitat and most key winter ranges are located in zone 1. Zones 2 and 3 contain some general habitat as well as opportunity areas. Zone 4 is primarily non-habitat.

burned approximately 8,500 acres. These two fires account for over 96% of the acreage burned in priority area 1 of Hamlin Valley from 1995-2012. While wildfire is not a major concern within zone 1, prioritization of zone 1 protects key habitat areas and provides an opportunity to reduce the incidence of large fires and overall acreage-burned within Sage-grouse habitat in Hamlin Valley.

Zone 2 encompasses an area of general habitat between the populations on the eastern and western portions of the Hamlin Valley SGMA. In an 18 year period f(rom 1995-2012), there were 131 fires in zone 2. However, soil temperature and moisture regimes and existing wildfire-suppression efforts resulted in just 340 acres burned during this 18-year period. While this area contains some seasonal habitat, it primarily consists of conifer stands that do not provide important habitat for Sage-grouse. It is important to control fires in zone 2 to prevent catastrophic wildfires which could burn into zone 1. Zone 2 also includes opportunity areas of possible habitat. Removal of conifers in these areas can increase the amount of available habitat for Sage-grouse as long as projects are conducted in areas adjacent to existing Sage-grouse populations, with adequate water and other habitat characteristics. Similar areas in other parts of Utah are being utilized by Sage-grouse within months of the completion of those restoration projects.



Area	Count	Average # of Fire/Year (17 years)	Acres
1	109	6.4	13505.65549
2	130	7.6	340.115494
3	18	1.1	46.808158
4	30	1.8	3004.889557

Zone 3 and zone 4 have very few wildfires. Zone 3 has had virtually no large fires in an 18-year period. Zone 4 represents non-habitat because of its geophysical characteristics.

Conifer removal strategies can provide additional protections for Sage-grouse habitat in Hamlin Valley. Areas planned for conifer removal are adjacent

Figure 21 - By reducing the incidence of large fires in zones 1, acreage burned can be improved by more than 90% in areas that hold leks and the nesting/brood rearing habitat for 100% of Sage-grouse in the Hamlin Valley SGMA.

to Sage-grouse leks, nesting/brood-rearing and important winter range. Typical of desert shrub habitats, the areas suitable for Sage-grouse tend to be fairly localized. Removing conifers from areas adjacent to these habitats helps provide buffers that further insulate Sage-grouse populations from the threat of wildfire. Conifer removal and other habitat-restoration efforts can also improve the quality of the habitat for Sage-grouse and its resiliency to wildfire. A total of

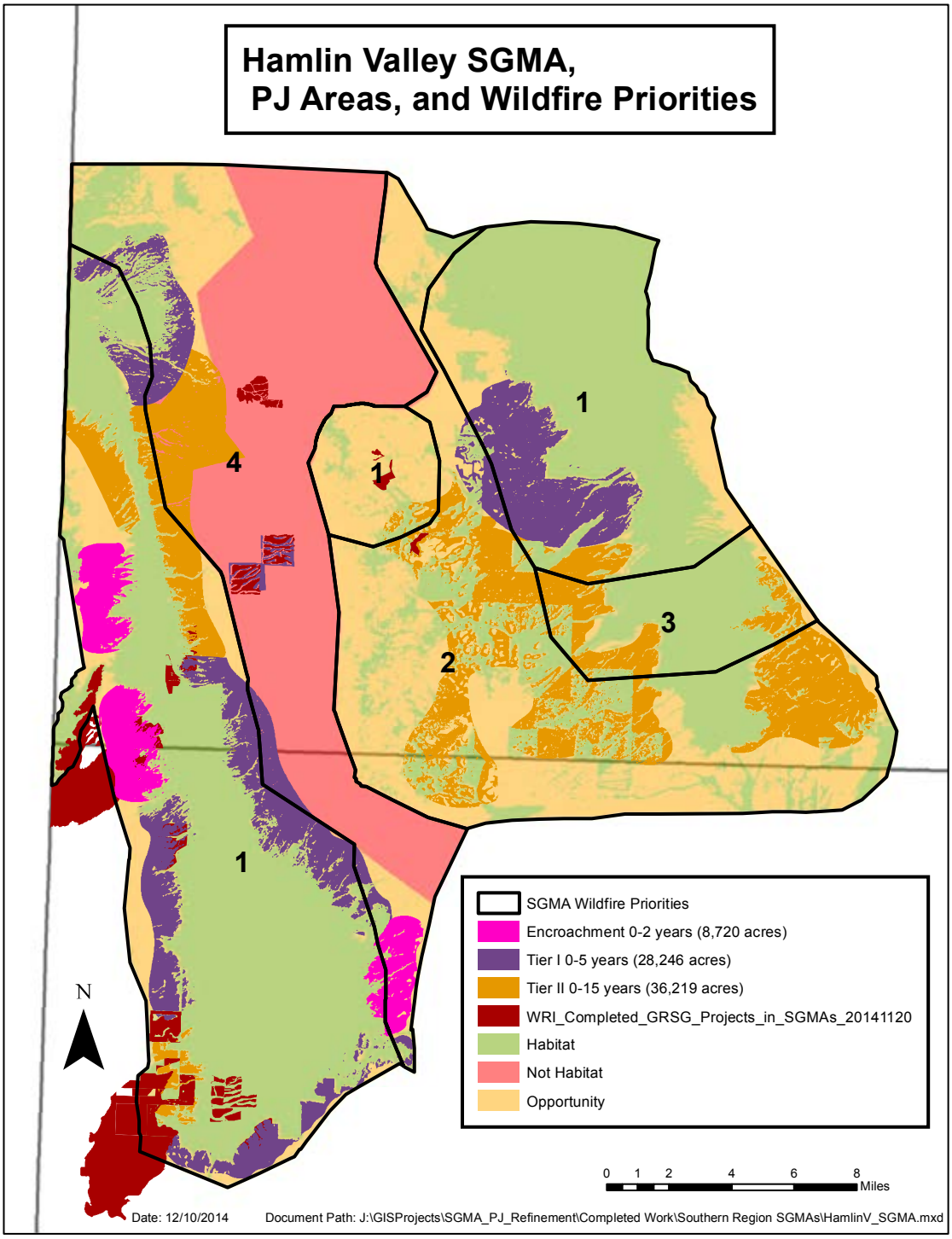
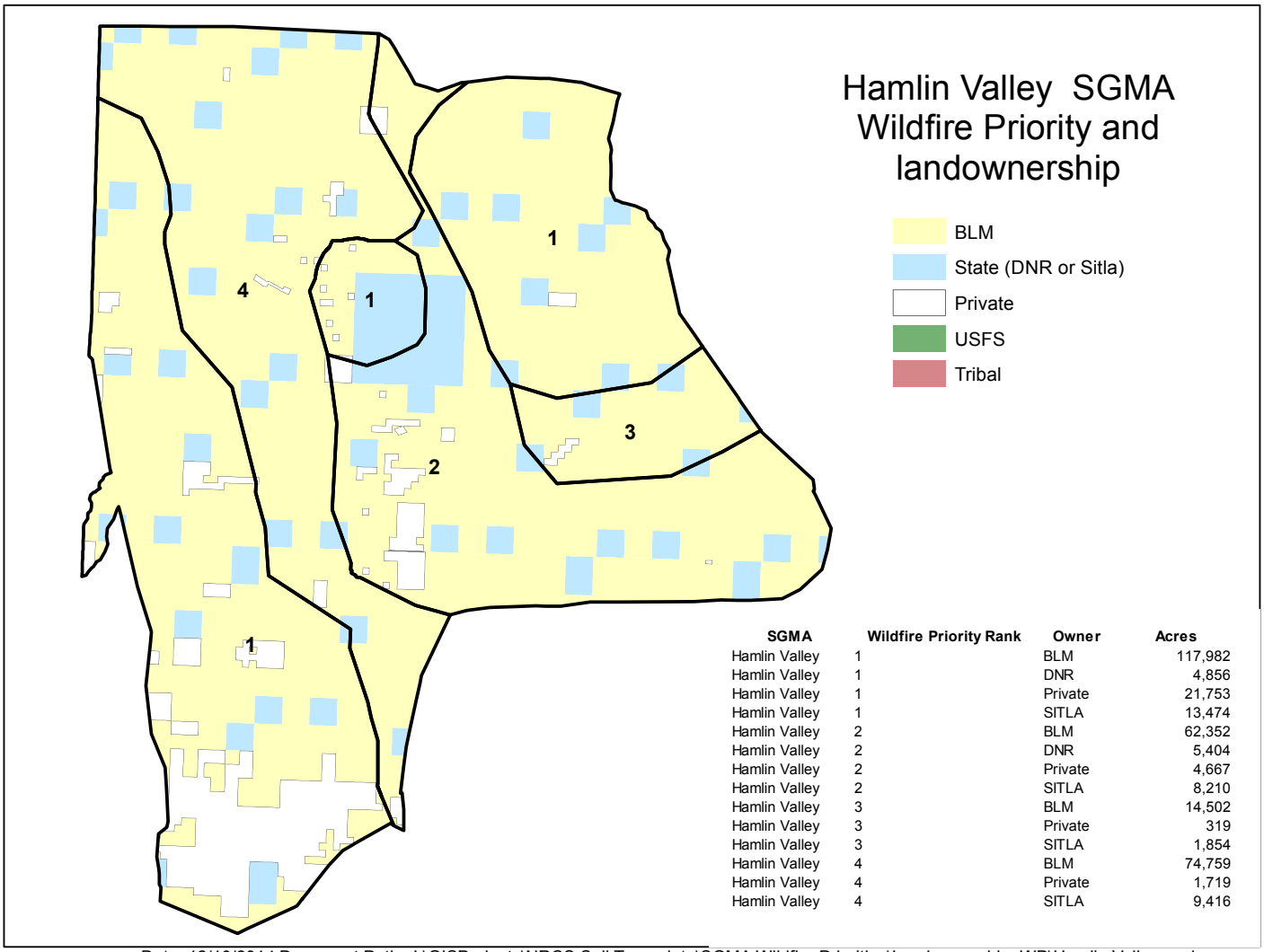


Figure 22 - Conifer removal in areas of leks, nesting/brood rearing habitat and key winter range are a priority in Hamlin Valley.

269,595 acres (roughly 79% of the Hamlin Valley SGMA) are managed by the BLM. This means that NEPA, funding and regulatory restrictions will need to be addressed as part of these pinyon-juniper removal efforts.

Hamlin Valley Conclusion

Spatial threat analysis illustrates that using a priority system for prevention treatments and rapid response strategies in difficult fire years can reduce the acreage burned by wildfire by up to 95% in the areas that are key to survival of 100% of Sage-grouse in the Hamlin Valley SGMA. Proactive conifer removal and habitat-restoration efforts will also help reduce the threat of wildfire in the Hamlin Valley SGMA.



SGMA	Wildfire Priority Rank	Owner	Acres
Hamlin Valley	1	BLM	117,982
Hamlin Valley	1	DNR	4,856
Hamlin Valley	1	Private	21,753
Hamlin Valley	1	SITLA	13,474
Hamlin Valley	2	BLM	62,352
Hamlin Valley	2	DNR	5,404
Hamlin Valley	2	Private	4,667
Hamlin Valley	2	SITLA	8,210
Hamlin Valley	3	BLM	14,502
Hamlin Valley	3	Private	319
Hamlin Valley	3	SITLA	1,854
Hamlin Valley	4	BLM	74,759
Hamlin Valley	4	Private	1,719
Hamlin Valley	4	SITLA	9,416

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Figure 23 - Lands managed by the BLM comprise the majority of the Hamlin Valley SGMA.

Bald Hills

Overview

In 2007, the Milford Flats Fire burned 357,000 acres in the area adjacent to the Bald Hills SGMA. This was one of the largest recorded fires in Utah history. The Milford Flat Fire underscores the importance of fire prevention, suppression and rehabilitation. Like other SGMA's in which Sage-grouse live, Bald Hills SGMA is primarily a desert shrub ecosystems. In these desert shrub ecosystems Sage-grouse populations are fairly localized in areas of suitable habitat. In the Bald Hills SGMA, 100% of the leks, nesting/brood-rearing and the key winter habitat are located in zones 1 and 2. Zone 1 contains most of the important winter range, the leks, and nesting/brood-rearing habitat for most of the Sage-grouse in Bald Hills. Zone 2 contains nesting/brood-rearing habitat for the remainder of the Sage-grouse in the SGMA. For this reason, fire suppression is prioritized for both zones 1 and 2, with a higher priority on zone 1 in difficult triage situations. This does not mean that zone 2 is not important, but it reflects the reality that a large fire in zone 1 is more likely to impact Sage-grouse populations than a wildfire in zone 2.

Zone 3 also contains some general Sage-grouse habitat, along with areas of non-habitat. Zone 4 is predominantly marginal habitat or non-habitat for Sage-grouse. While zones 3 and 4 are prioritized for wildfire treatment, they are assigned a lower

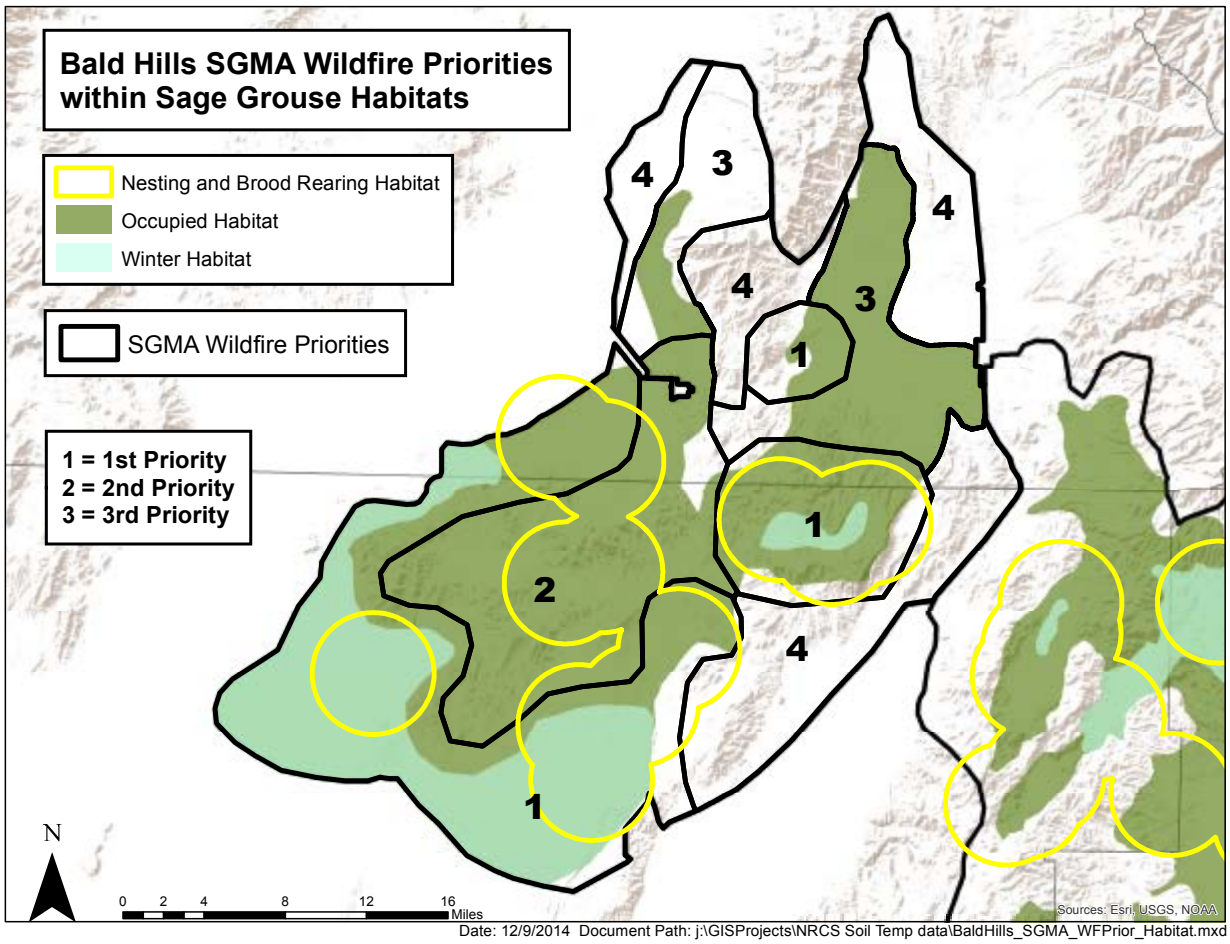


Figure 24 - One-hundred percent of leks, nesting/brood-rearing habitat and most key winter range are located in zones 1 and 2. A greater percentage of leks are found in zone 1 than in zone 2 along with key winter habitat. Zones 3 contains no leks but has some general habitat. Zone 4 is primarily marginal habitat or non-habitat.

priority than zones 1 and 2 due to the lack of leks, nesting/brood rearing and key winter habitat.

Detailed Analysis

The average number of wildfires is higher in the Bald Hills SGMA than in any other SGMA in Utah. In most years, these fires do not become a problem. Even in difficult wildfire years, most of the fires are suppressed without burning large acreage. However, a handful of large fires account for most of the acreage burned in zones 1 and 2. Six fires in zone 1 and five fires in zone 2 account for more than 87% of the acreage burned by wildfire in zones 1 and 2 over the 18-year period

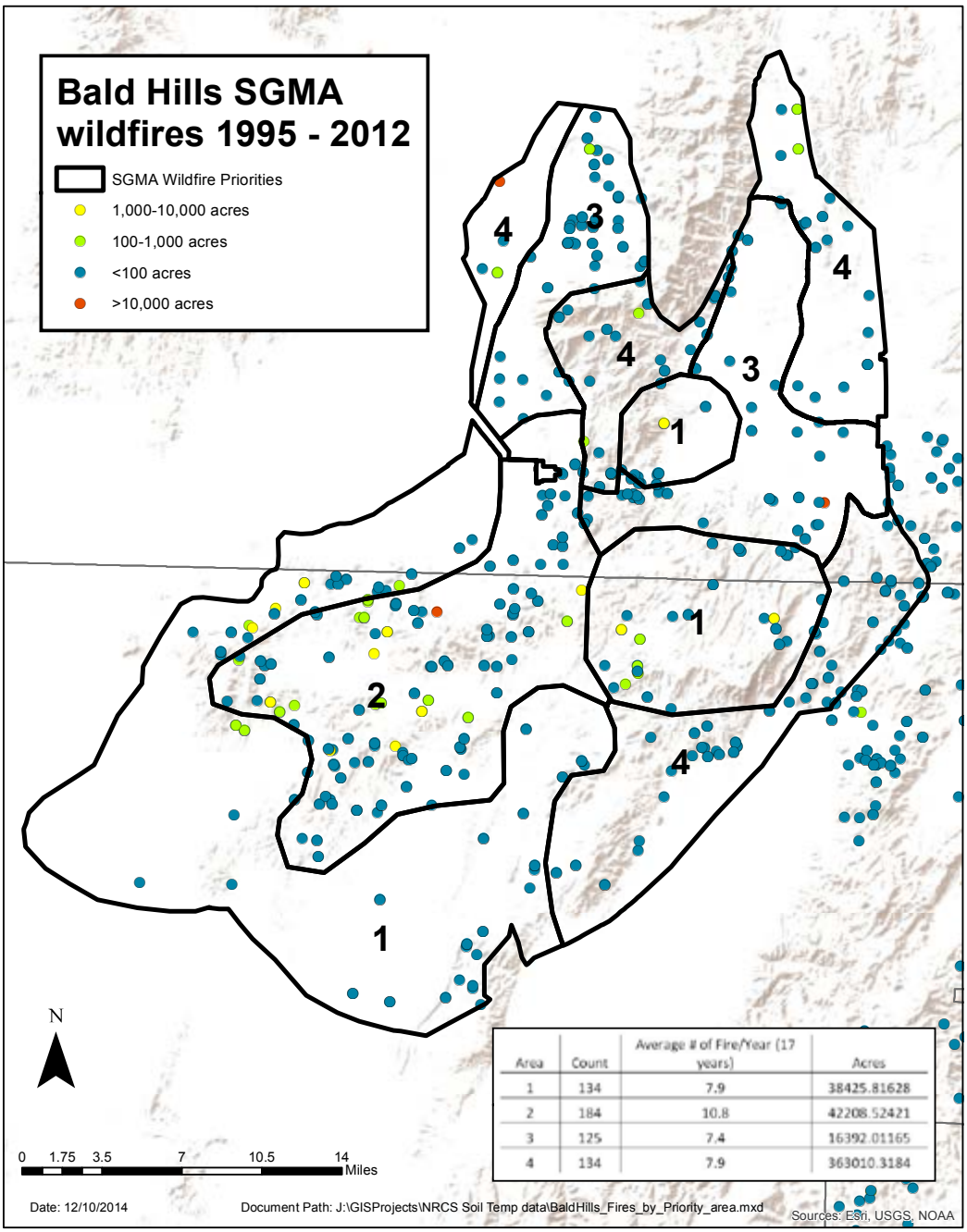


Figure 25 - By reducing the incidence of large fires in zones 1 and 2, the acreage burned can be improved by up to 85% in areas that hold leks and the nesting/brood rearing habitat for 100% of the Sage-grouse in the Bald Hills SGMA.

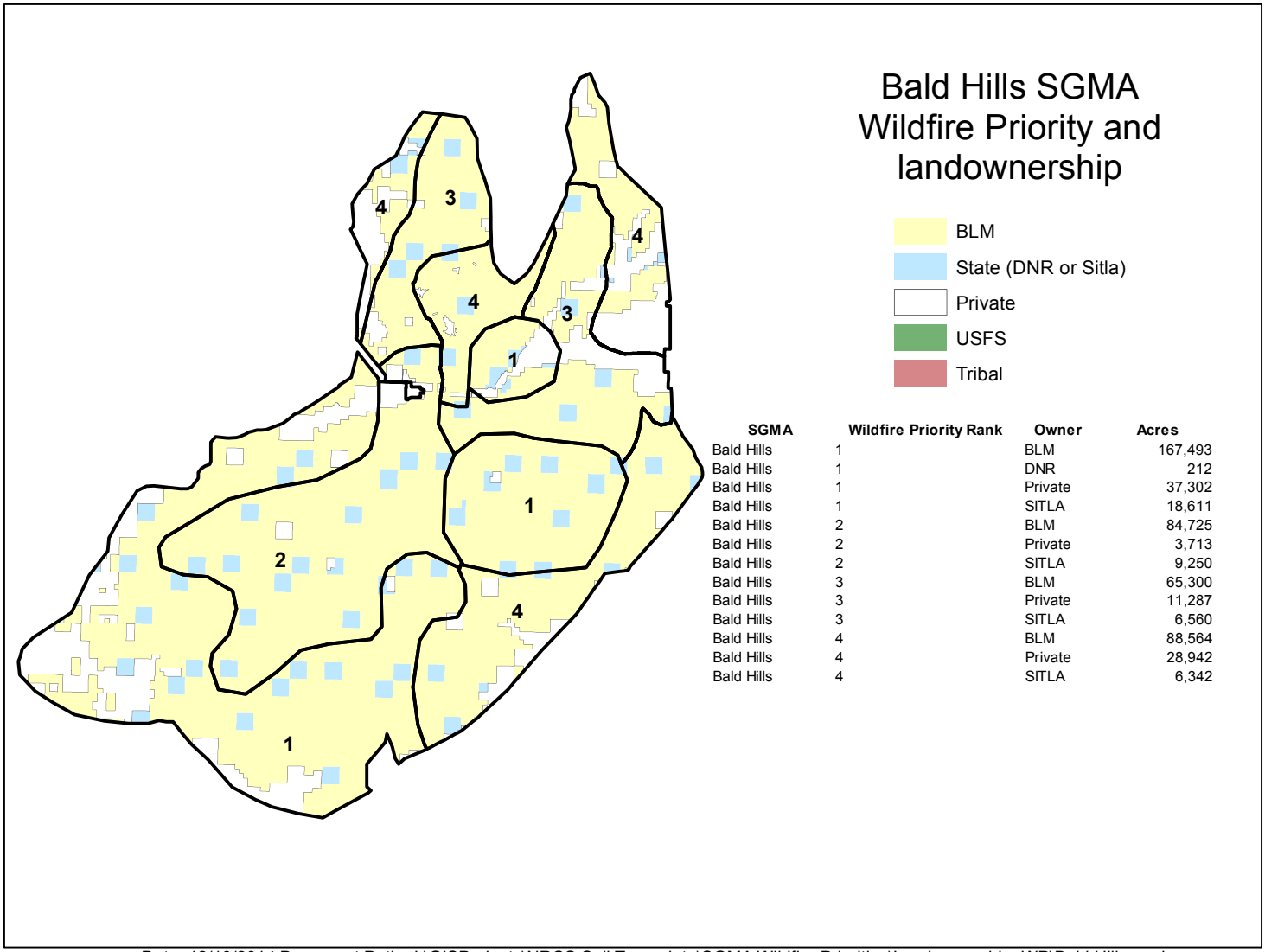
25

from 1995-2012. What this means is that by reducing the incidence of large fires in zones 1 and 2, the threat of wildfire can be reduced by up to 85% in areas that contain leks and nesting/ brood rearing habitat for 100% of Sage-grouse in the Bald Hills SGMA. This will also protect the key winter habitat in the Bald Hills SGMA.

Land Ownership

Most of the large fires within the Bald Hills SGMA occur on land managed by the BLM. This is likely the result of a variety of factors. First, the BLM manages 77% of the acreage within the Bald Hills SGMA. the state land is landlocked by BLM controlled land. Additionally, the higher elevation areas are largely BLM controlled, and these are places where there may be a higher number of lightning strikes.

Because much of the Bald Hills SGMA is managed by the BLM, coordination on pinyon/ juniper removal, fire-breaks, greenstripping and suppression efforts will be important. While past wildfires have already removed large swaths of



SGMA	Wildfire Priority Rank	Owner	Acres
Bald Hills	1	BLM	167,493
Bald Hills	1	DNR	212
Bald Hills	1	Private	37,302
Bald Hills	1	SITLA	18,611
Bald Hills	2	BLM	84,725
Bald Hills	2	Private	3,713
Bald Hills	2	SITLA	9,250
Bald Hills	3	BLM	65,300
Bald Hills	3	Private	11,287
Bald Hills	3	SITLA	6,560
Bald Hills	4	BLM	88,564
Bald Hills	4	Private	28,942
Bald Hills	4	SITLA	6,342

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Figure 26 - The majority of the Bald Hills SGMA is managed by the Bureau of Land Management (BLM). State land is land is landlocked within BLM acreage. Because most of the acreage burned occurs in these areas, coordination will be needed to address the threat of wildfire within the Bald Hills SGMA.

pinyon/juniper growth, mechanical removals in areas adjacent to key leks, nesting/brood-rearing habitats and winter range is still needed to protect Sage-grouse within the SGMA.

Prevention

Because of the large number of fires and the fact that difficult wildfire conditions are not uncommon, key pre-suppression strategies can be helpful. Conifer removal strategies, firebreaks and greenstripping are not only useful to aid in suppression efforts, they can also help prevent fires from affecting the most important habitats for Sage-grouse in the Bald Hills SGMA. As previously discussed, regulatory hurdles (such as NEPA assessments and other approvals) can delay the timing and possibility of pre-suppression treatment projects. The BLM has been implementing firebreaks and greenstripping over the past several years. A map showing conifer removal strategies is depicted below (Figure 27). A comparison with leks and nesting/brood-rearing habitat shows the importance of conifer removal to reduce the frequency and intensity of large fires in these areas.

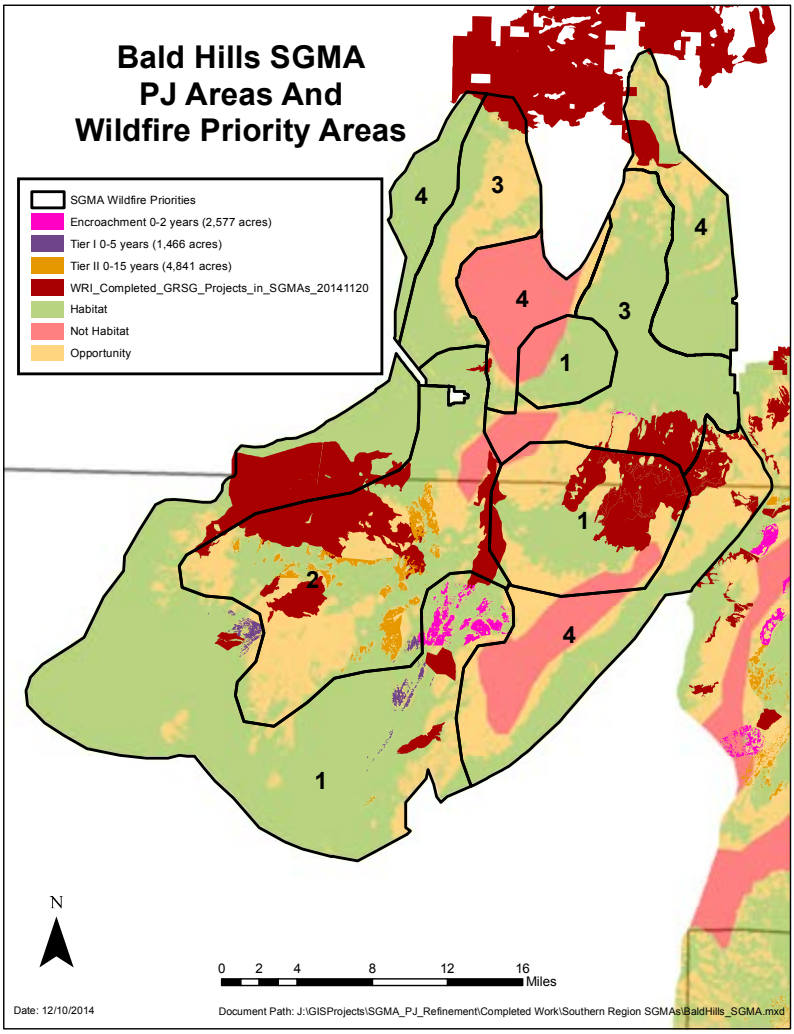


Figure 27 - conifer removal in areas of leks and nesting/brood rearing habitat are helpful to protect Sage-grouse populations in the Bald Hills SGMA.

Sheeprock Mountains

Overview

Wildfire is not a major threat to Sage-grouse populations and core habitat within the Sheeprock Mountains SGMA. All leks, nesting/brood-rearing habitats and key winter range are located within the 172,459 acres comprising zone 1. The remainder of the general winter habitat is found in zone 2.

From 1995-2012, wildfires burned 1,598 acres in zone 1. This is an average of less than 100 acres per year. This is is not unexpected given the soil/ temperature moisture types, elevation and vegetation within zone 1. Existing wildfire control efforts within zone 1 are sufficient to maintain wildfires within acceptable thresholds.

While wildfires burned quite a few acres within zone 2, the large amount of general winter habitat within zone 2 suggests that the existing level of wildfire should not be limiting. Nevertheless, by prioritizing wildfire control in zone 2, enhanced prevention and suppression strategies could substantially decrease the number of acres burned. While 31,250 acres burned in zone 2 from 1995-2015, two fires in 1998 (of 12,894 acres and 13,927 acres, respectively) accounted for 86% of acres burned. These fires were not in areas that would have a substantial impact on Sage-grouse

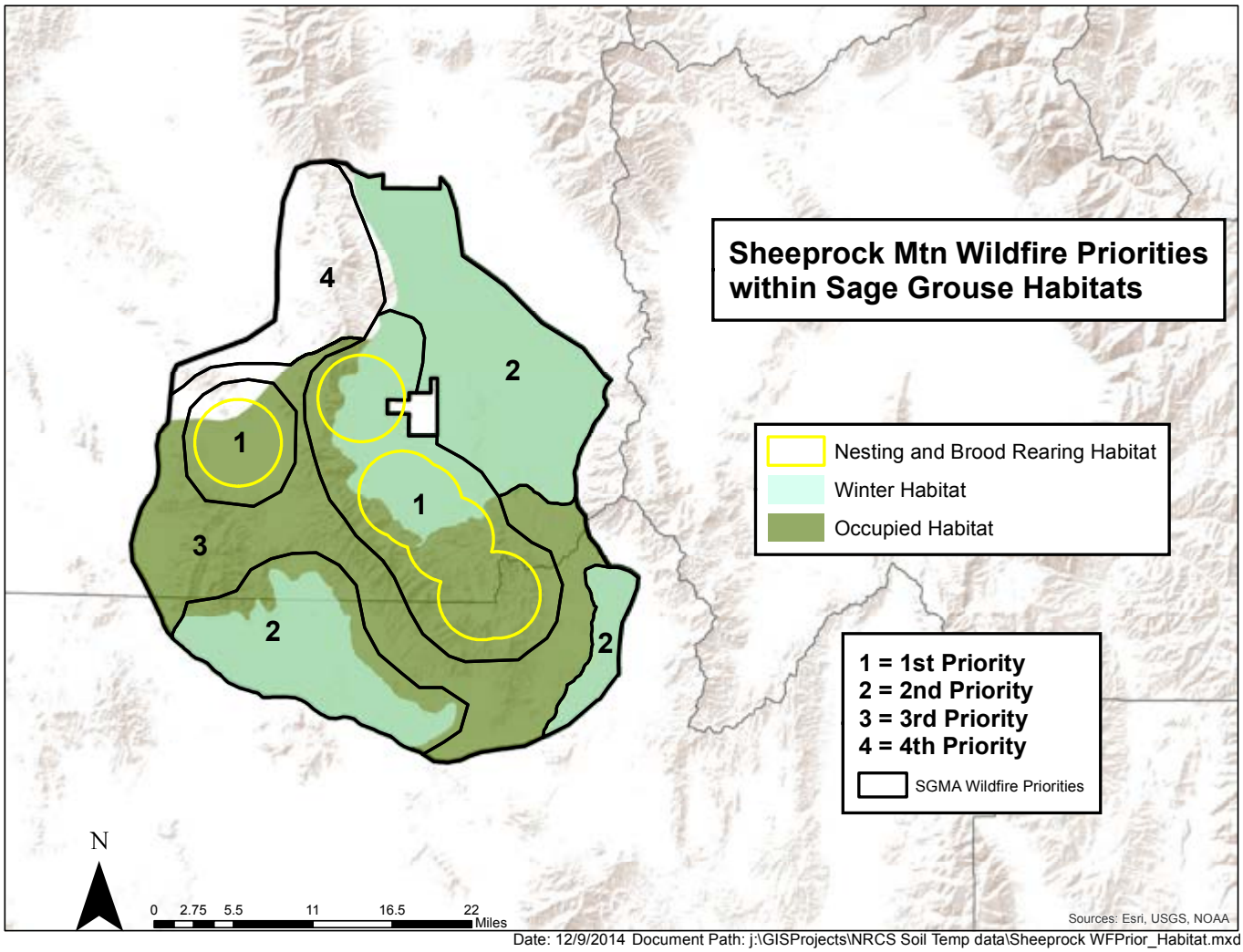


Figure 28 - 100% of Sage-grouse leks and nesting/brood rearing habitat are located within the priority zone 1 within the Sheep Rocks SGMA. The low incidence of wildfire and lack of large wildfires illustrate that existing habit should be sufficient to protect Sage-grouse populations in this SGMA.

populations. Nevertheless, prevention efforts including conifer removal and enhanced suppression strategies should be able to reduce the impact of wildfires within the Sheeprock Mountain SGMA. An additional 30,435 acres of conifer-removal work is planned in the Sheeprock Mountains SGMA over the next few years. Wildfire is not a major threat in zones 3 and 4. Between 1995 and 2012, 3,093 acres burned in zone 3, while 2,892 burned in zone 4. Because these areas contain general habitat, opportunity areas and non-habitat, it makes sense to prioritize these areas behind zones 1 and 2.

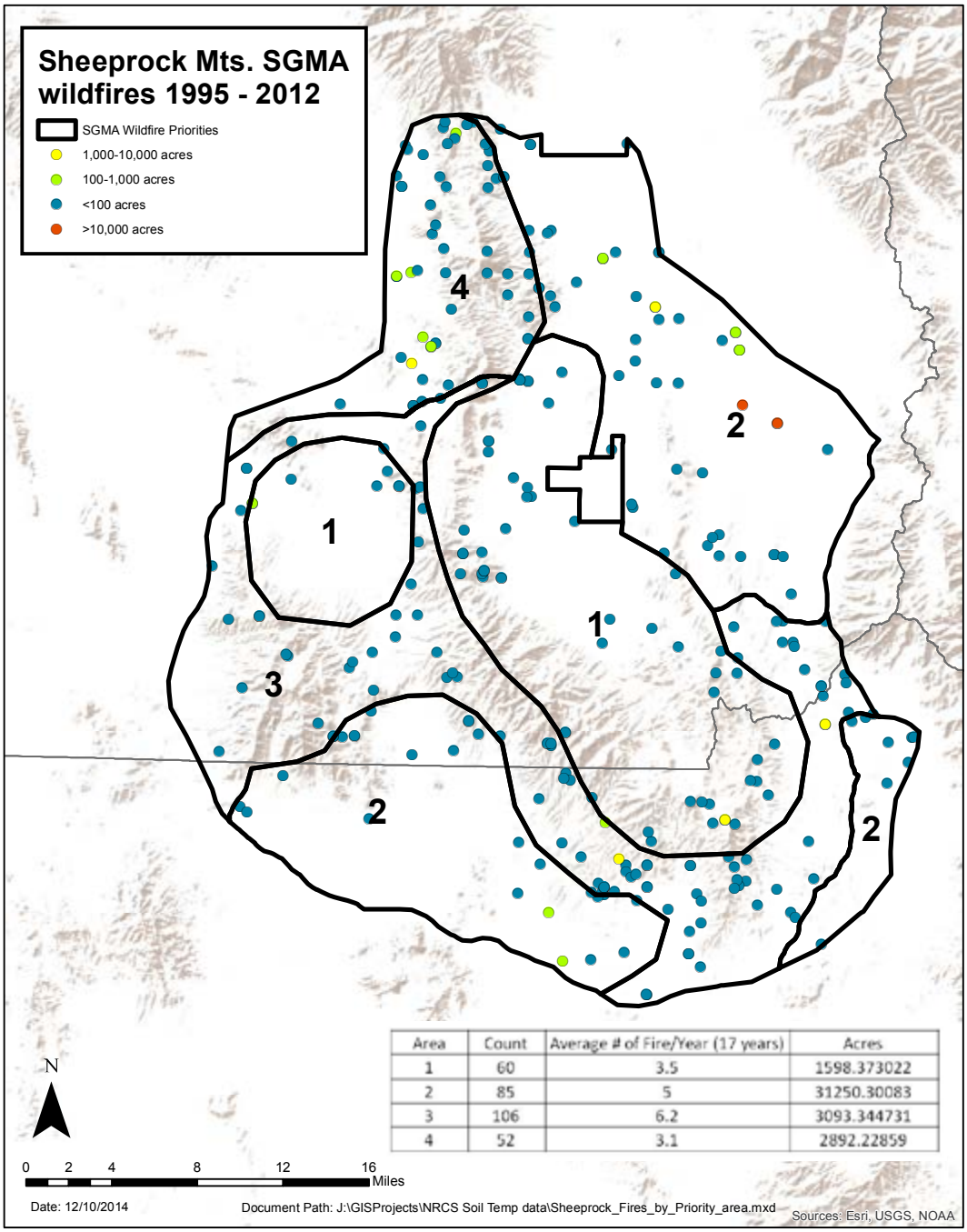


Figure 29 - Existing wildfire control efforts are effectively controlling wildfires within priority zone 1 which contains 100% of the leks and nesting/brood rearing habitat for the Sheeprock Mountains SGMA. Only 1,598 acres burned from 1995-2012 in zone 1, primarily during one fire.

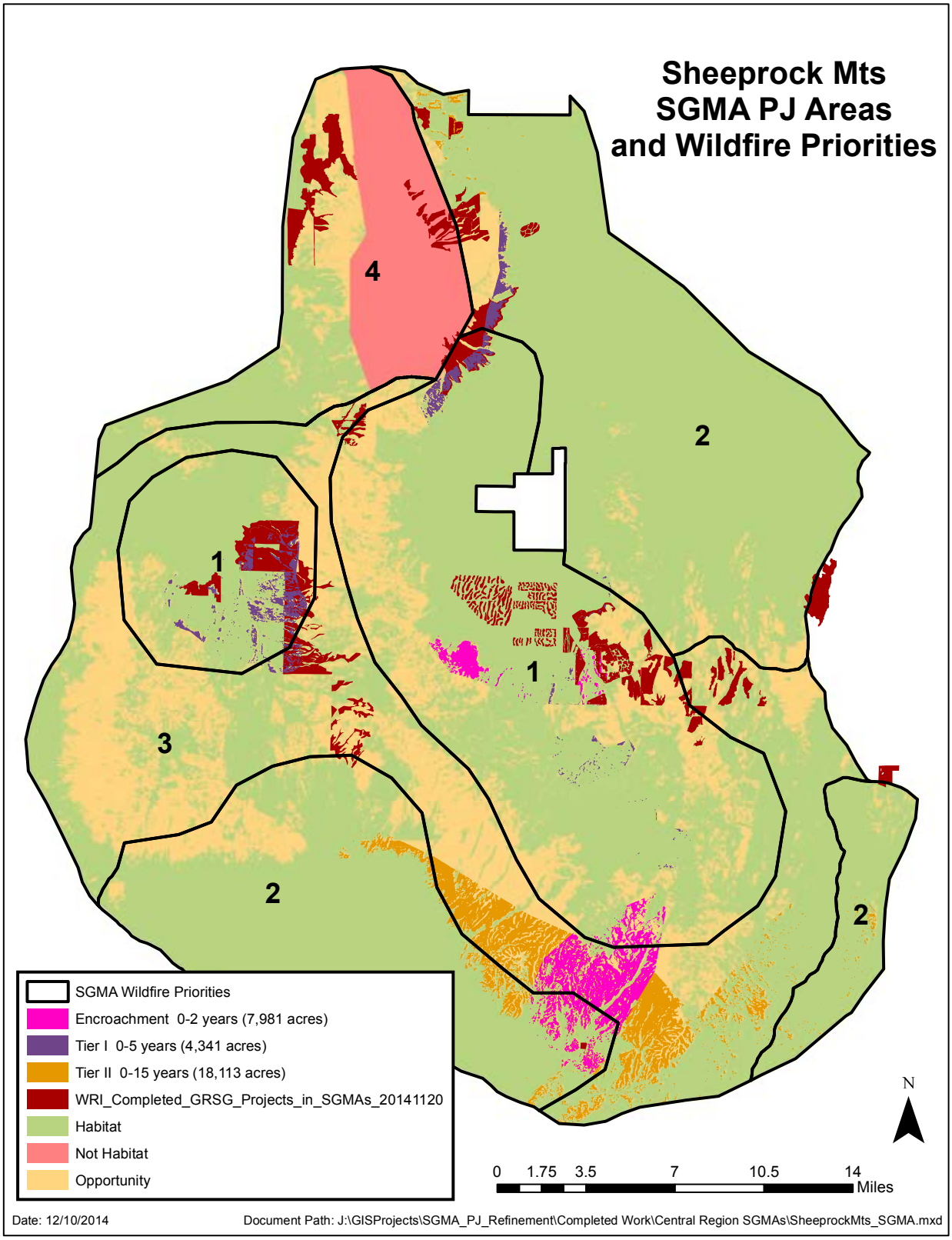
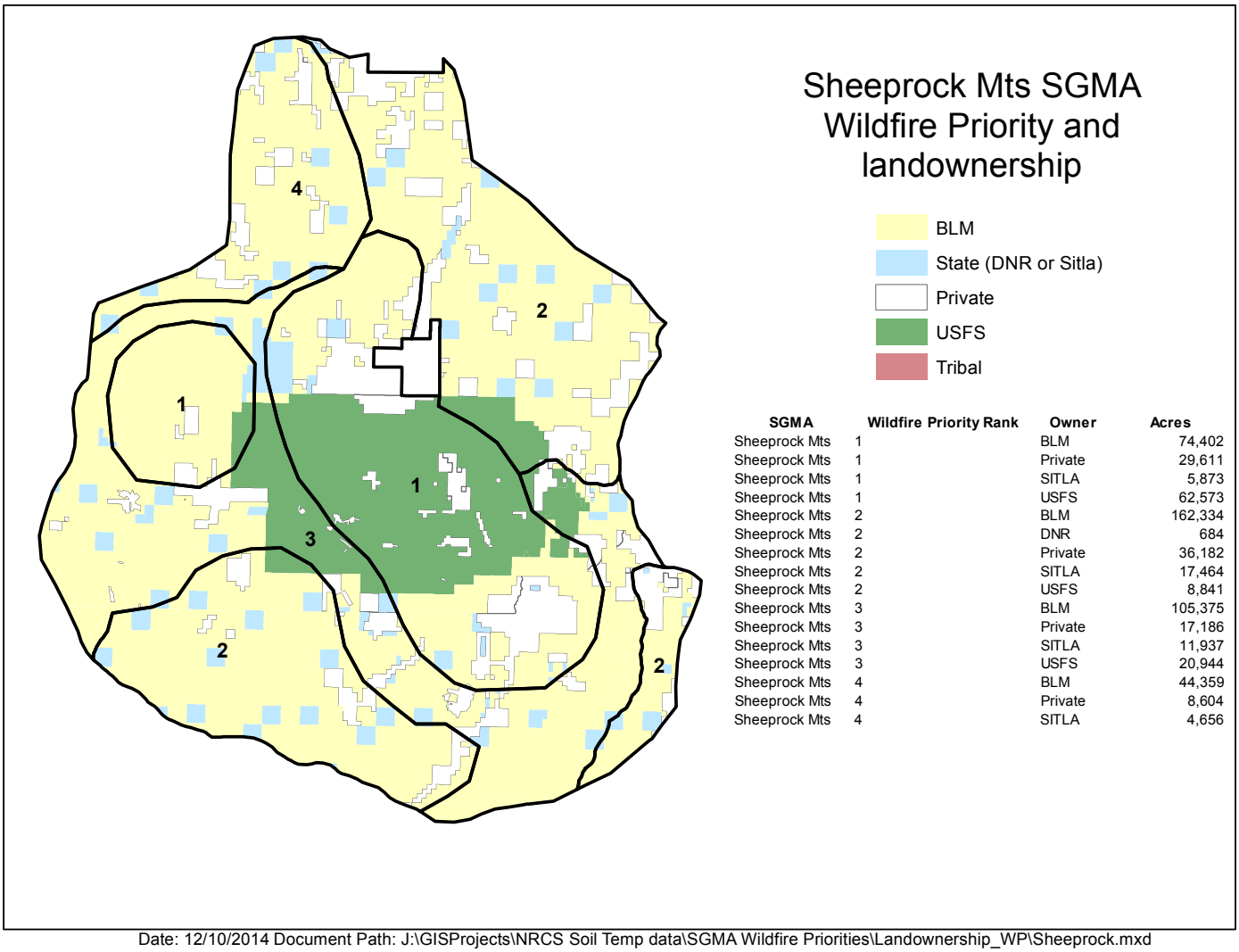


Figure 30 - conifer removal in areas of leks and nesting/brood rearing habitat are helpful to protect Sage-grouse populations in the Sheeprock SGMA. These projects also increase available habitat in key areas.



SGMA	Wildfire Priority Rank	Owner	Acres
Sheeprock Mts	1	BLM	74,402
Sheeprock Mts	1	Private	29,611
Sheeprock Mts	1	SITLA	5,873
Sheeprock Mts	1	USFS	62,573
Sheeprock Mts	2	BLM	162,334
Sheeprock Mts	2	DNR	684
Sheeprock Mts	2	Private	36,182
Sheeprock Mts	2	SITLA	17,464
Sheeprock Mts	2	USFS	8,841
Sheeprock Mts	3	BLM	105,375
Sheeprock Mts	3	Private	17,186
Sheeprock Mts	3	SITLA	11,937
Sheeprock Mts	3	USFS	20,944
Sheeprock Mts	4	BLM	44,359
Sheeprock Mts	4	Private	8,604
Sheeprock Mts	4	SITLA	4,656

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Figure 31 - land managed by the Bureau of Land Management and forest service comprise the majority of the Sheeprock SGMA.

Ibapah

Overview

Wildfire is not a major threat within the Ibapah SGMA. In fact, Ibapah averages less than one fire per year across the entire SGMA. Like other SGMA's that contain primarily desert shrub habitat, Ibapah has Sage-grouse populations and core sage-grouse habitat that are quite localized. In fact, 100% of leks, nesting/brood-rearing and key winter range is contained within the 51,299 acres in zone 1. Soil and temperature regimes within portions of the Ibapah SGMA suggest that providing enhanced prioritization of Ibapah SGMA makes sense.

Conifer removal is an important strategy for further reducing the threat of large wildfires within the Ibapah SGMA. Nearly 3,900 acres of pinyon-juniper removal are planned in coming years, and much of this will occur in zone 1. Upon completion of these pinyon-juniper removal projects very few conifers will remain within zone 1. This should further reduce the likelihood of large fires, while also making fires easier to suppress when they do occur.

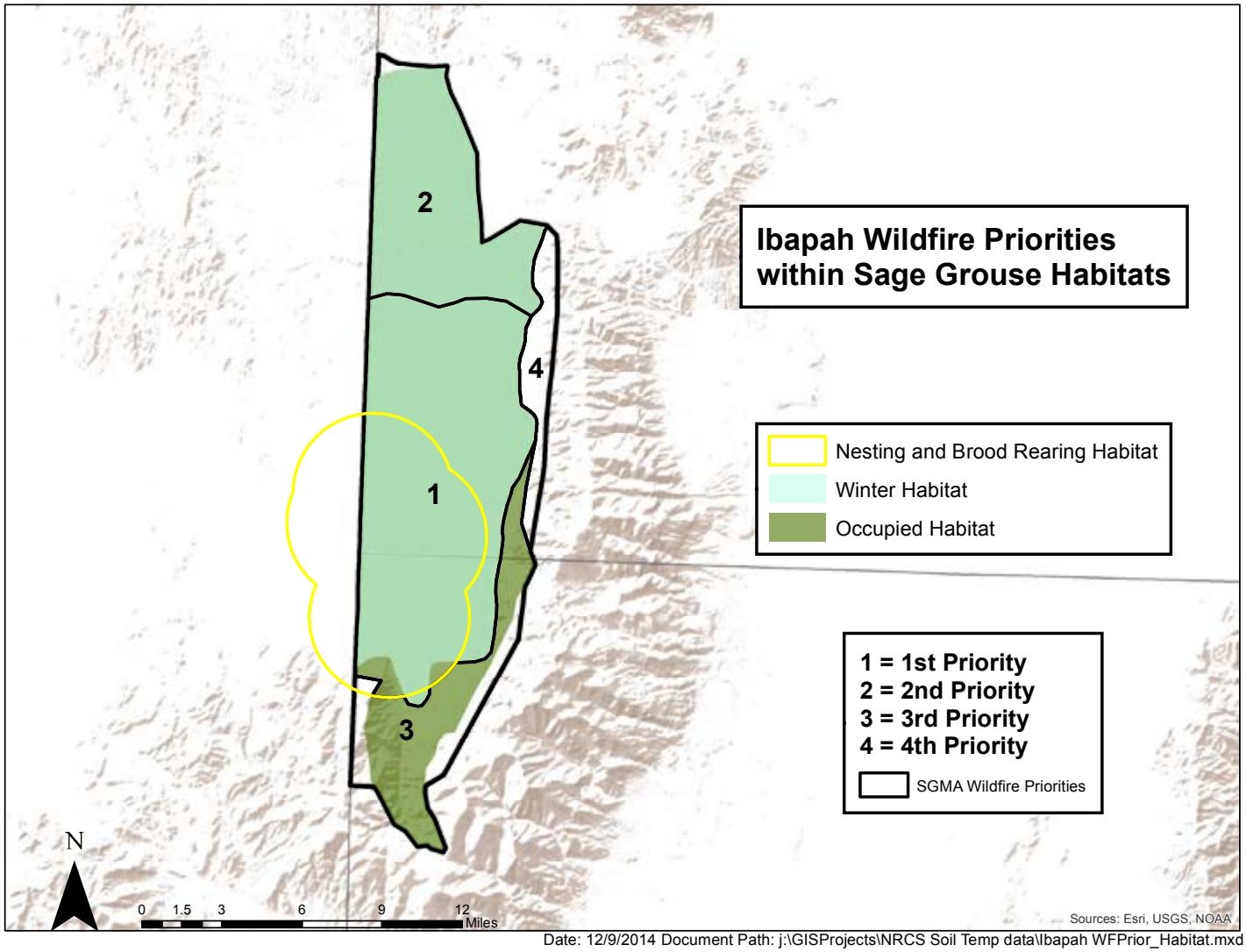

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Figure 32 - One-hundred percent of Sage-grouse leks and nesting/brood-rearing habitats are located in the priority zone 1 of the Ibapah SGMA. The low incidence of wildfire and lack of large wildfires illustrate that existing habit should be sufficient to protect Sage-grouse populations in this SGMA.

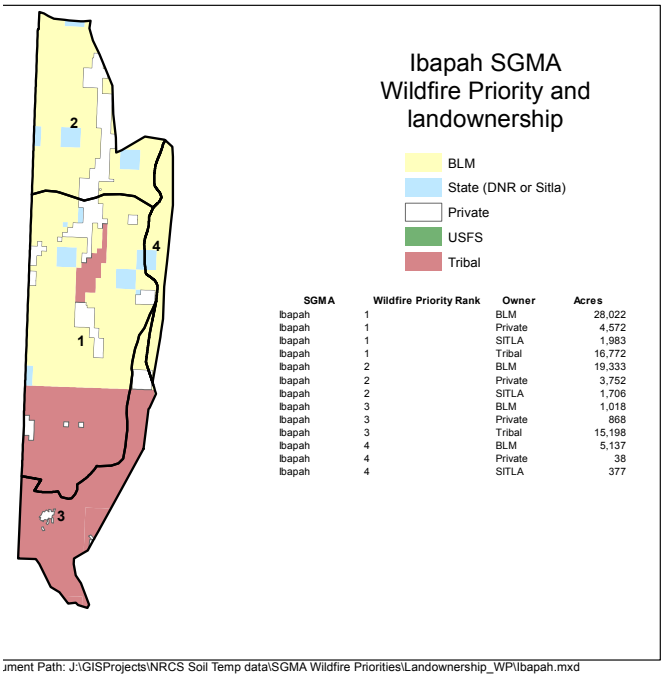


Figure 343 - The majority of the Ibapah SGMA is managed by the BLM while acreage in the southern portion is Tribal Land. Coordination will be helpful in implementation of conifer-treatment and fire-control projects within the Ibapah SGMA.

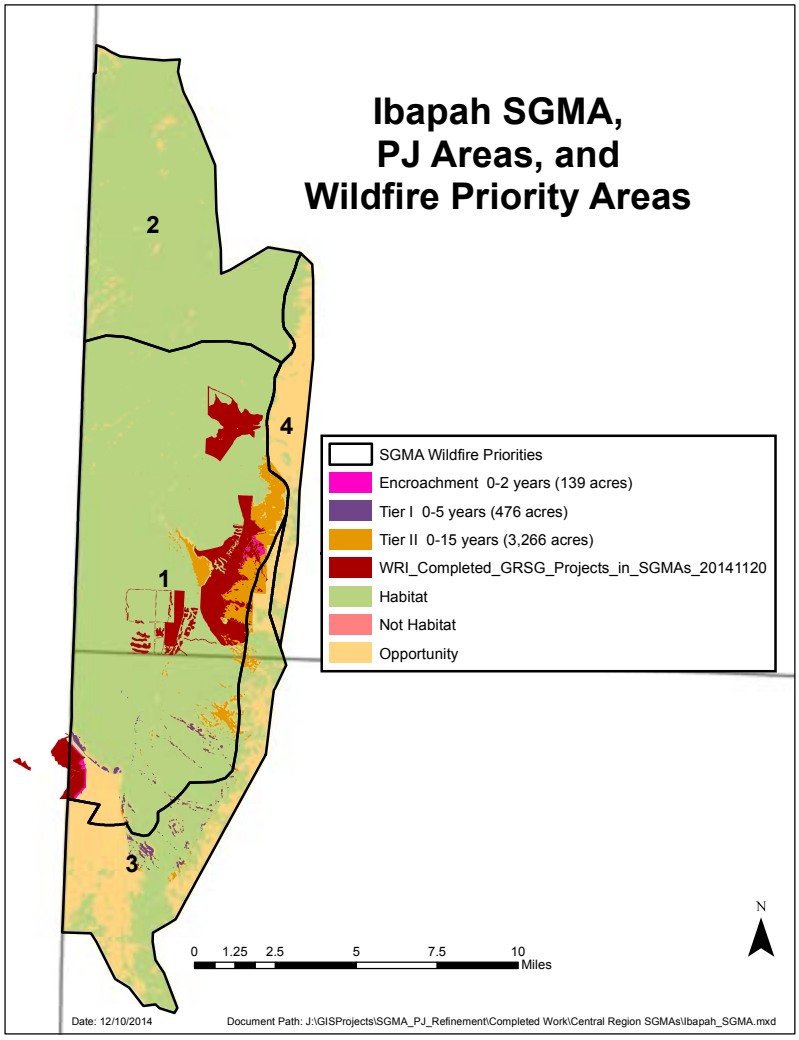
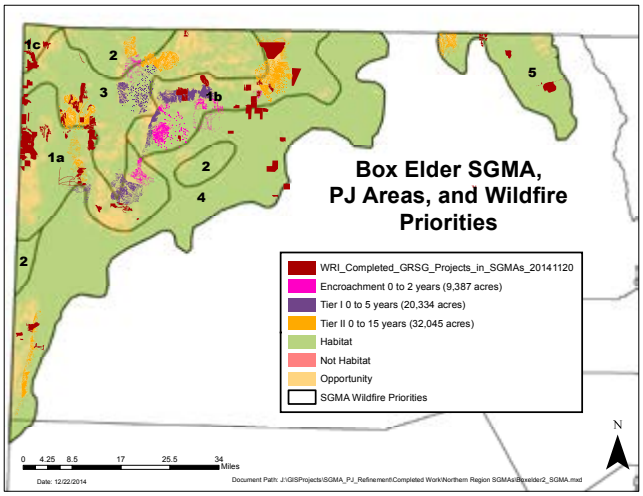


Figure 34 - Conifer removal near leks and nesting/brood rearing habitat will help protect Sage-grouse populations in the Ibapah SGMA. These projects also increase available habitat in key areas.

Conclusion Conservation for Long-Term

The following is a brief overview of habitat enhancement and wildfire prevention strategies for each Utah SGMA:

Box Elder - Highest Priority

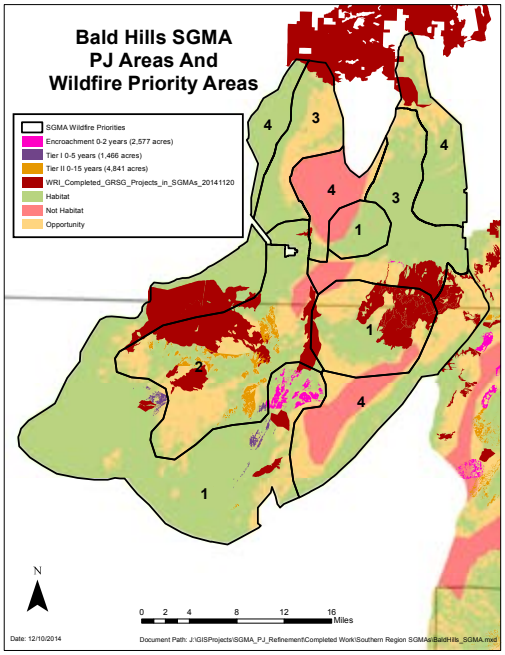


Past habitat work/conifer removal: 91,185 acres

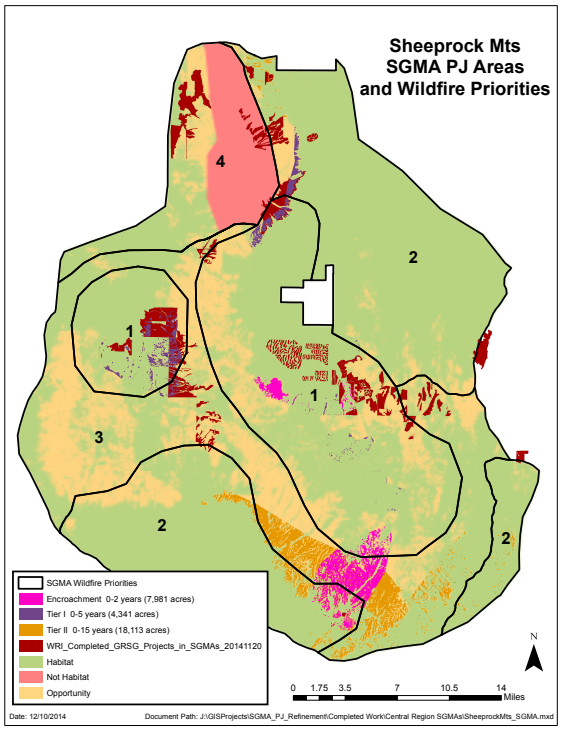
Projected work to be completed in next 10-15 years: 61,766 acres

Total habitat restoration:152,951 acres

Bald Hills - Highest Priority



Sheep Rock Mountains - Elevated Priority



Past habitat work/conifer removal: 22,515 acres

Projected work to be completed in next 10-15 years: 30,435 acres

Total habitat restoration: 52,950 acres

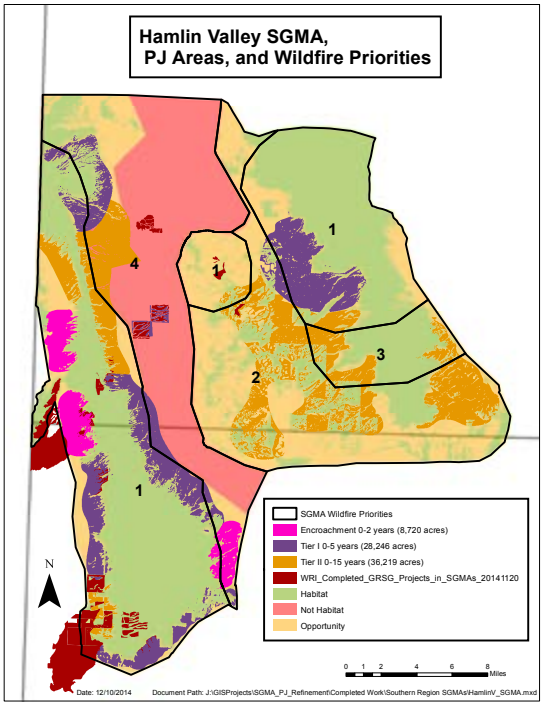
(Bald Hills Continued)

Past Habitat work/conifer removal: 68,799 acres

Projected work to be completed in next 10-15 years: 8,884 acres

Total habitat restoration: 77,683 acres

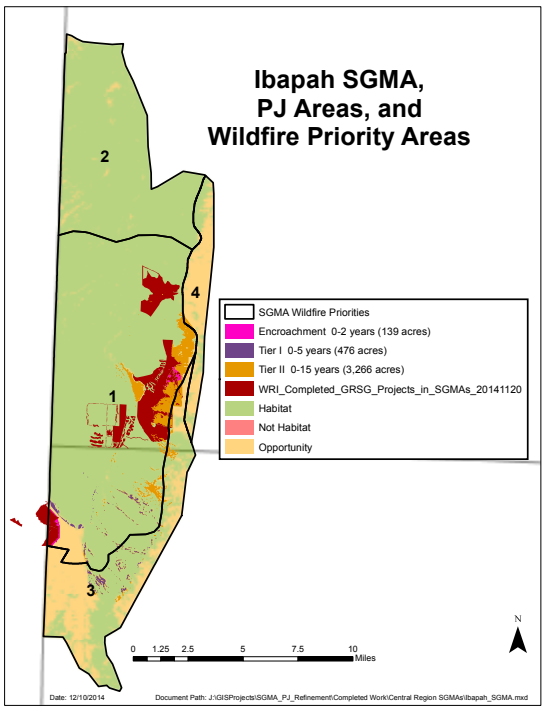
Hamlin Valley - Elevated Priority



Past habitat work/conifer removal: 9,839 acres

Projected work to be completed in next 10-15 years: 73,185 acres

Total habitat restoration: 83,024 acres



Ibapah - Elevated Priority

Past Habitat Work/Conifer Removal: 7,413 acres

Projected work to be completed in next 10-15 years: 3,881

Total habitat restoration: 11,294 acres

Conclusion

While wildfire is a natural occurrence in Western landscapes, changes in wildfire frequency and severity are a concern for Greater Sage-grouse. In Utah, wildfire impacts are primarily seen on five of Utah's SGMAs. These areas contain 26% of the state's Sage-grouse. In other words, most of the Utah's Sage-grouse populations are not in high-risk wildfire areas. In the SGMA's that have an elevated priority, Utah's addresses wildfire threats by implementing proven proven prevention, suppression and rehabilitation solutions. State and federal partners have a track record of cooperation, working together on landscape-scale prevention and rehabilitation projects to reduce the threat of wildfire in the state of Utah. Since 2006, more than 560,000 acres of Sage-grouse habitat restoration projects have been completed. Enhanced suppression strategies can further reduce the threat of wildfires in these higher-risk SGMAs. This will be an area of focus particularly in Box Elder and Bald Hills SGMAs where protection from wildfires is a top priority. It will also be a priority in the Ibapah, Hamlin Valley and Sheeprock Mountain SGMAs.

Sources: [NRCS, UT DWR]

UTAH CONSERVATION STRATEGIES *(CONT.)*

Oil & Gas Development

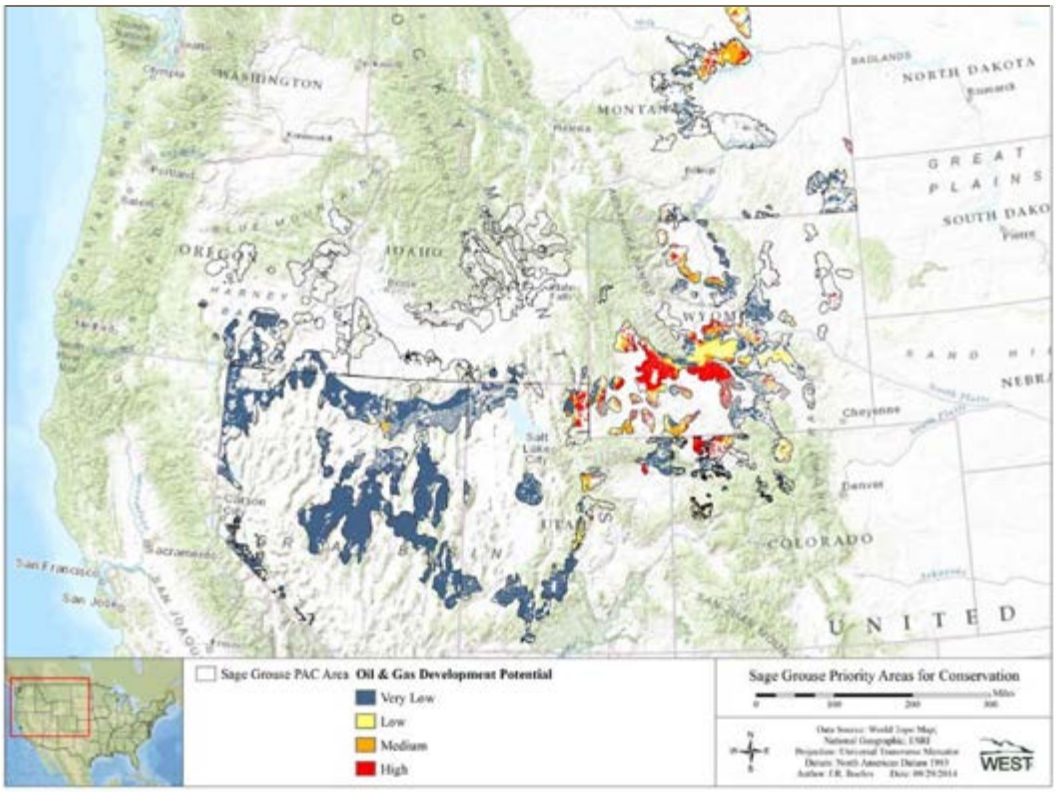


Figure 10. While oil and gas development is a significant concern in portions of the range, oil and gas development is not a significant concern in Utah's SGMAs (Copeland et al 2009).

Oil and Gas wells are not a threat within Utah's Sage-grouse Management Areas. 98% of the acreage within Utah's SGMAs, or 7.29 million acres, do not correspond with oil and gas fields/units. There are only approximately 189 known oil and gas wells located on these 7.29 million acres. This shows just how little actual oil and gas development has occurred on the vast majority of core Sage-grouse habitat within the state of Utah. Utah's Plan provides a framework for balancing the need for long-term protection of Sage-grouse populations with responsible energy development. Utah Governor Gary Herbert signed an executive order on February 25, 2015 addressing the state's regulatory mechanisms for oil and gas development in Sage-grouse habitat. Given the limited and localized nature of existing oil and gas development within Utah's SGMAs, Utah's Plan is more than sufficient to ensure long term conservation of Greater Sage-grouse in the state.

OIL AND GAS DEVELOPMENT

Overview: *Oil and gas wells are not a major threat to Sage-grouse in the state of Utah. Ninety-eight percent of the acreage within Utah's SGMAs, or 7.29 million acres, does not correspond with oil and gas fields/units. There are approximately 189 known oil and gas wells located on these 7.29 million acres. The Conservation Plan for Greater Sage-Grouse in Utah provides a framework for balancing the long-term protection of Sage-grouse populations with responsible energy development. Given the limited and localized nature of existing oil and gas development within Utah's SGMAs, Utah's plan is more than sufficient to protect 94% of Utah's Greater Sage-grouse from the effects of oil and gas development.*

Affected SGMAs: Rich-Morgan-Summit, Uintah and Carbon.

Oil and Gas Development in Sage-Grouse Habitat

Utah has robust industries for oil and gas in several regions of the state. Ensuring that oil and gas development does not unnecessarily impact healthy Sage-grouse populations is an area of focus for the Conservation Plan for Greater Sage-Grouse in Utah (the Conservation Plan), adopted in February 2013. The best Sage-grouse habitat in the State of Utah is located within eleven Sage-Grouse Management Areas (SGMAs) established in the Conservation Plan. There is very little current oil and gas development within these SGMAs. In fact, most of the oil and gas wells are found on oil and gas fields that comprise just 2% of the acreage within Utah's SGMAs. There are just 189 known oil and gas wells on the remaining 98% of the acreage. Considering that the SGMAs hold 94% of the state's Sage-grouse on 7.4 million acres, the Conservation Plan properly balances responsible energy development with long-term conservation of Greater Sage-grouse. Existing oil and gas development has had little or no impact on the vast majority of Sage-grouse populations within Utah's SGMAs. Moreover, a detailed analysis of historic oil and gas development

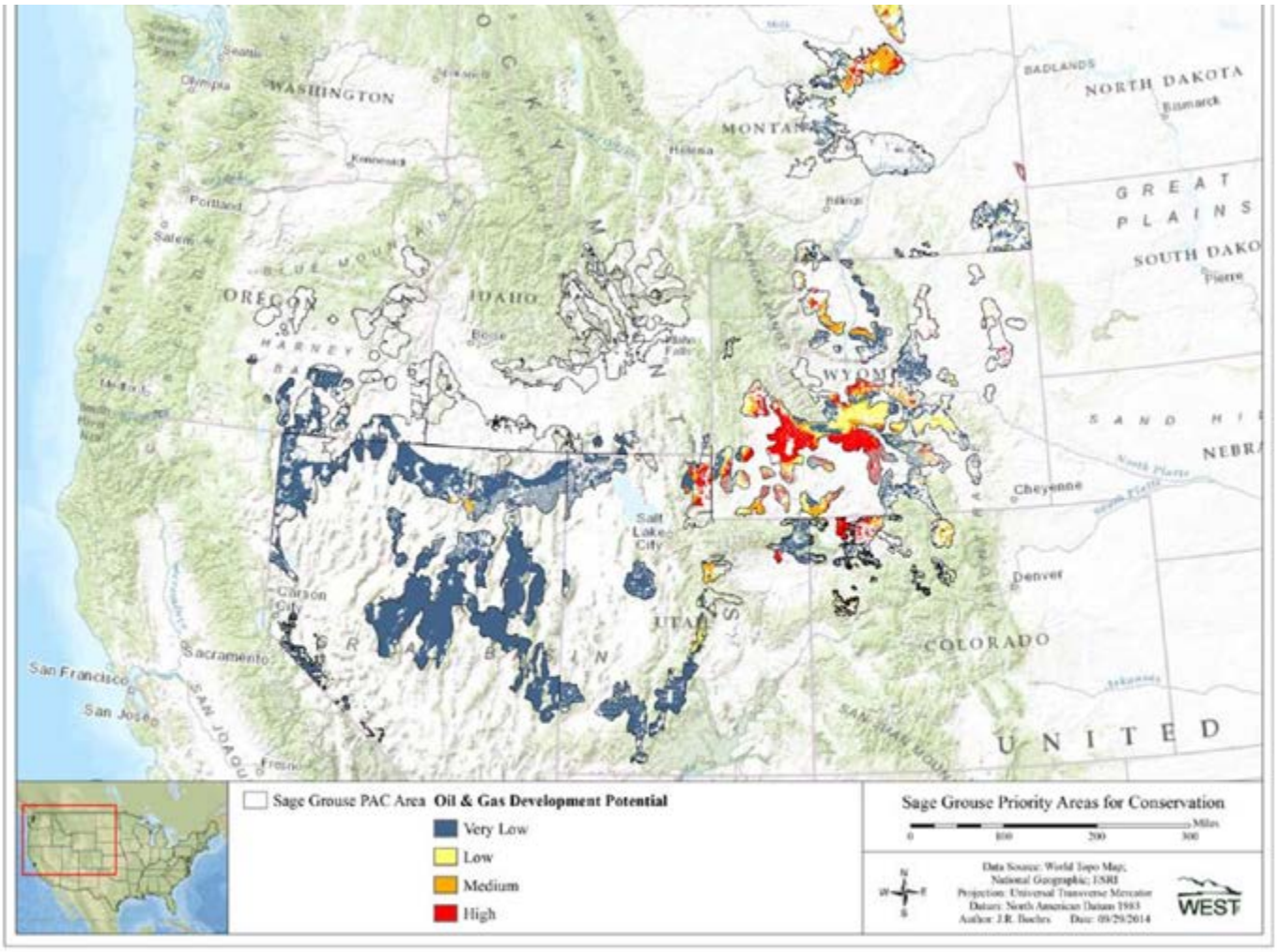


Figure 1: Most of Utah's SGMAs are categorized as "very low" development potential for oil and gas. See Figure 3 at http://westernvaluesproject.org/wp-content/uploads/2014/10/Greater-Sage-Grouse-Priority-Habitats-and-Energy-Development.pdf

trends, combined with an understanding of the geology of Utah's SGMAs, suggests that, within the foreseeable future, oil and gas development will not become a significant issue within the SGMA's. Nevertheless, the Conservation Plan, includes important provisions to ensure protections for Greater Sage-grouse, now and in the future. It provides a framework for ensuring responsible energy development in Utah's SGMAs through the application of buffers, avoidance, minimization stipulations and mitigation, if necessary, due to valid existing rights.

Conservation Objectives Team Report

Representatives from federal and state agencies joined together to develop recommendations for addressing threats to Sage-grouse through updated state management plans. The Conservation Objectives Team Report (COT Report), released in March 2013, includes topics addressing the establishment of Priority Areas for Conservation (PACs) and recommendations regarding oil and gas development. While the recommendations are non-binding, most Sage-grouse states developed some variation of the

recommendations as part of their state Sage-grouse conservation plans. Utah was no exception.

Priority Areas for Conservation and SGMAs

One of the important acknowledgements of the COT Report is that current Sage-grouse numbers and distribution are sufficient to ensure robust Sage-grouse populations. The COT Report's focus on Priority Areas of Conservation (PACs) as areas where short-term and long-term efforts should be focused to ensure the conservation of Sage-grouse. PACs use the same core area philosophy that underlies Utah's SGMAs.

The core areas philosophy does not preclude all development, but rather seeks to achieve balance between development and conservation: "Landscape planning to balance wildlife conservation with resource development…must embrace the social and political realities of the region…Core regions represent a proactive attempt to identify a set of conservation targets to maintain a viable and connected set of populations." (Knick and Connelly, Studies in Avian Biology, No. 38, page 513, 515) Utah's SGMA's were adopted within the COT Report as the PACs in the state of Utah.

Oil and Gas Development in SGMAs

	Nesting/ Brood Rearing Habitat	General Habitat, Opportunity Areas and Non-Habitat
Oil and Gas Fields Units	43,713 acres	102,651 acres
Areas inside SGMAs not having oil and Gas Fields/Units	2,802,034 acres	4,490,933 acres

Figure 2: Approximately 98% of the acreage within Utah's SGMAs does not correspond with oil and gas fields/units. Very little development occurs on the 7.29 million acres outside of oil and gas fields/units within SGMAs.

Valid Pre-existing Rights

An important acknowledgement in the COT Report is the constitutionally mandated protection for "Valid Pre-existing Rights." Utah's SGMAs include several oil and gas fields and approximately 2.5 million acres of private property. These fields include not only oil and gas wells, but also active leases for additional future development. It is also important to note that private property can be leased for future mineral development. These are valid existing rights.

Existing oil and gas fields within Utah's SGMAs cover 146,364 acres, or 2% of the 7.4 million acres within Utah's SGMAs. A more in-depth analysis of several oil and gas fields is included on pages 8, 9 and 10 of this document. Several oil and gas fields (and oil and gas units) were included in Utah's SGMAs primarily because the areas can again serve as unencumbered habitat once wells are no longer in use. Additionally, these areas can be useful for connectivity between SGMAs.

There are just 97 known oil wells and 92 known gas wells within the 7.29 million acres outside of established fields/units within Utah's SGMAs. However, areas of higher well density among these outliers tend to be localized, and largely correlate with existing fields and units. This limited and localized nature of high well density is not surprising when one understands the nature of the oil and gas reservoirs within Utah's SGMAs.

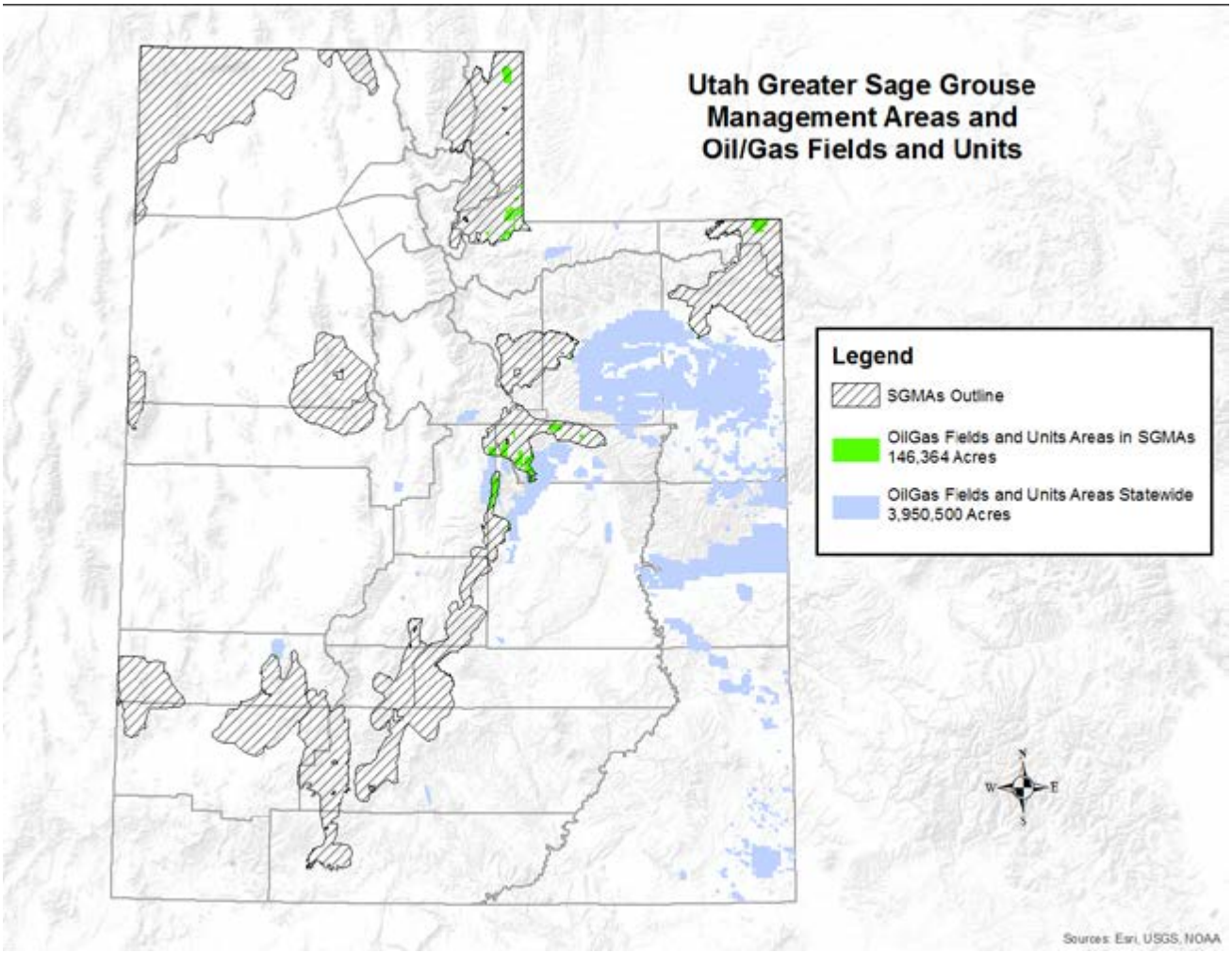


Figure 3: Just 3.7% of Utah's oil and gas fields and units lie within Utah's SGMAs. Ninety-eight percent of the acreage within Utah's SGMAs does not coincide with oil and gas fields.

Of the lands within SGMAs that are also within established fields/units, just 43,713 acres coincides with nesting/brood rearing habitats. This amounts to only 1.5% of nesting/brood rearing habitat statewide. More importantly, 2,802,034 acres of nesting/brood-rearing habitat does not coincide with oil and gas fields/units.

Leks and Nesting/Brood-Rearing Habitat

The COT Report discusses proposed general regulatory structures for oil and gas development in core areas with respect to leks, nesting and brood rearing habitat. Leks are areas where Sage-grouse congregate in early spring for mating rituals. Research has demonstrated that 90% of nesting occurs within three miles of active leks. What this means is that during the important spring mating and nesting/brood-rearing season, oil and gas activity in areas adjacent to leks could potentially have an impact of some level upon the birds' ability to successfully hatch and raise a brood of chicks.

For this reason, the Conservation Plan calls for no development within one mile of active leks, in order to support the spring mating season. Additionally, to avoid conflicts in nesting/brood-rearing areas, a three pronged approach of "Avoid,

Minimize and Mitigate" is prescribed in areas that lie between one and three miles from leks[1]. In addition, the Conservation Plan provides similar protections for vital winter habitat.

Regulatory Structure for Areas Outside of Nesting and Brood Rearing Habitat

Generalized federal recommendations suggest that oil and gas development be limited to no more than one disturbance per section for areas that are outside of nesting/brood rearing habitat. Under these recommendations, each well pad (a disturbance) can be up to 32 acres in size and can include multiple wells. Advances in directional drilling technology allow multiple well-bores to be drilled in all directions from one surface location in order to access the entire fluid reservoir within the 640-acre limitation.

However, while directional-drilling advancements are encouraging, there are some limitations that must be considered. For example, the surface topography of the land may dictate particular locations for surface facilities. Some of these locations may not allow directional drilling to access all subsurface mineral resources. If this occurs in an area of valid, existing rights, the Conservation Plan allows multiple pads to avoid waste of oil and gas resources, subject to strict mitigation requirements. In these cases, siting of well pads is conducted pursuant to the Governor's Executive Order, in consultation with the Utah Division of Wildlife Resources to satisfy the requirements of the Conservation Plan. In this manner, energy development can proceed with maximum consideration given to long-term Sage-grouse conservation.

The Foreseeable Future of Oil and Gas Development in SGMAs

Oil and gas activity is not a major threat to Sage-grouse in Utah, primarily because 98% of the acreage within Utah's SGMAs, or 7,292,967 acres does not coincide with oil and gas fields or with oil and gas units.

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[1] The Conservation Plan defines "Avoidance" as overt action that eliminates disturbance to Greater Sage-grouse and its habitat. Examples include (a) purposefully siting activities in non-habitat or opportunity areas rather than habitat areas, or siting a project outside the SGMA. "Minimization" means actions that reduce the amount, duration, or impact of disturbance within habitat. Examples include (a) using a smaller development footprint; (b) the reduction of noise levels below identified thresholds, or (c) the reduction of traffic volume on a road. Minimization does not preclude the need to mitigate (compensate) for the disturbance which occurs within habitat. "Mitigation" means actions that are designed to create new habitat or to reduce disturbances by the creation of or protection of other habitat for birds. For more information see page 20 at http://wildlife.utah.gov/uplandgame/sage-grouse/pdf/greater_sage_grouse_plan.pdf. Required mitigation can be between 1:1 and as much as 4:1 compensation, depending upon disturbance and habitat type.

Some oil and gas wells can be found in areas designated as nesting/brood-rearing habitat but outside of existing fields/units. However, the total number of wells in these areas is extremely low and will have little or no impact on long-term conservation of Greater Sage-grouse. There are 2,802,034 acres of nesting/brood-rearing habitat in Utah's SGMAs which are outside of oil and gas fields/units. There are currently 26 oil wells and 29 gas wells on these 2,802,034 acres. Outside of one area in the Rich/Morgan/Summit SGMA, very little development potential coincides with nesting brood rearing areas in Utah's SGMAs.

The historic low level of development within SGMAs specifically within nesting/brood-rearing habitats and other important areas, and the recent studies of geological potential suggest that oil and gas development is not a major threat to the species in Utah.

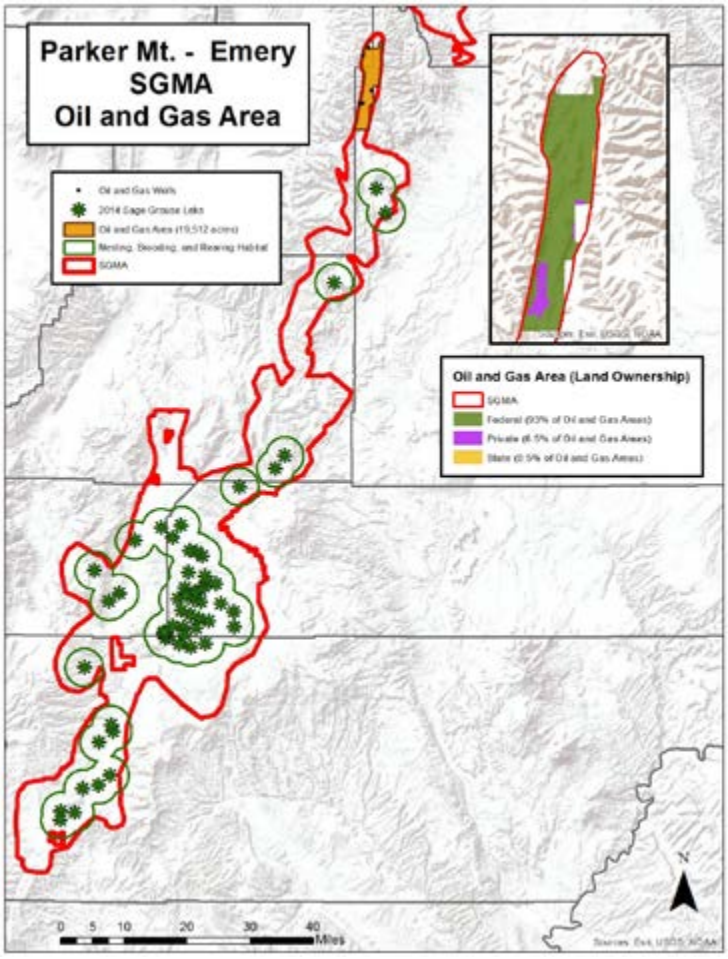


Figure 4: With just one oil well and three gas wells on 19,512 acres, there is very little development in the oil and gas field/unit located on the northern end of the Parker Mountain SGMA.

The Conservation Plan is designed to ensure that any future development in nesting/brood-rearing habitat is conducted in ways that avoid and minimize impacts on Greater Sage-grouse. This is consistent with the recommendations of the COT report, "If development must occur in Sage-grouse habitats due to existing rights and lack of reasonable alternative avoidance measures, the development should occur in the least suitable habitat for Sage-grouse and be designed to ensure at a minimum that there are no detectable declines in Sage-grouse population trends…"

Utah's conservation strategies for responsible energy development in SGMAs incorporate: (1) a fine-scale knowledge of Sage-grouse needs and habitats, (2) analysis of historical development patterns, and (3) an understanding of the likelihood of future development. Considering the low number of existing oil and gas wells in Utah's SGMAs and the fact that few areas have high-density development potential, Utah's balanced approach is more than adequate to protect Greater Sage-grouse nesting/brood-rearing habitats within SGMAs. Utah's balanced approach is also sufficient to protect private property rights and minimize unnecessary impacts on responsible energy development for many of the same reasons.

Oil/Gas Fields in SGMAs Outside of Nesting/ Brood Rearing Habitat

There are three oil and gas fields/units within Utah's SGMAs where valid existing rights coincide with nesting/brood-rearing habitat. The first area is in the southeastern corner of the Rich-Morgan-Summit SGMA. The second area is in the southeastern corner of the Carbon SGMA. These fields/units cover 15,706 acres in the Rich-Morgan-Summit SGMA, 9,981 acres in the

Carbon SGMA and 18,026 acres in the Uintah SGMA. It is notable that just one oil well and five gas wells are currently found in this particular field/unit in the Rich-Morgan-Summit SGMA (see Figure 4).

Because these fields contain valid existing rights, and have the potential for future development, these areas are treated by the state as long-term opportunity areas. They were included within the SGMAs in order to anticipate future growth needs for the individual populations. What this means is that when the oil and gas wells reach the end of their productivity, these areas will be reclaimed for use by Sage-grouse. Some of these areas are still utilized by birds despite development.

Given the level of existing development, these areas do not currently meet the criteria for priority habitat, but, in time, can contribute to long-term conservation of Sage-grouse in Utah.

Areas in SGMAs outside of Nesting/Brood Rearing Habitat and Outside of Fields/Units

There are 4,490,933 acres within SGMAs outside of nesting/brood-rearing habitats that do not contain oil and gas fields/units. These areas currently have a combined total of just 63 known gas wells and 71 known oil wells. Given the low level of historic development, combined with an understanding of the geology in these areas, very little new oil and gas development is expected in the foreseeable future.

Maintaining well densities below one pad per section should not be a problem in these areas. Wells that do occur will continue to be sited using the "avoid, minimize and mitigate" three-pronged approach to ensure minimal impact to the Sage-grouse populations that use these areas.

Given the high level of natural fragmentation, the presence of conifer stands and the topography in these areas, efforts to site future oil and gas development in cooperation with the Sage-grouse experts from the Utah Division of Wildlife Resources will be an effective mechanism to protect Greater Sage-grouse and their habitats. In other words, important provisions the Conservation Plan related to oil and gas development are amply designed to ensure protections for Greater Sage-grouse now and in the future by ensuring responsible energy development in Utah's SGMAs.

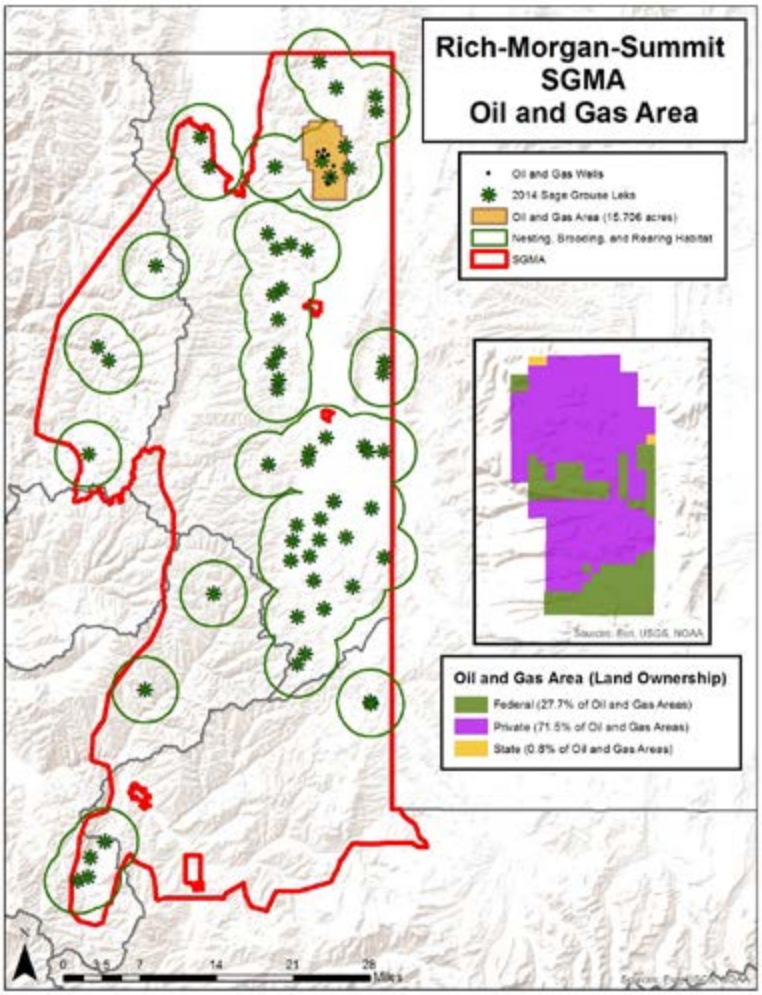
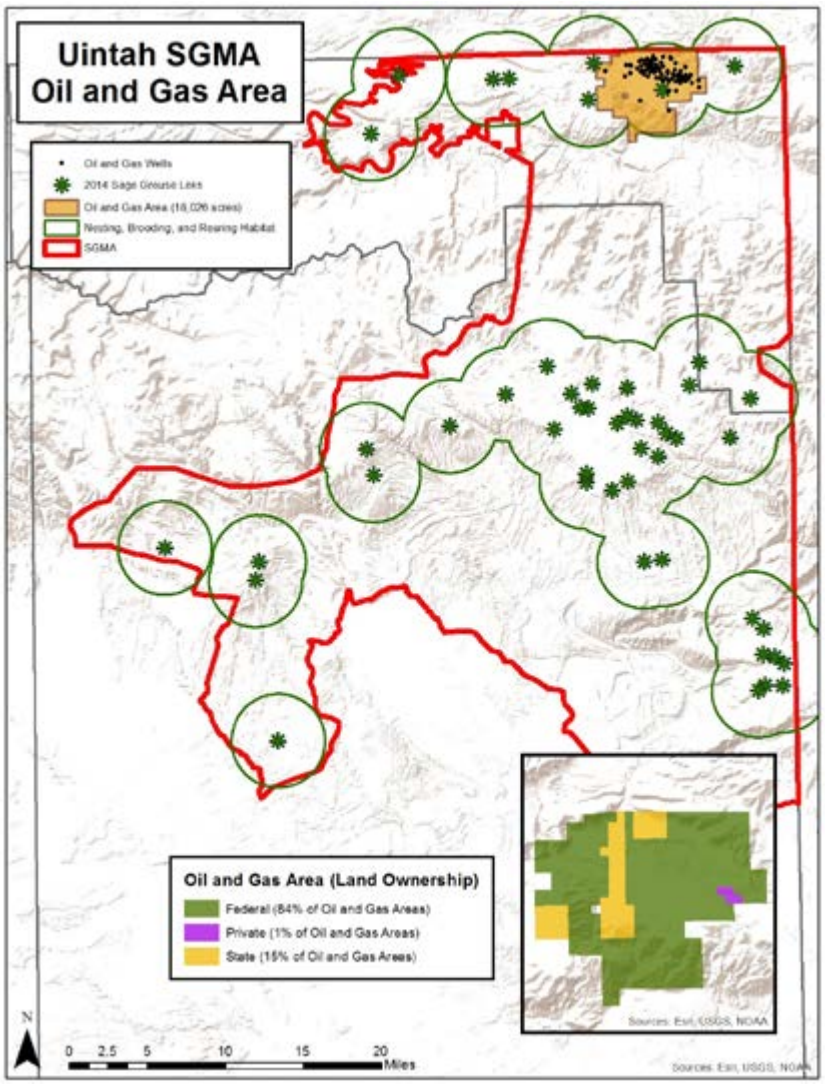


Figure 4: Not all oil and gas fields/units in Utah's SGMAs have high level of development. One field of 15,706 acres in the Rich-Morgan-Summit SGMA includes just 1 oil well and 5 gas wells.



Uintah

Oil gas fields/units in priority habitat:

Acres	18,026
Gas wells	24
(40 underground storage wells)	

Ownership of fields/units:

Federal land	84%
State land	15%
Private land	1%

Oil and gas wells outside of fields/units in nesting/brood-rearing habitats :

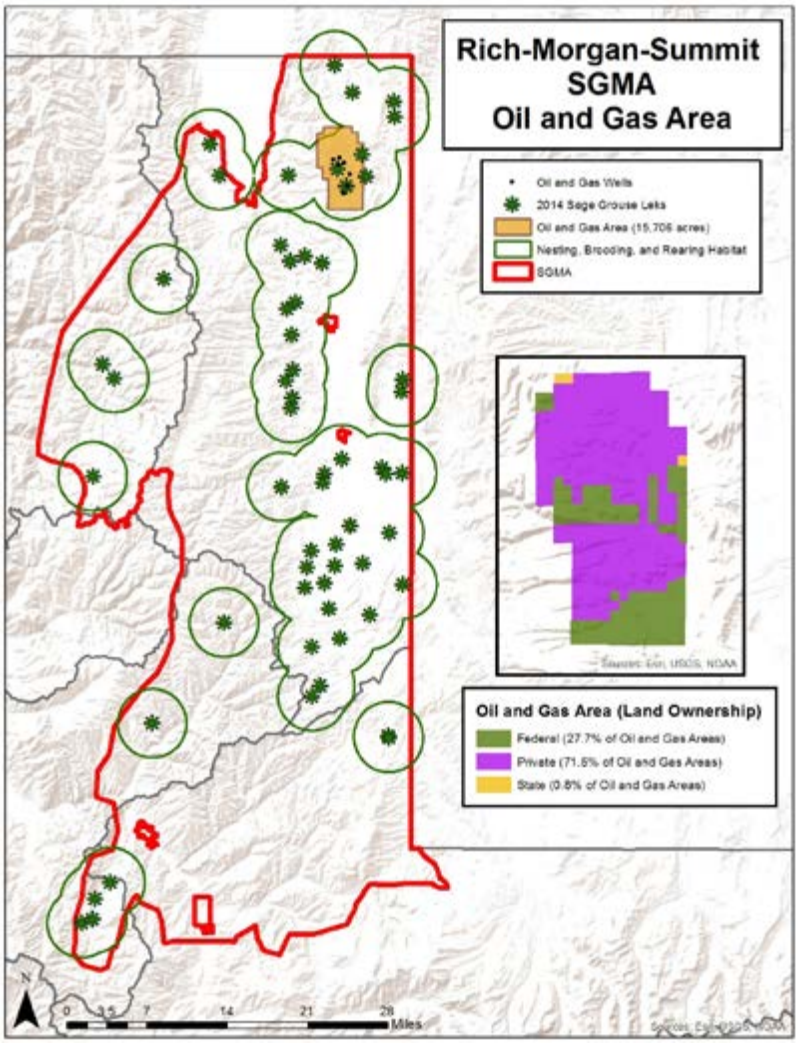
Acres	386,199
Oil wells	14
Gas wells	0

Oil and gas wells within SGMA outside of nesting/ brood rearing habitats :

Acres	388,614
Oil well	8
Gas wells	2

Detailed Assessment: Oil and gas development is not a threat in the Uintah SGMA. Valid pre-existing rights within the Clay Basin underground storage facility in the northern portion of the Uintah SGMA encompasses one active lek. This field includes approximately 24 active gas wells in addition to 40 underground storage wells. The COT Report suggests that all valid existing development rights, such those in the Clay Basin field, should be protected.

In the far southwestern portion of the Uintah SGMA, there are 14 oil wells adjacent to one lek. This is an area where additional development could be expected in the future. Pursuant to the Conservation Plan, no development will be permitted within one mile of a lek in the future. The plan also calls for avoiding, minimizing and mitigating any disturbance within three miles of a lek to help reduce any conflicts with Sage-grouse in these nesting/brood rearing areas. Implementation of the Conservation Plan is sufficient to protect these priority habitats within the Uintah SGMA.



Rich-Morgan-Summit

Oil gas fields/units in nesting/brood-rearing habitat

Acres	15,706
Oil well	1
Gas wells	5

Ownership of fields/units:

Federal land	27.7%
State land	0.8%
Private land	71.5%

Oil and gas wells outside of fields/units in nesting/brood-rearing habitats :

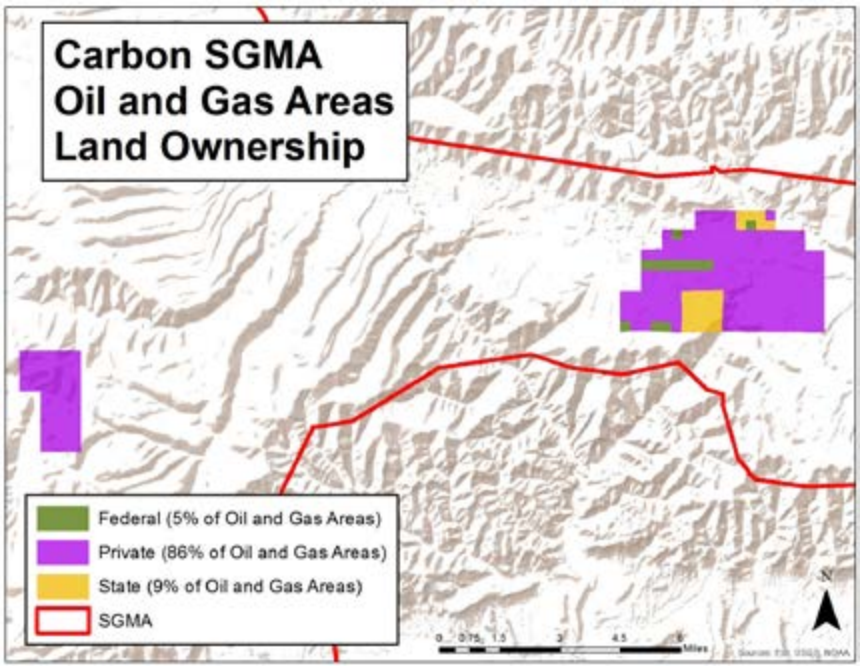
Acres	548,790
Oil wells	14
Gas wells	6

Oil and gas wells outside of nesting/ brood rearing habitats and outside of fields/units:

Oil wells	21
Gas wells	15

Detailed Assessment: There is relatively little oil and gas development in nesting/brood rearing habitats within the Rich-Morgan-Summit SGMA. There are two localized areas where most of the development occurs. In the northern portion of the Rich-Morgan-Summit SGMA there is one oil/gas field that includes two leks. With just six total wells in these fields, well density is far below thresholds that could impact Sage-grouse in the area. This is not an area where exploration and development is expected in the foreseeable future. (Figure 1)

A second localized area occurs in south/central portion of the Rich-Morgan SGMA on the border of Wyoming. This area currently has 14 oil wells and 6 gas wells and it is a place where additional development could be expected in the future. Pursuant to the Conservation Plan for Greater Sage-grouse in Utah, no development will be permitted within one mile of a lek in the future. The plan also calls for avoiding, minimizing and mitigating any disturbance between one and three miles of a lek to help reduce any conflicts with Sage-grouse in these nesting/brood-rearing areas. Implementation of the Conservation plan is sufficient to protect these priority habitats within the Rich-Morgan-Summit SGMA.



Carbon

Oil gas fields/units in priority habitat: 9,981 acres

Existing oil and gas wells :

Field #1 - Gas wells	3
Oil wells	2
(shared with gas wells)	
Field #2 - Gas wells	100

Detailed Assessment: Detailed Assessment: Field #1 has just five pads on 2,000 acres. Field #2 has valid existing rights and approximately 100 wells, which is considerably above the established threshold for priority habitat. Field #2 corresponds with one lek and the buffer of another lek. Field #2 is designated as a long-term opportunity area that will eventually be reclaimed for Sage-grouse habitat.

Conclusion

Very little oil and gas development coincides with Utah's SGMAs. Ninety-eight percent of the acreage within Utah's SGMAs, or 7.29 million acres, does not correspond with oil and gas fields/units. Utah's plan utilizes the "avoid, minimize and mitigate" approach, which accounts for valid existing rights. This is consistent with the Conservation Objectives Team Final Report:

"If development must occur in Sage-grouse habitats due to existing rights and lack of reasonable alternative avoidance measures, the development should occur in the least suitable habitat for Sage-grouse and be designed to ensure at a minimum that there are no detectable declines in Sage-grouse population trends…"

While future development is foreseeable on only a small amount of acreage within the SGMAs, implementation of the Conservation Plan and the Governor's Executive Order will balance existing and possible future development (including valid pre-existing rights) with robust long-term conservation of Greater Sage-grouse. The Conservation Plan establishes provisions that aggressively meet the fundamental goal of protecting usable space for and ensuring long-term conservation of Greater Sage-grouse in the state of Utah.

UTAH CONSERVATION STRATEGIES *(CONT.)*

Low-density Development in Sage-grouse Management Areas

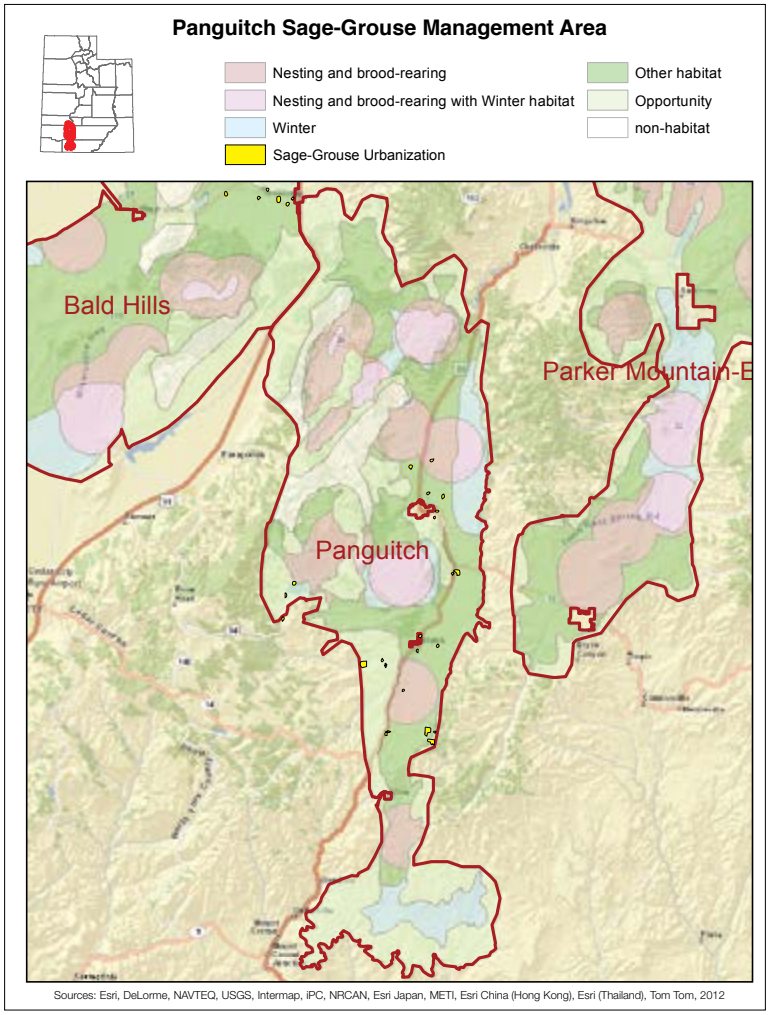


Figure 11 Low-density rural development is not a significant threat within core habitats of Utah's SGMAs.

Only three Sage-grouse Management Areas (SGMAs) in the state of Utah are projected to have more than 1,000 acres of new development by the year 2030. A detailed analysis of acreage projected to be developed within the state's SGMAs, illustrate that only the Rich-Morgan-Summit SGMA has more than 200 acres of expected conflict within nesting brood rearing habitats. What this means is that low-density development (sometimes referred to as exurban development) is not a threat to Sage-grouse populations in the state of Utah. Millions of dollars are available through state, private, and federal funding sources to protect the interests of private landowners, incentivize protection of lands that are important to rural communities, Sage-grouse populations, and to resolve development threats in areas of priority habitat. Localize impacts in the Rich-Morgan-Summit and other SGMAs will be addressed through processes explained in Utah's Plan.

URBANIZATION

Overview: *Only three Sage-Grouse Management Areas (SGMAs) in the state of Utah are projected to have more than 1,000 acres of new development by the year 2030. A detailed analysis of acreage projected to be developed in these SGMAs illustrates that only the Rich-Morgan-Summit SGMA has more than 200 acres of expected conflict with priority habitat. The conclusion is that urbanization is not a threat in the state of Utah. Localized impacts in Rich-Morgan-Summit will be ameliorated through Utah's Sage-Grouse Conservation Plan.*

Affected SGMAs: Rich-Morgan-Summit, Uintah and Panguitch.

Rich-Morgan-Summit

Total acres in SGMA	1,227,830 acres
Projected development by 2030	3,467 acres
New acres as % of total	0.026%
Nesting/brood rearing	1,213 acres
Winter habitat	2,254 acres
Northern - projected development	2,105 acres
Nesting/brood rearing	53%
Winter habitat	47%
Middle - projected development	97 acres
Southern - projected development	1,265 acres
Winter habitat	94%

Detailed Assessment: The estimated residential and commercial development is approximately one quarter of one percent on 1.2 million acres in the Rich-Morgan-Summit SGMA. Urbanization is not a threat to long-term survival of Sage-grouse populations in Rich-Morgan-Summit SGMA. Localized conflicts exist on both the northern end and southern end of the SGMA. Development on the northern end is projected to occur around existing development adjacent to Bear Lake and in the Bear River Valley near Randolph and Woodruff. Development on the southern end is projected to occur near Wanship and Kamas.[1]

[1]Map Source: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/technical/dma/nri/?cid=nrcs141p2_034122

Projected Development to SGMA's

	Total SGMA Acres	Projected New Development
Bald Hills	527,665	997
Box Elder	1,519,567	977
Carbon	354,559	702
Hamlin Valley	341,087	0
Ibapah	98,229	16
Panguitch	605,444	1,704
Parker Mtn	1,084,276	361
Rich-Morgan	1,183,844	3,188
Sheeprock	609,781	166
Strawberry	322,040	147
Uintah	792,839	3,466
TOTAL	**7,439,331**	**11,725**

Figure 1 - Three SGMAs are projected to have more than 1,000 acres of new development by 2030. Actual acreage within priority habitat is much less than 10,000 acres.

Uintah

Total acres in SGMA: 811,835 acres
Projected development by 2030: 3,466 acres
New Acres as % of total: 0.43%
Nesting/brood rearing: 0 acres
Winter habitat: 0 acres

Detailed Assessment: Urbanization is not a threat to long-term survival of Sage-grouse populations in Uintah County. Additional analysis suggest there is no projected residential and commercial development in critical habitat. Most development in the county is projected near existing development which is outside of the Uintah SGMA.[2]

Panguitch

Total acres in SGMA: 645,557 acres
Projected development by 2030: 1,704 acres
New acres as % of total: 0.26%
Breeding/brood rearing: <200 acres
Winter habitat: 0 acres

Detailed Assessment: Urbanization is not a threat to long-term survival of Sage-grouse populations in Panguitch SGMA. Less than 200 acres of development coincides with critical habitat.[3]

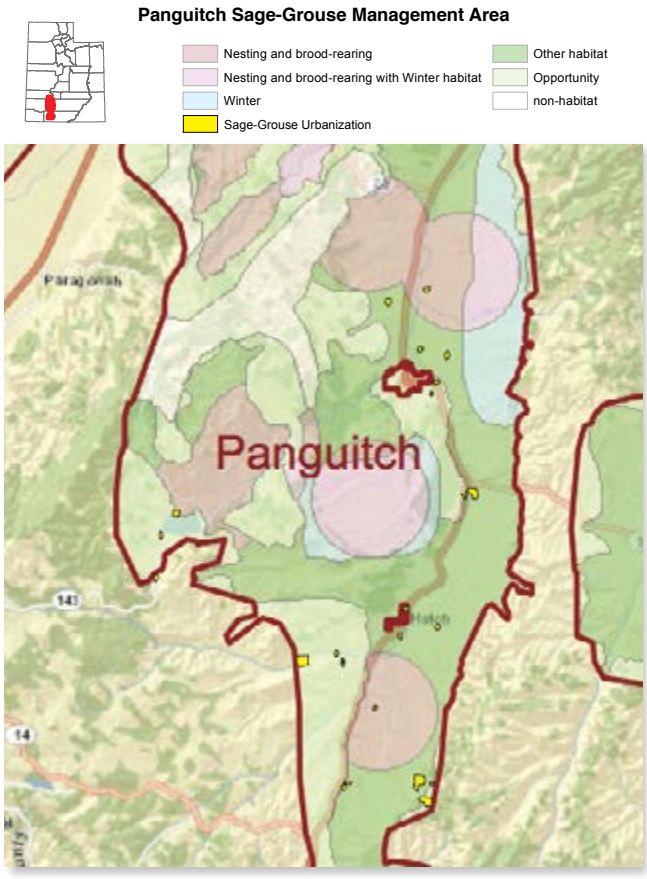


Figure 2 - Development in Panguitch SGMA is projected to occur primarily outside of wintering, nesting and brood rearing habitat.

[2]Map Source: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/technical/dma/nri/?cid=nrcs141p2_034122

[3]Map Source: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/technical/dma/nri/?cid=nrcs141p2_034122

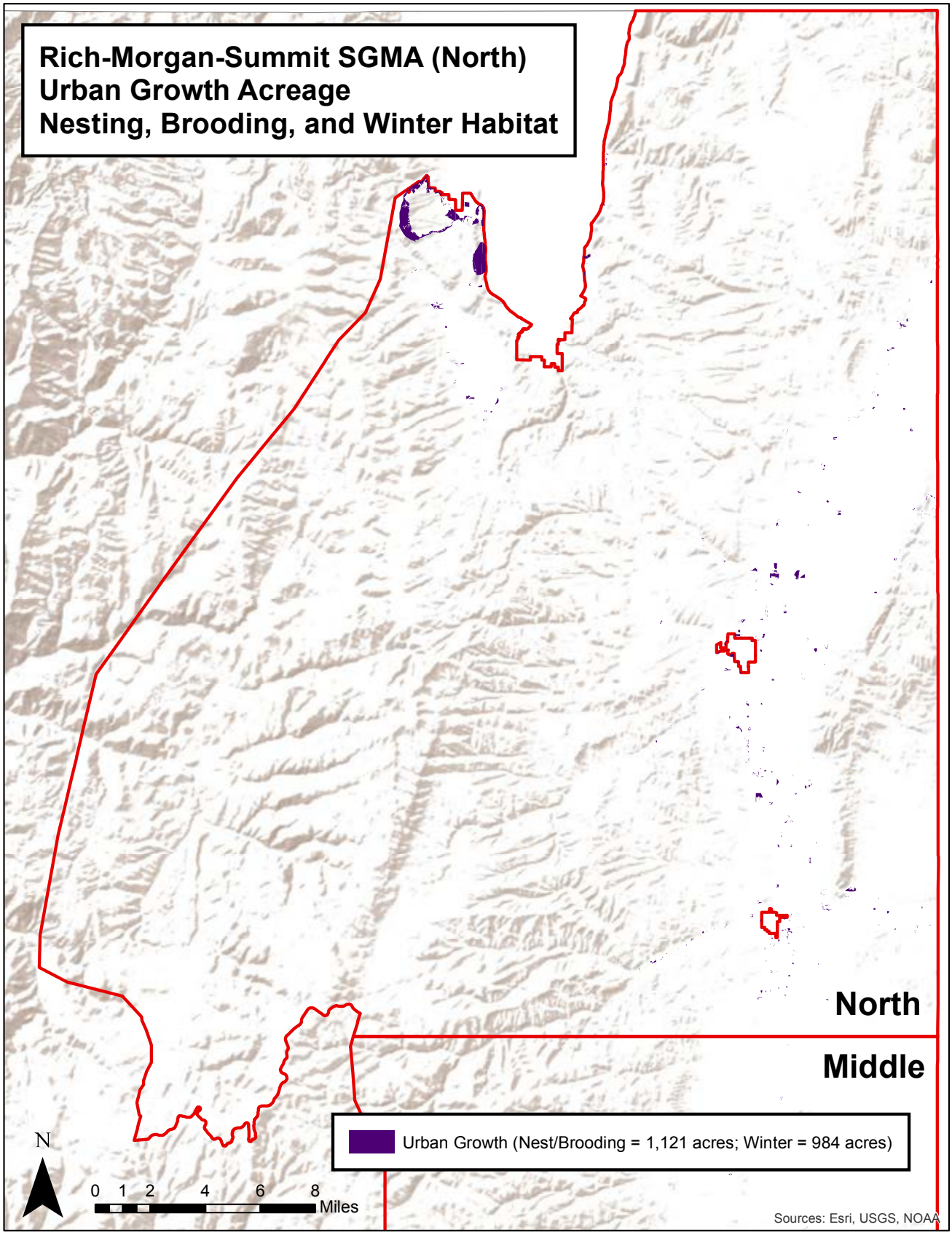

Rich-Morgan-Summit SGMA (North)
Urban Growth Acreage
Nesting, Brooding, and Winter Habitat
North
Middle
Urban Growth (Nest/Brooding = 1,121 acres; Winter = 984 acres)
N
0 1 2 4 6 8
Miles
Sources: Esri, USGS, NOAA

Figure 12. Sage-grouse biologists radio collar Utah Sage-grouse as part of intensive research studies in the state. Over 45 studies have been completed or are currently in progress to more effectively ensure success of Sage-grouse in the state.

Why Utah's Plan Was Not Given Full Consideration

Unfortunately, as we worked with federal regulators responsible for ESA determinations and federal planning, it became increasingly clear that Utah's Plan would not be given full consideration. This is because of U.S. Fish and Wildlife Service's Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE Policy). While Secretary Salazar promised to give full consideration to state conservation plans if the states would update their plans, these commitments were not kept. Under the Obama Administration's interpretation of the PECE Policy, consideration of updated state plans was not allowed, even when those changes were made at the encouragement of the Department of Interior and U.S. Fish and Wildlife Service. Here is the relevant language:

"While the [Endangered Species] Act requires us to take into account all conservation efforts being made to protect a species, the PECE policy identifies criteria we will use in determining whether formalized conservation efforts that have yet to be implemented or to show effectiveness contribute to making listing a species as threatened or endangered unnecessary."

In meetings with U.S. Fish and Wildlife Service, senior officials indicated that updated state conservation plans would be treated as "yet to be implemented" or "yet…to show effectiveness." Moreover, the high bar required for consideration under the Obama Administration's interpretation of the PECE policy meant that many updated management plans, including those in Utah, were not given full consideration. Instead, Obama Administration officials argued that revised BLM and Forest Service plans with extreme restrictions should be implemented. That is exactly what has happened. Unfortunately, these new restrictions do little to address the needs of Sage-grouse. Instead, they are focused on restricting human activity in ways that are largely unnecessary for Sage-grouse conservation while also ignoring the need for more balanced, common sense solutions.

EDUCATING MEMBERS OF CONGRESS

Key political and policy makers are keenly aware of what is happening with Greater Sage-grouse, including the Obama Administration's rewriting of federal resource management plans and activities on Sage-grouse habitat in the West. The Greater Sage-grouse Coordinated Consulting Team is working with Utah's congressional delegation and educating other members of Congress on key issues related to Greater Sage-grouse and the Endangered Species Act. By threatening a judicial listing of Greater Sage-grouse if the new BLM and U.S. Forest Service plans are altered, truly the only relief for Utah and other Western States is congressional action.

PROGRESS & RESULTS

We have met with members of Congress from Sage-grouse states and across the country. We have conducted tours of Sage-grouse habitat with senior staff, Sage-grouse and rangeland biologists, and state policy makers. These tours provided an opportunity to discuss implementation of on-the-ground conservation measures in the state of Utah.

We continue to find that there is significant bi-partisan support both in Western states and in Congress for solutions that protect balanced use of natural resources in ways that are consistent with policies and management strategies that work for long-term success of Greater Sage-grouse.

State Management is Working for Sage-grouse Conservation

One of the most important things to understand is that there is no emergency when it comes to Sage-grouse. This has been an important part of our message to Congress. There are approximately 500,000 birds with seasonal habitats covering 167,000,000 acres. With current Sage-grouse numbers and distributions, no one is suggesting that Greater Sage-grouse are imperiled. Instead, petitions to list the bird as "threatened" have focused on the adequacy of regulatory mechanisms to address perceived threats that activists suggest could lead to the decline of Sage-grouse in the future.

Greater Sage-grouse seasonal habitats cover a huge swath of land including portions of 11 Western States. State management plans for Sage-grouse have demonstrated a proven track record of success. Despite natural fluctuations in Sage-grouse populations from year to year, 10-year rolling averages for Sage-grouse have been stable or increasing for most Sage-grouse populations in most states for the past two decades.

From 2014-2015, Sage-grouse populations increased 68% range-wide. This has largely refuted one proposed theory that the stability of Sage-grouse "was actually a sign of decline." This was a theory that showed up in the 2010 "warranted but precluded" rule by the U.S. Fish and Wildlife Service during the Obama administration. The theory attempted to suggest that despite the relative abundance of Sage-grouse and Sage-grouse habitat over the past 20 years, this long-period of population stability would likely be followed by a consistent cycle of decreasing bird populations. Contrary to this supposition, the period of stability was followed by a robust upward population growth cycle in which bird populations increased 68% range-wide in just two years. This not only put these fears to rest, but demonstrated that state conservation plans were more than adequate to ensure long-term Sage-grouse stability and survival of Greater Sage-grouse across a substantial portion of the range.

Western States remain committed to common-sense Sage-grouse conservation. Approximately $750,000,000 has been invested in Sage-grouse habitat restoration and improvement in the last 20 years across the western United States. These efforts are proactive, forward thinking, and are producing significant results for Sage-grouse populations by improving the quality of Sage-grouse habitat. These conservation efforts have produced over one million acres of habitat restoration for Sage-grouse, mule deer, pronghorn, and other wildlife species. This investment is also addressing serious concerns, such as pinyon/juniper encroachment, catastrophic wildlfire, and productivity of public lands in Utah and across the West.

Sage-grouse Bill Introduced in 2015

On March 15, 2016, Congressman Rob Bishop introduced H.R. 4739 "The Greater Sage Grouse Protection and Recovery Act". The bill protects state conservation efforts for Greater Sage-grouse and provides a judicial safe-habor to ensure those conservation plans can be implemented for a period of 10-years.

The bill was cosponsored by members of Congress who represent districts which hold approximately 95% of America's Sage-grouse including, Cynthia Lummis-Wyoming, Michael Simpson-Idaho, Raul Labrador-Idaho, Ryan Zinke-Montana, Greg Walden-Oregon, Rob Bishop-Utah, Mark Amodei-Nevada, Cresent Hardy-Nevada, Joseph Heck-Nevada, Doug Lamborn-Colorado, Cathy McMorris Rodgers-Washington State, Kevin Cramer-North Dakota, and Paul Cook-California.

The provisions of H.R. 4739 have been included in the National Defense Authorization Act. Similar provisions were included in last year's National Defense Authorization Act which passed the House of Representatives.

Sage-grouse and the National Defense Authorization Act

On April 13, 2015, House Armed Services Committee Chairman Mac Thornberry introduced H.R. 1735, the National Defense Authorization Act (the National Defense Authorization Act or "NDAA"). Contained in the Chairman's mark-up was language sponsored by Congressman Rob Bishop (R-UT 1st District) related to Greater Sage-grouse. The provisions, which comprise Section 2862 of the NDAA, provide a 10-year extension of the deadline for making an Endangered Species listing determination for Greater Sage-grouse. This extension was designed to allow state management plans time to work and demonstrate their efficacy. The provisions also provide an optional 5-year extension of time on Sage-grouse management plans for the Bureau of Land Management within a state, if requested by the governor of that state. The bill does not change the current legal status of the bird from "warranted but precluded." Amongst other provisions, the bill also would require an annual report to Congress on the conservation status of Sage-grouse throughout their range.

A copy of the language of the Sage-grouse provisions in Section 2862 of the National Defense Authorization Act is provided in Exhibit D.

Figure 13. Utah's congressional delegation has been very active in protecting state management of Sage-grouse through Congressional action.

Figure 14. Approximately 50% of Air Force training flights in the Continental United States are conducted in western test and training ranges impacted by Sage-grouse. Additionally, the test and training ranges in the western United States provide capabilities that cannot currently be replicated anywhere else in the world.

Committee Vote

On April 29th, 2015, mark-up was held on H.R. 1735 in the Full House Armed Services Committee. As part of the mark-up, Representative Niki Tsongas (D-MA Third District) offered an amendment to strip Section 2862 from the National Defense Authorization Act (NDAA). The amendment failed with a strong, bipartisan vote of 26-36. The House Armed Services Committee voted on final passage with a vote of 60-2, clearly demonstrating the strong level of support for the NDAA containing the Rob Bishop Language.

House Vote

After its passage in committee, NDAA was sent to the Full U.S. House of Representatives for consideration. On May 15, 2015, the bill was passed by a vote of 269-151, once again demonstrating a strong level of support for the bill in Congress. All four members of Utah's congressional delegation in the U.S. House of Representatives voted in favor of the NDAA and have been active in their efforts to ensure continued inclusion of Section 2862 in the NDAA.

Here are several quotes from members of Congress on the Committee illustrating their attention to efforts to force more federal mandates relative to Greater Sage-grouse and the importance of ongoing state management of the species:

Rob Bishop - Utah

"More than 40 years ago, the Endangered Species Act was enacted with good intentions and bipartisan support to recover species at the brink of extinction. Unfortunately, with less than two percent of the more than 1,500 listed species ever recovered, the law is failing.

"Cramming thousands more species onto the list and blocking the use of millions of acres of land—including restricting even how our military servicemen can use lands for military training and readiness – cannot be a measurement of success. States are using resources wisely to recover species and keep them off the list. We should do more to encourage them,"

Cynthia Lummis - Wyoming

"Because these 11 states are so different, a cookie cutter approach will not work. Each state is unique. Their ecology, their economies, their culture, their Sage-groused habitat, and the reasons for Sage-grouse decline are very different."

Ryan Zinke - Montana

"Nowhere do I see what a healthy population is in Montana. When I don't know what a target number is, when the plan doesn't have anything constructive other than habitat, when it doesn't address wildfire, when it doesn't address predators, and yet the locals have expressed a considerable desire to save the species in a constructive manner that looks at predators, that looks at wildfires, looks at weather."

Cresent Hardy - Nevada

"I've watched and grew up in Nevada my whole life and I've watched what has happened throughout the state with the growth of the juniper and the lack, or mismanagement, of what I call the federal government and what they are doing."

Scott Tipton - Colorado

"They don't have an identifiable number [the Department of Interior for the recovery of the Sage-grouse]. Wouldn't it be a good idea, if we are actually going to have recovery, to be able to have a number that we know when we win?"

Dan Newhouse - Washington

"I live in central Washington. In my district, we have the Yakima training center, which is a 327,000 acre training site for our military. Of that, there are 77,000 acres that are currently designated Sage-grouse protection area. The army has already taken various steps and spent a lot of money to operate in a manner that minimizes the impact on the species. Things like seasonal management and habitat protection. If the ESA, under a listing would further impact and really take a lot of the training center out of being operable, and very severely limit its ability to carry out its mission."

Doug LaMalfa - California

"When we have these listings, who knows, by the time they are done implementing the plan, people can do less in the area to manage the timber, to manage the land, to do things that would dovetail well with the species and its recovery, it will just be off limits, the whole forest will burn. In the case we are talking about here, more juniper will grow because we are afraid we might disturb a nesting grouse, instead of doing things that are going to improve it. It is a big frustration."

Figure 15. Kathleen Clark from the Utah Public Lands Policy Coordination Office testifies at the U.S. House Natural Resource Committee hearing May 19, 2015.

U.S. House Committee on Natural Resources

On Tuesday, May 19, 2015, the U.S. House Committee on Natural Resources held a hearing in Washington D.C. entitled, "Empowering State Management of Greater Sage-grouse." Chairman Rob Bishop conducted the hearing with many members of the committee speaking in favor of state management of Sage-grouse.

Kathleen Clark from the Utah Public Lands Policy Coordinating Office spoke at the hearing, as did representatives from other impacted Sage-grouse states. The following is a portion from Ms. Clark's testimony:

I find myself in an interesting position. As a former Director of the Bureau of Land Management, I have extensive insight into operations of a federal regulatory and land management agency. I respect the role of the federal government in management of lands and natural resources and oversaw BLM's development and implementation of a rigorous range-wide Sage-grouse conservation strategy which helped to support a "non- warranted" listing determination for the Greater Sage-grouse (GRSG) in 2006.

As the current director of the Public Lands Policy Coordinating Office for the State of Utah (PLPCO), I oversaw a year-long review of Sage-grouse in Utah, and the subsequent development of a bold, science-based conservation plan, including clearly identified goals and objectives recognized as innovative by observers of the process. Based upon that work and the subsequent efforts to find common ground with the federal land management agencies, I can tell you that sadly, there is a dichotomy developing between the State of Utah's collaborative planning process and a growing federal unilateralism. What started out as a promising partnership is becoming increasingly imbalanced and adversarial.

Let me be clear, the State of Utah is committed to long-term Sage-grouse conservation. Over $50 million dollars has been invested in the last 10-years in Sage-grouse conservation in Utah. The State, in a close partnership with federal agencies, has restored

over 560,000 acres of Sage-grouse habitat since 2006, which work was funded and undertaken after the U.S. Fish and Wildlife Service determined the species was "not warranted" for listing. Research and groundwork have been the hallmark of Sage-grouse conservation. The State has engaged in an aggressive research program through our universities to scientifically determine the conservation needs of the species. We have improved habitat and engaged in land management studies involving habitat improvement and restoration, predator control and population augmentation. Results have been stunning, and directly contradict the recent gloom and doom predictions concerning the Sage-grouse…

The State of Utah supports the efforts of Congress to allow the states the opportunity to demonstrate the robust nature of their plans, and demonstrate the required level of certainty required by the Service's PECE standards. The 10-year time frame mentioned in legislation is firmly based in the science of Sage-grouse in Utah, and is recognized in peer-reviewed scientific papers. We believe that congressional action is likely the only way to ensure the states have the necessary time to demonstrate effective conservation efforts and to secure the long-term sustainability of the GRSG.

Dustin Miller, the Idaho Director of Species Conservation, also testified. The following is a portion of Mr. Miller's testimony:

The State of Idaho holds to the notion that local collaboration, local ideas, and local efforts garner the greatest results. We have a lot of pride in our state, and we are especially proud of our western heritage and abundant natural resources…but as you've heard, some of the recent top-down directives from Washington, D.C. have the potential to derail years of positive collaboration.

Committee members from the Sage-grouse states of Utah, Nevada, Montana, Wyoming, Colorado, California, and Washington were strongly supportive of efforts to protect state management of Sage-grouse.

In anticipation of conference efforts to harmonize the House and Senate versions of the bill, a "Dear Colleague" letter was sent to the leaders of House and Senate Armed Services Committees regarding Greater Sage-grouse and section 2865. The letter reads in part:

> *We are writing in strong support for retention of Sections 2862 and 2865 contained in the House-passed National Defense Authorization Act for Fiscal Year 2016 (H.R. 1735) dealing with Protection and Recovery of Greater Sage-grouse and the Lesser Prairie Chicken. These sections were adopted with strong bi-partisan support in the House of Representatives…It is entirely appropriate that these issues be addressed within the context of the National Defense Authorization Conference Report…We believe that Sections 2862 and 2865 represent a balanced approach to both conservation and preservation of the species, by allowing time for the affected states to implement and demonstrate their individual plans.*

107 members of Congress signed the Dear Colleague letter. It was finalized July 9, 2015 and sent to leaders of the House and Senate Armed Services Committee. A full copy of the letter is included in Exhibit E.

Federal Government Agrees that Sage-grouse are not Threatened or Endangered

In 2015, the U.S. Fish and Wildlife Service agreed that Sage-grouse were "not warranted" for listing under the Endangered Species Act, either as a threatened or endangered species. This followed months of efforts by the Greater Sage-grouse Coordinated Consulting Team and the State of Utah to educate federal decision makers on the conservation needs of Sage-grouse populations in Utah and the way in which state programs are addressing those needs.

In making this announcement, Secretary Sally Jewell indicated:

> *This is truly a historic effort – one that represents extraordinary collaboration across the American West… The epic conservation effort will benefit westerners and hundreds of species that call this iconic landscape home, while giving states, businesses and communities the certainty they need to plan for sustainable economic development.*

U.S. Agriculture Secretary Tom Vilsack explained the importance of voluntary conservation efforts to the future of Greater Sage-grouse:

> *Together, we have shown that voluntary efforts joining the resources of private landowners, federal and state agencies, and partner organizations can help drive landscape-level conservation that is good for Sage-grouse, ranching operations, and rural communities. Through the comprehensive initiatives on both public and private lands, the partnership has made and will continue to make monumental strides in supporting the people and wildlife that depend on the sagebrush landscape.*

A full copy of the "Not Warranted" press release can be found at https://www.doi.gov/pressreleases/historic-conservation-campaign-protects-greater-Sage-grouse.

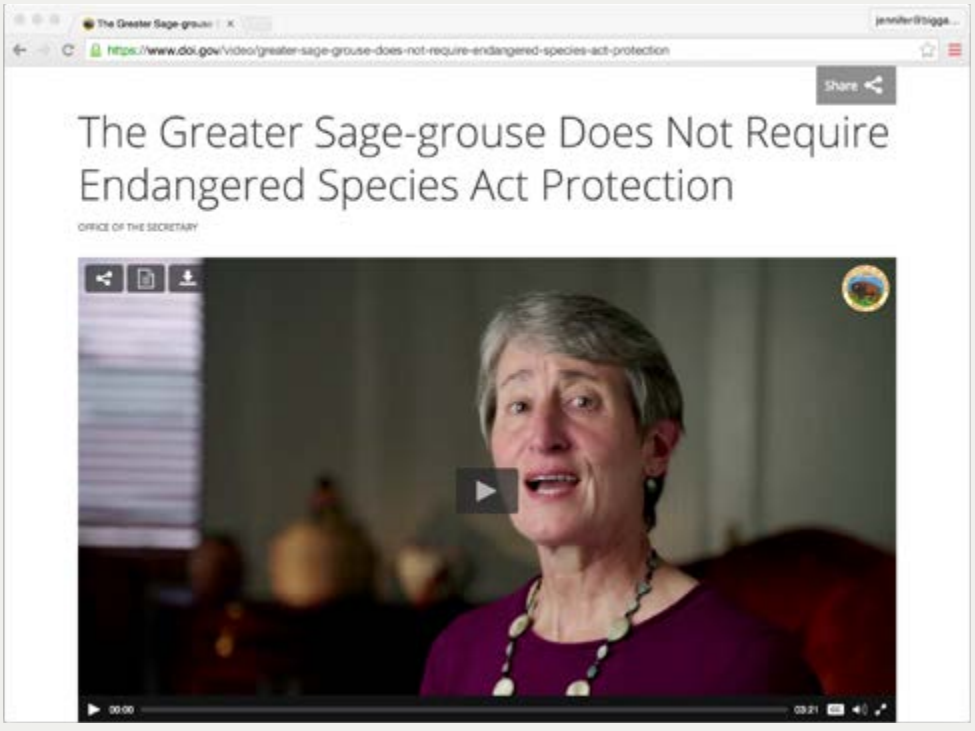
"Concerns regarding mismanagement of federal lands and impacts to Sage-grouse conservation remain a major concern."

Concluding that Greater Sage-grouse remain relatively abundant and well-distributed across the species' 173-million acre range, U.S. Fish and Wildlife Service explained that using the best available scientific information and taking into account ongoing key conservation efforts and their projected benefits, the bird does not face the risk of extinction now or in the foreseeable future, and therefore does not need protection under the ESA.

The decision not to list Greater Sage-grouse is a significant development. As recently as 2010, the U.S. Fish and Wildlife Service had made the determination that the species was warranted for listing, but that listing was precluded by higher conservation priorities under clause (iii) of section 4(b)(3)(B) of the Endangered Species Act of 1973 (16 U.S.C 1533(b)(3)(B). In the months leading up to the "not waranted" determination, federal officials had repeatedly suggested that a finding of "threatened" with a "4D" determination would provide states the management flexibility they required.

States pushed back, indicating that the Greater Sage-grouse numbers and distribution indicated that Sage-grouse were not at risk of extinction. Furthermore, they pointed out that state management plans were the best way to conserve the species, both now and in the future. The best available science and commercial data set forth in Utah's detailed conservation strategies demonstrate that conservation planning and implementation continues to move forward in a proactive and constructive manner.

It is important to note that the concerns regarding mismanagement of federal lands and impacts to Sage-grouse conservation remain a major concern. The data demonstrates that the most important conservation concerns for Sage-grouse in the state of Utah including wildfire, conifer encroachment and post-wildfire effects, are disproportionately occurring on federally managed BLM and Forest Service lands. Utah's Watershed Restoration Initiative has treated hundreds of thousands of acres in the state, including on federal land. However, continued progress in addressing these concerns will require the substantial progress in the coordination and implementation of conservation measures by federal land management agencies.



On September 22, 2015, DOI Secretary Jewell made the online announcement that "Because of an unprecedented effort by dozens of partners across 11 western states...the Greater Sage-grouse does not require protection under the Endangered Species Act."

While the decision not to list the Greater Sage-grouse as an endangered or threatened species represents significant progress, considerable risks remain due to controversial new BLM and Forest Service Management plans. Litigation by special interest groups also threatens state management of Sage-grouse.

New BLM & Forest Service Land-Use Plans

Controversial land use plans mean more restrictions on millions of acres in the state of Utah and across the West. Proposed "Sage-grouse focal areas" emphasize regulation and mineral withdrawal, not conservation of Sage-grouse. Leaders from western states condemn new restrictions as more bad news for public land states.

As a part of this process, substantial pressure was brought by the U.S. Fish and Wildlife Service on the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) to implement new land use plans through the amendment process. These new BLM and USFS plans implement substantial new regulations on federal lands within Utah. In fact, many of Utah's elected officials have issued very direct warnings about the impact of these new plans on economic activity and the ability of Utahns to use public lands in the state.

What is notable is that these new plan restrictions substantially miss the mark from a conservation perspective. In their almost unilateral focus on human activity, they fail to address the most important conservation concerns on our public land. Just as importantly, they threaten to undermine the important collaboration that is needed for Sage-grouse conservation. Leading many to conclude that these plan amendments were not really about Sage-grouse conservation, but instead were intended to stop productive use of our public lands.

Independent research by the University of Utah's Bureau of Economic and Business Research dated July 2015 and entitled, "Valuation of Current Economic Activities in Greater Sage-grouse Range in Utah" indicates that over $5 billion in current economic activity occurs on current and historic Sage-grouse range in the state of Utah. The report found an additional $10.9 billion in agricultural and non-primary residential property values which may be contained in Utah's historic only and current Sage-grouse range. In addition, over 57 billion barrels of potentially available economic oil from oil shale is also located in historic and current range within the state of Utah.

In contrast with heavy-handed federal regulation, Utah's common-sense SGMA strategy protects habitats for 94% of Sage-grouse (highest percentage of any western state) while also providing minimal impacts on economic activities in these areas. For example, while there are estimated to be over 57 billion barrels of potentially available economic oil from oil shale located in historic and current range within the state of Utah, only an estimated 0.2 billion barrels of economic oil from oil shale are located within the state's SGMAs. Under new federal restrictions, all activities both in Utah's SGMAs and in areas outside of Utah's SGMAs could be severely restricted. This is one of the reasons why Congressional action on Sage-grouse is so important to protect the interests of the state of Utah from these unnecessary and sweeping federal land use controls.

"These federal land use plan amendments are unnecessarily restrictive."

Instruction Memorandum Restricts Mineral Development and Sage Grouse Conservation

As if the federal land use plan amendments were not bad enough, the Greater Sage-grouse Coordinated Consulting Team obtained an instructional memorandum from Obama Administration Officials which will further restrict oil and gas development on the tens of millions of acres managed by the BLM and U.S. Forest Service in the name of Sage-grouse. The Instructional Memorandum, 2016-143, dated September 1, 2016 (the "IM") gave broad authority for local officials to prohibit drilling on Sage-grouse habitat under a new "priority system."

The IM acknowledges that while the BLM lands "which are known or believed to contain oil and gas deposits may be leased by the secretary" the new BLM plans now "prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs." In fact the instructional memorandum indicates that:

> *All new leases issued under the GRSG land use plans will have the stipulation for no surface occupancy (NSO) in PHMA (except WY)…*

It is important to point out that the Internal Memorandum is not a categorical exclusion on leasing within Sage-grouse habitat. Rather, it establishes a priority-based system intended to ensure consideration of drilling outside of Sage-grouse habitat over drilling inside of Sage-grouse habitat.

In practice, the impact could be much the same as a de facto ban on oil and gas development in key oil and gas reserves across the state of Utah.

The IM goes one step further. The memorandum gives managers authority: (1) not to issue leases that have already been sold; and (2) to even suspend leases that are already under operation. This directly contradicts Secretary Jewel's claim that the new BLM management plans would provide economic certainty for local communities.

How significant are these restrictions? The restriction of "No Surface Occupancy" in priority habitat areas affects millions of acres of priority Sage-grouse habitat in the Utah. It affects both federal land with Utah's priority habitat and also applies to the private and state lands with an underlying federal mineral estate. See Exhibit A to read the full memorandum.

Utah's Common Sense Approach

Utah's conservation plan prioritizes conservation of Sage-grouse in areas where they can be most successful. It also implements tens of millions of dollars in on-the-ground conservation efforts in support of those efforts. The resources needed to implement those conservation efforts depend on revenue from a variety of sources, including revenue from energy development. The concern that has been expressed repeatedly by state officials is that restricting oil and gas drilling in areas of general habitat has the impact of limiting the resources needed for meaningful Sage-grouse conservation in the state of Utah.

For example, conservation efforts within the state of Utah restored Sage-grouse populations in the Parker Mountain SGMA from approximately 125 males to 1,250 males (counted on leks) in recent years. This ten fold increase in local Sage-grouse populations were possible because: (1) the state's conservation plan recognized the potential for population growth in Parker Mountain; (2) state programs were in place to implement pinyon/juniper removal and other conservation measures to increase Sage-grouse habitat; and (3) funding was available to implement the conservation measures in the right areas. This is one reason why restricting oil and gas development on general habitat not only threatens economic activity, jobs, and local communities, but also important state conservation programs that are restoring Sage-grouse populations in Utah.

"I have always believed that . . . Utah is better positioned to manage our Sage-grouse populations than the federal government."

Many of Utah's elected officials have issued very direct warnings about the impact of these new plans on economic activity and the public land use in Utah.

Governor Gary Herbert (R-UT)
"I am deeply concerned with the decisions of the Departments of Interior and Agriculture which constitute a significant overreach by the federal government on this issue. The state of Utah has implemented a successful Sage-grouse conservation plan that has been rejected by the federal government, jeopardizing conservation of the species and reasonable economic growth in Utah.

"Today's actions constitute the equivalent of a listing decision outside the normal process and fail to support an appropriate balance between conservation and other public uses of the land. The state is not satisfied with the Records of Decision on land use plan amendments as issued by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS). Their one-size-fits-all approach does not reflect the tremendous diversity in greater Sage-grouse habitats across the West. These federal land use plan amendments are unnecessarily restrictive in nature and devalue Utah's management plan and the conservation commitments from private landowners.

Governor Gary Herbert (R-UT)

Congressman Chris Stewart (R-UT)

"I have always believed that, as a state, Utah is better positioned to manage our Sage-grouse population than the federal government. Utah has in fact adopted a strong conservation plan designed to protect, enhance and restore Sage-grouse habitats throughout the state. This effort by Utah has resulted in the restoration of more than 500,000 acres of Sage-grouse habitat and a significant growth in Sage-grouse populations. We will continue to work with the Departments of Interior and Agriculture to accept the State of Utah's conservation plan. We will also pursue legislative and potential judicial relief to protect the state's interests and ensure conservation of the species."

Congressman Chris Stewart (R-UT)
"While the Interior Department's decision not to list the sage grouse is a small step in the right direction, I remain fearful that the Federal land use plans will be just as onerous as an ESA listing. I am fully confident that states are more motivated and better suited than the federal government to maintain healthy sage grouse populations. The fact that Fish and Wildlife has deemed a listing not necessary shows that the western states efforts at conservation have worked. The states have been successful at protecting the sage grouse while maintaining jobs and the economy, and the federal government should follow suit in their land management plans."

Congressman Rob Bishop (R-UT)

House Natural Resources Committee Chairman - Congressman Rob Bishop (R-UT)

"This announcement changes nothing. It was an act of fundamental dishonesty. The Sage Grouse problem is no better solved today than it was yesterday before this announcement. Despite the Administration's decision, as long as the BLM is able to impose its will on the state of Utah by changing its land management plans as if the bird were listed, defense readiness will suffer. Large tracts of military test and training ranges will be off limits if the Administration has its way. Language I included in NDAA is now more vital than ever. It allows state plans that protect the Sage Grouse to go into effect, and prohibits the BLM from gaining greater control over land than they already have. Using effective state plans rather than a federal lands plan is better for the state. Without this language the federal government will continue to abuse the states, shortchange the taxpayer and weaken the military."

"As long as the BLM is able to impose its will on the state of Utah by changing its land management plans as if the bird were listed, defense readiness will suffer."

--Congressman Rob Bishop

Congressman Scott Tipton (R-CO)

Congressman Scott Tipton (R-CO)
Colorado has been at the forefront of implementing locally-tailored sage grouse preservation efforts, and a federal ESA listing would have jeopardized those efforts. The work being done at the state, local and federal level, which includes voluntary conservation and species protection on the part of landowners and government, is having a positive impact. We have heard abundant testimony from scientific and conservation experts that these locally-tailored plans are far more effective for species preservation than a one-size-fits-all federal approach. Unfortunately, the 'not warranted' decision is expected to be accompanied by the signing of the final federal land use plan amendments, which will still jeopardize this local preservation approach. These amendments will severely restrict ranching, recreation and energy and minerals development, including a likely mineral withdrawal of between 9-10 million acres, all of which will be devastating to local economies. While the 'not warranted' decision is welcome, the implementation of equally oppressive land use plans, which do nothing to improve on the work already being done locally to preserve the grouse, still leaves Colorado and other Western communities in a worrisome situation.

"We have heard abundant testimony . . . that these locally-tailored plans are far more effective."

Senator Steve Daines (R-MT)
While it is good news that the sage grouse is not listed as an endangered species, I remain concerned that the Obama administration's land-use plans will have a harmful impact on Montana's economy, our land users and Montanans' way of life. The fact remains, sage grouse numbers have increased in the west by nearly two-thirds since 2013. Montana needs to continue take the lead on sage grouse conservation and I hope BLM can revise their plans to allow Montana to do so. Because a sage grouse can't tell the difference between federal, state and private lands, Montana should take the lead not a bunch of out of Washington, D.C. bureaucrats.

Senator Steve Daines (R-MT)

Governor C.L. Butch Otter (R-ID)
While I appreciate Secretary Jewell's public recognition of local and state efforts to preserve the species and its habitat, the question behind a 'not warranted' determination is: 'At what cost'? For months now, the federal government's initially transparent and collaborative process has been replaced by closed-door meetings and internal memoranda. That's resulted in a land management scheme for Sage-grouse habitat that remains a mystery to property owners and state and local wildlife advocates alike. The feds are asking us to trust them. It's not that simple and unfortunately this is far from over. I remain committed to do what's best for the species and people of Idaho.

> "For months now, the federal government's initially transparent and collaborative process has been replaced by closed-door meeting and internal memoranda."
>
> --Governor C.L. Butch Otter

Senator Mike Crapo (R-ID)
While a 'not warranted' decision is better than a listing determination under the Endangered Species Act, the Department of Interior's reliance on heavy-handed land-use management plans to arrive at this decision is unacceptable. The Department ignored much of what the Idaho Sage Grouse Task Force recommended and, instead, opted to move forward with top-down federal lands-use management plans. While the agency cited collaboration as the basis for its decision, the move to abandon the state's planning process that adequately addressed true threats to the bird--namely the impact of wildfires and invasive species on sagebrush habitat—will ultimately lead to greater uncertainty for sage grouse populations in the future.

Senator Jim Risch (R-ID)
While I am pleased Secretary Jewell has acknowledged the greater Sage-grouse population is on the rebound, I am concerned the regulations generated by the Department of the Interior to reach this decision will do little to continue the recent population rebound in Idaho. We had pressed DOI early on to rely on a locally-driven, collaborative process to conserve the Sage-grouse, but this process changed when it came to Washington, D.C. The two main threats to the greater Sage-grouse in Idaho are fire and invasive species. The Secretary adopts a plan that relies heavily on regulation of the mining, oil, and gas industries when it should focus more heavily on fire control. Today's announcement serves as political cover for another top-down mandate that will not be the best prescription for Sage-grouse in Idaho.

Congressman Mike Simpson (R-ID)
For years, state and federal partners have worked toward the not warranted listing that was issued today, and, given the impact that a listing decision would have on Idaho and the West, I am pleased with the Fish and Wildlife Service's determination. That being said, I recognize that this decision does not come without a price. There has been widespread concern about the impact of the federal land management plans, especially from the states, which felt their recommendations in this process were disregarded.

Idaho Congressional Delegation: Congressmen Raul Labrador (R-ID) and Mike Simpson (R-ID), Senators Jim Risch (R-ID) and Mike Crapo (R-ID)

Whether the price we pay for a not-warranted decision will be too high remains to be seen. In the meantime, I will continue working with both federal and state agencies to see that the real threats to Sage-grouse habitat, including wildfire, can be addressed.

Senator Dean Heller (R-NV)
This is not a win for Nevada. Even though the Fish and Wildlife Service has decided the greater Sage-grouse doesn't merit protections under the Endangered Species Act, the Department of the Interior's final 'federal plans' pose major threats to many Nevadans' long-term way of life and success.

This has been an issue of the Department of the Interior using the threat of a listing to get what it really wanted all along: limiting Nevadans' access to millions of acres of land equal to the size of the state of West Virginia. At the end of the day, Big Government continues to tighten its grip at the expense of rural America's future, especially in Nevada.

Rather than addressing the real threats to Sage-grouse habitat in our state - wildfire, the spread of invasive species, and wild horse and burro mismanagement – these new regulations simply restrict Nevadans' access to millions of acres of public lands. Nevadans hate to see the federal government further limit the use of their public lands. I will continue to fight these unnecessary restrictions and work with our Congressional delegation on policies that protect our environment, grow our economy, and support our western ways of life.

Senator Dean Heller (R-NV)

Broad-Based Congressional Support

Support in Congress acknowledges the need for more balanced common-sense protections afforded by state management plans. Efforts to exert draconian regulatory measures over non-endangered species by federal land regulators is a concerning new precedent.

For these and other reasons, Congressional interest has remained considerable in protecting the more proactive, balanced, and less restrictive plans of Western states. In fact, on November 5, 2015, 76 members of Congress from 35 states signed a "Dear Colleague Letter" in support of Congressional protections for state management of Sage-grouse.

The letter reads as follows:

> *We are writing to request that you include in any FY2016 spending measure language preventing the Interior Department from moving forward with the highly restrictive Resource Management Plan Amendments (RMPs) that are inconsistent with Greater Sage Grouse conservation planning at the state level.*

> *The U.S. Department of Interior recently announced that, while it would not consider listing the Greater Sage Grouse as threatened or endangered under the Endangered Species Act (ESA) for five years, it would instead move rapidly forward with RMPs which would result in land use restrictions on millions of acres of public lands. In many cases, the RMPs are as restrictive as a formal listing under the ESA.*
>
> *The Obama Administration's scheme to use the Sage Grouse as the excuse to institute restrictive RMPs to shut down virtually all development on large swaths of public lands in the West, particularly oil, gas, and mineral development, will have a devastative impact on state and local economies.*
>
> *The Administration's actions will have a negative impact on our nation's energy and natural resource independence. Furthermore, the Greater Sage Grouse is not truly endangered. Its population is greater today than it has been in recent years thanks to the concerted efforts of several States which have implemented at their own expense comprehensive Sage Grouse Recovery plans. One can purchase a hunting license for Sage Grouse in several states. With few exceptions, the RMP restrictions far exceed common-sense measures developed by states to more effectively balance conservation with the needs of their citizens.*
>
> *Environmental Groups have further indicated that they would challenge the Interior Department's 5-year listing deferral in federal court within the next few months. The potential for*

76 SIGNERS OF CONGRESSIONAL Sage-grouse LETTER

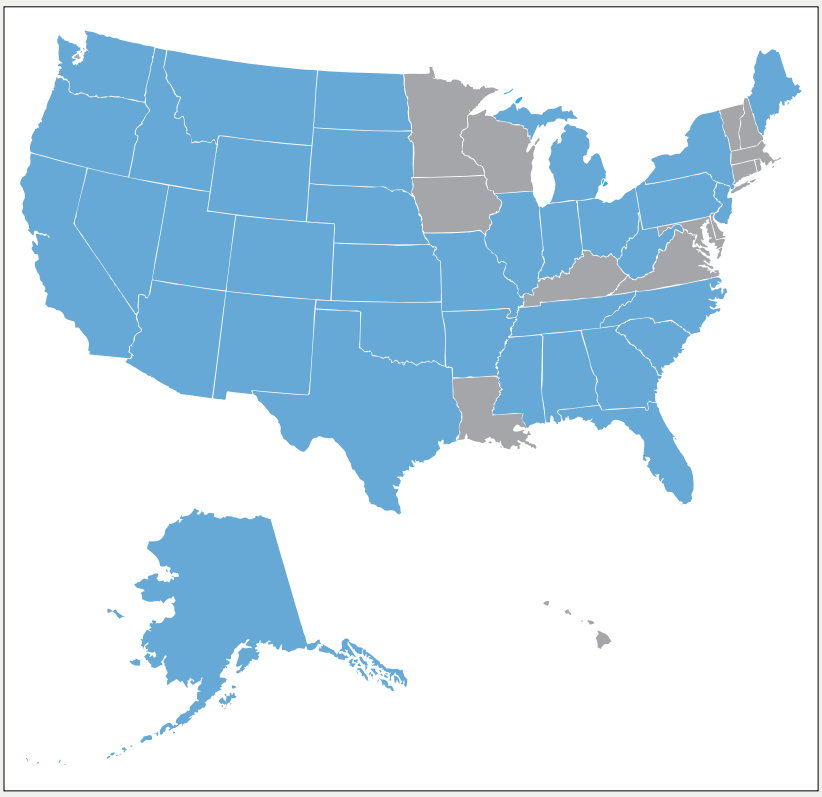


Figure 2. Seventy-six members of Congress from 35 states signed a "Dear Colleague" letter in support of congressional protections for state management of Greater Sage-grouse. Members included were:

Allen	Huizenga	Pompeo
Amodei	Hunter	Reed
Babin	Hurd	Renacci
Barletta	Jenkins, Evan	Rogers, Mike
Benishek	Kelly, Mike	Ross
Bishop, Mike	Labrador	Russell
Bishop, Rob	LaMalfa	Salmon
Brady, Kevin	Lamborn	Scott, Austin
Bridenstine	Latta	Sessions
Chaffetz	Loudermilk	Shimkus
Cole	Love	Shuster
Collins	Lucas	Smith, Adrian
Conaway	Luetkemeyer	Stewart
Cook	Lummis	Stivers
Cramer	MacArthur	Stutzman
Desjarlais	Marino	Thompson, Glenn
Duncan, Jeff	McClintock	Tipton
Finsher	McMorris, Rogers	Walden
Franks	Meadows	Weber
Gibbs	Miller	Webster
Gohmert	Noem	Wenstrup
Gosar	Palazzo	Williams
Hardy	Palmer	Woodall
Heck	Pearce	Young, Don
Hill	Poliquin	Zinke
Holding		

Sage Grouse critical habitat designations under an ESA listing would negatively impact military readiness and several large military installations and training areas in several western states.

In conclusion, we believe that any FY2016 spending bill should both prevent unnecessary RMP restrictions from being implemented, as well as prevent court ordered reopening of the Interior Department's ESA listing deferral.

This high level of congressional support was instrumental in support for a Sage-grouse rider in the year-end omnibus spending bill. The interest in inclusion of Sage-grouse compared to other proposed riders was described in quoting Congressman Mike Simpson (R) Idaho on the negotiations over the omnibus spending bill:

Another top appropriator -- Energy and Water Development Subcommittee Chairman Mike Simpson (R-Idaho) -- said he places a higher priority on a rider targeting Bureau of Land Management land-use plans for the sage grouse rather than the Waters of the U.S. rule -- a top priority for many Republicans and some Democrats.

"I'd drop the WOTUS and put in sage grouse," Simpson said, noting injunctions at the district court level have put a stay on the water rule.

"If they have sage grouse in there, I guarantee there's 60 Republicans from Western states that would fight their rear ends off to make sure this bill passes," Simpson said. "If it's not, maybe they're not too interested. I don't know."[1]

Sage-grouse Bill Introduced in 2017

On January 13, 2017, Congressman Rob Bishop introduced H.R. 527 the Greater Sage-grouse Protection and Recovery Act of 2017. A Senate version of the bill, S. 273 was filed on February 1st, 2017. Much like H.R. 4739, H.R. 527 and S. 273 enjoy significant support from members of Congress from Sage-grouse states.

The language of H.R. 527 is included on pages 105-106.

1 See E&E publishing article "Horse-trading, rumors persist with 5-day reprieve on tap" December 10, 2015

"This amendment balances conservation with national security… There are also multiple examples already of state plans which are effectively managing and conserving Sage-grouse populations. We need to give time for these state plans, orchestrated by folks closest to the land and to the issue at hand, to be fully implemented and to accomplish their goal of protecting this bird."

115TH CONGRESS

1ST SESSION

H. R. 527

To provide for the conservation and preservation of the Greater Sage Grouse by facilitating State recovery plans, and for other purposes.

_____

IN THE HOUSE OF REPRESENTATIVES

JANUARY 13, 2017

Mr. BISHOP of Utah (for himself, Mr. SIMPSON, Mr. AMODEI, Mr. GOSAR, Mr. STEWART, Mrs. LOVE, Mr. LABRADOR, Mr. CHAFFETZ, Mrs. MCMORRIS RODGERS, Mr. TIPTON, and Ms. CHENEY) introduced the following bill; which was referred to the Committee on Natural Resources

_____

A BILL

To provide for the conservation and preservation of the Greater Sage Grouse by facilitating State recovery plans, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Greater Sage Grouse Protection and Recovery Act of 2017".

SEC. 2. PROTECTION AND RECOVERY OF GREATER SAGE GROUSE.

(a) DEFINITIONS.—In this section:

(1) The term "Federal resource management plan" means—

(A) a land use plan prepared by the Bureau of Land Management for public lands pursuant to section 202 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712); or

(B) a land and resource management plan prepared by the Forest Service for National Forest System lands pursuant to section 6 of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1604).

(2) The term "Greater Sage Grouse" means a sage grouse of the species Centrocercus urophasianus.

(3) The term "State management plan" means a State-approved plan for the protection and recovery of the Greater Sage Grouse.

(b) PURPOSE.—The purpose of this section is—

(1) to facilitate implementation of State management plans over a period of multiple, consecutive sage grouse life cycles; and

(2) to demonstrate the efficacy of the State management plans for the protection and recovery of the Greater Sage Grouse.

(c) ENDANGERED SPECIES ACT OF 1973 FINDINGS.—

(1) DELAY REQUIRED.—During the period beginning on the date of the enactment of this Act and ending on September 30, 2027, the Secretary of the Interior may not alter or invalidate the finding made by United States Fish and Wildlife Service on October 2, 2015, under section 4(b)(3)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1533(b)(3)(B)) with respect to the Greater Sage Grouse (80 Fed. Reg. 59857 et seq.).

(2) EFFECT ON OTHER LAWS.—Paragraph (1) shall apply without regard to any other statute, regulation, court order, legal settlement, or any other provision of law or in equity.

(3) EFFECT ON CONSERVATION STATUS.—Until September 30, 2027, the conservation status of the Greater Sage Grouse under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) shall remain not warranted for listing under such Act.

(d) COORDINATION OF FEDERAL LAND MANAGEMENT AND STATE CONSERVATION AND MANAGEMENT PLANS.—

(1) PROHIBITION ON WITHDRAWALS AND MODIFICATION OF FEDERAL RESOURCE MANAGEMENT PLANS.—Effective upon notification by the Governor of a State with a State management plan, neither the Secretary of the Interior nor the Secretary of Agriculture may exercise authority under section 204 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1714) to make, modify, or extend any withdrawal of, nor amend, revise, or otherwise modify any Federal resource management plan applicable to, Federal lands in the State in a manner inconsistent with the State management plan for a period, to be specified by the Governor in the notification, of at least five years beginning on the date of the notification.

(2) RETROACTIVE EFFECT.—In the case of any State that provides notification under paragraph (1), if any amendment, revision, or modification of a Federal resource management plan applicable to Federal lands in the State was issued after June 1, 2014, and the amendment, revision, or modification altered management of the Greater Sage Grouse or its habitat, implementation and operation of the amendment, revision, or modification shall be stayed to the extent that the amendment, revision, or modification is inconsistent with the State management plan. The Federal resource management plan, as in effect immediately before the withdrawal, amendment, revision, or modification, shall apply instead with respect to management of the Greater Sage Grouse and its habitat, to the extent consistent with the State management plan.

(3) DETERMINATION OF INCONSISTENCY.—Any disagreement regarding whether an amendment, revision, or other modification of a Federal resource management plan is inconsistent with a State management plan shall be resolved by the Governor of the affected State.

(e) RELATION TO NATIONAL ENVIRONMENTAL POLICY ACT OF 1969.—With regard to any Federal action consistent with a State management plan, any findings, analyses, or conclusions regarding the Greater Sage Grouse or its habitat under the National Environmental Policy Act of 1969 (42 U.S.C. 4331 et seq.) shall not have a preclusive effect on the approval or implementation of the Federal action in that State.

(f) REPORTING REQUIREMENT.—Not later than one year after the date of the enactment of this Act and annually thereafter through 2027, the Secretary of the Interior and the Secretary of Agriculture shall jointly submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives a report on the Secretaries' implementation and effectiveness of systems to monitor the status of Greater Sage Grouse on Federal lands under their jurisdiction.

(g) JUDICIAL REVIEW.—Notwithstanding any other provision of statute or regulation, this section, including determinations made under this section, shall not be subject to judicial review.

On March 28, 2017, United States Senators from states which hold approximately 90% of America's Sage-grouse sent a letter to Senator Thad Cochran, Chairman of the Senate Appropriations Committee. The letter urged the inclusion of S. 273, the Greater Sage-grouse Protection and Recovery Act of 2017 in must pass appropriations legislation for fiscal year 2017. The letter states in part:

> *In September of 2015, the Obama Administration's Department of Interior announced it would not consider listing the Greater Sage Grouse as threatened or endangered under the Endangered Species Act (ESA) for a period of 5 years…Instead of offering regulatory relief, the Department of Interior announced new restrictions on millions of acres of public lands using Resource Management Plan (RMP) Amendments, which are in many cases are as restrictive as formal ESA listings. These new restrictions are unnecessary and do not address the real needs of Sage-grouse…Due to the threat of Endangered Species Act lawsuits, a 31-year history of petitions to list and repeated litigation, this issue can only be solved by Congressional Action.*

The full text of the March 28, 2017 letter is included on the following two pages.

United States Senate

WASHINGTON, DC 20510

March 28, 2017

The Honorable Thad Cochran
Chairman
Senate Committee on Appropriations
Washington, D.C. 20510

Dear Senator Cochran:

We write to request your support for S. 273, the Greater Sage-Grouse Protection and Recovery Act of 2017. Because this issue has enormous implications for Western states, we ask the inclusion of this language be a priority as you negotiate the legislative vehicle for funding the remainder of Fiscal Year 2017.

In September 2015, the Obama Administration's Department of the Interior announced it would not consider listing the Greater Sage Grouse as threatened or endangered under the Endangered Species Act (ESA) for a period of five years. This was the third listing decision on Greater Sage-grouse in just ten years. Instead of offering regulatory relief, the Department of Interior announced new restrictions on millions of acres of public lands using Resource Management Plan (RMP) Amendments, which are in many cases as restrictive as formal ESA listings. These new restrictions are unnecessary and do not address the real needs of Sage-grouse. Moreover, they maximize negative impacts on our nation's energy and natural resource independence.

Due to the threat of Endangered Species Act lawsuits, a 31-year history of petitions to list and repeated litigation, this issue can only be solved by Congressional action. The proposed language provides a ten-year window for state conservation plans to demonstrate their efficacy without being mired by unnecessary RMP restrictions or new litigation.

We have the utmost confidence in state conservation efforts. Each one of our states have spent millions of dollars on collaborative efforts to implement extensive on-the-ground conservation aimed at protection and recovery. These scientifically proven solutions have already demonstrated significant benefits for Sage-grouse, a species that is widespread geographically and includes approximately 500,000 animals. Thanks to these comprehensive, state developed recovery plans, Greater Sage-grouse populations are robust and growing.

The decades long effort by special interest groups to use the ESA to administer one-size-fits all land use policy on 165,000,000 acres of public land does a disservice to Sage-grouse and the citizens of Western states. Considering the number and distribution of Greater Sage-grouse and the Obama Administration's decision not to list the bird, it is

essential that regulatory and litigation relief be provided to western states. Congressional action is the best solution to protect the species and the rich tradition of state management of non-endangered wildlife.

We reiterate our request to make inclusion of the full legislative language in S. 273, the Greater Sage-Grouse Protection and Recovery Act of 2017, part of the final Fiscal Year 2017 spending package the highest priority. This is the best course of action for the Greater Sage-grouse as well as hard working Americans across the eleven impacted western states.

Thank you for your consideration of our request.

Sincerely,

James E. Risch
U.S. Senator

Orin Hatch
U.S. Senator

Mike Enzi
U.S. Senator

Dean Heller
U.S. Senator

Mike Crapo
U.S. Senator

Steve Daines
U.S. Senator

H.R. 527 and S. 273 provide important protections for state wildlife management of Greater Sage-grouse by:

1. *Ensuring that new state management plans are the primary mechanism for management of the species. This follows decades of precedent for non-endangered species.*
2. *Providing a 10-year period of time for state Sage-grouse management plans to demonstrate their efficacy.*
3. *Providing a litigation safe harbor during the 10-year period so plans can work without further interference from repeated lawsuits filed by anti-use groups.*

There have been three determinations not to list Greater Sage-grouse as an endangered species in the past 10 years. A fourth decision in just 15 years is not needed. Instead, providing a 10-year period of time for state conservation efforts to demonstrate their efficacy will provide the greatest conservation lift for the species. The bill also addresses repeated lawsuits by activists that are creating challenges to state management of Sage-grouse. This bill restores the original intent of the Endangered Species Act for non-listed species and provides a balanced approach to protecting state wildlife protections for Greater Sage-grouse.

Executive Order to review Federal Management Plans for Greater Sage-grouse

On June 8, 2017, Interior Secretary Ryan Zinke signed Secretarial Order 3353 to address serious concerns of Bureau of Land Management and Forest Service Record's of decision on the name of Sage-grouse. The secretarial order specifically orders a review of federal plans to ensure conservation plans are implemented in ways that do not impede local economic opportunities. The secretarial order establishes an internal review team that will evaluate both federal sage grouse plans and state plans and programs to ensure they are complementary and are consistent with local economic growth and job creation.

"While the federal government has a responsibility under the Endangered Species Act to responsibly manage wildlife, destroying local communities and levying onerous regulations on the public lands that they rely on is no way to be a good neighbor," said Secretary Zinke. "State agencies are at the forefront of efforts to maintain healthy fish and wildlife populations, and we need to make sure they are being heard on this issue. As we move forward with implementation of our strategy for Sage-grouse conservation, we want to make sure that we do so first and foremost in consultation with state and local governments, and in a manner that allows both wildlife and local economies to thrive."

The Secretarial Order is consistent with statements made by Secretary Zinke during his confirmation hearings that he understand each state has different needs and issues and is committed to working with them and local communities.

The secretarial order is a sign of progress in our efforts to protect Utah's plans for Sage-grouse conservation. It is also consistent with objectives of H.R. 527 and S. 273 which ensure federal plans are consistent with state management authority over non-endangered Sage-grouse. For the full Press Release from the U.S. Department of Interior visit: https://www.doi.gov/pressreleases/secretary-zinke-signs-order-improve-Sage-grouse-conservation-strengthen-communication.

ENGAGING THE PUBLIC IN THE PROCESS

Coordinated Consulting Team Outreach

During the past year we have learned that people not only want to know what is happening with Greater Sage-grouse, but also to understand how those decisions impact them.

ESA Listing and Control of Utah Working Landscapes

For the past decade, powerful special interest groups have been working tirelessly to replace state management authority of Greater Sage-grouse and their habitats with draconian federal regulation under the Endangered Species Act. Listing of Greater Sage-grouse would create a federal nexus on all 8+ million acres of Sage-grouse habitat in the state, allowing litigation by activist organizations on all land-use decisions whether the property is federally managed, state owned or private property. This would likely open the floodgates of litigation and further limit use of working landscapes in the State of Utah.

Utahns access to and decision-making authority with respect to working landscapes in the state, has dramatically declined in the last few decades. Legitimate questions are being raised about the staggering level of federal control over decisions that detrimentally impact the ability of Utahns to use, work and enjoy these lands. Listing of Greater Sage-grouse would substantially and likely permanently restrict access to and productivity of these landscapes.

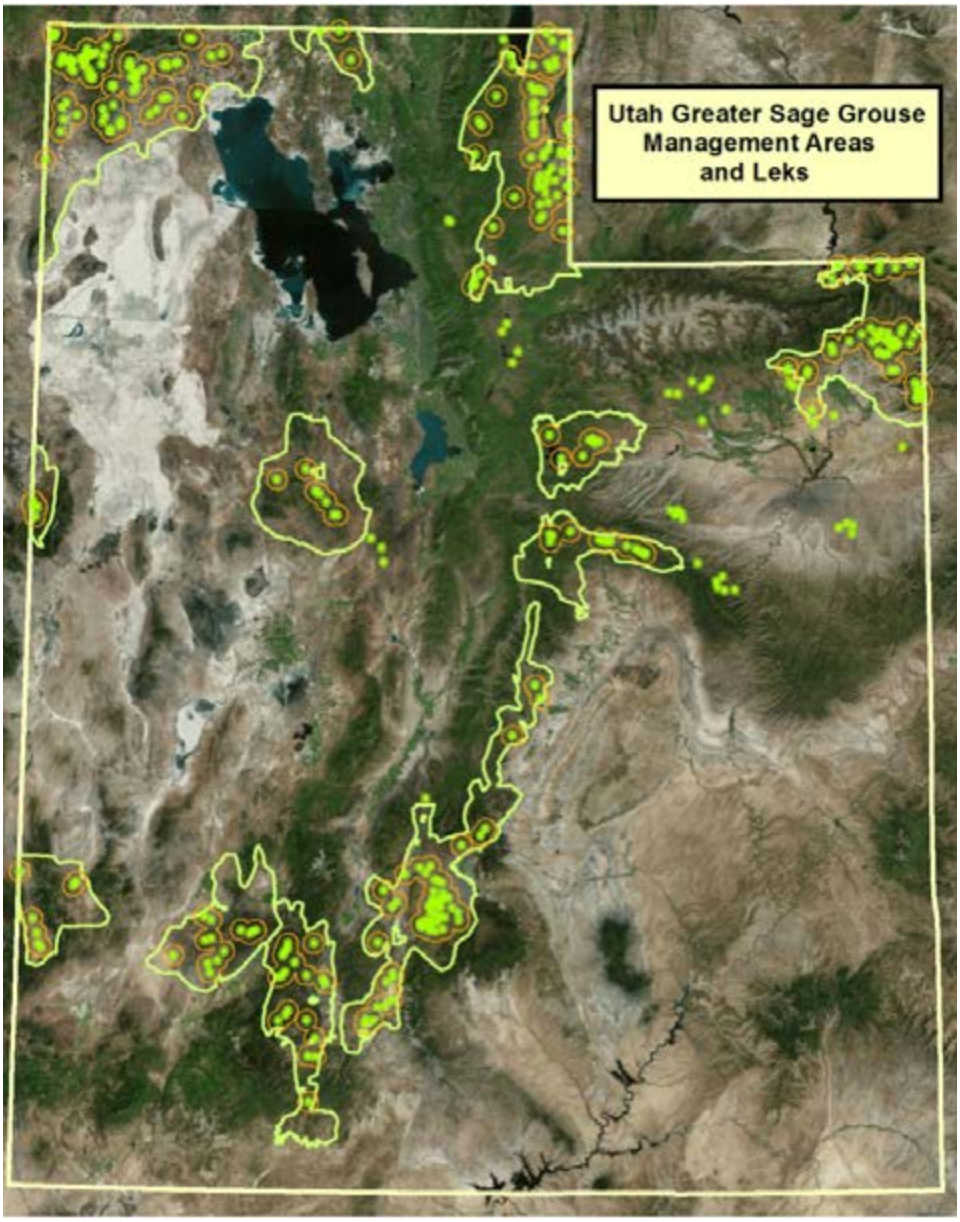


Figure 16. Sage-grouse are distributed across 8 million acres within the State of Utah. Most of the sagebrush habitat is desert shrub which is poor Sage-grouse habitat, accounting for the overall low population of Sage-grouse in the state.

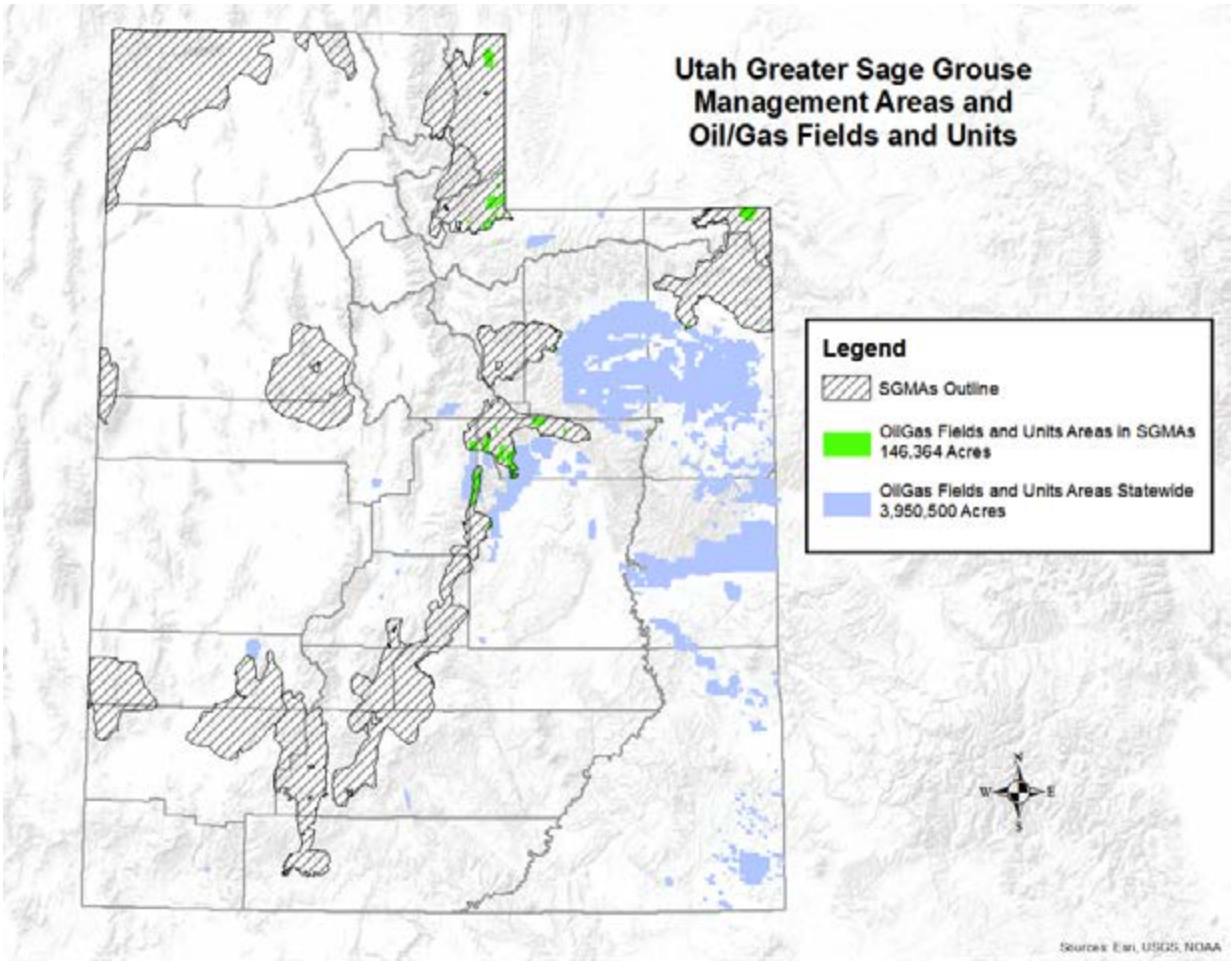


Figure 17. Protecting Sage-grouse within the state's SGMAs is possible while also allowing oil and gas development under state management authority. Federal listing of the species and additional federal restrictions in areas outside of the state's SGMAs could result in economic losses in the billions of dollars annually.

Economic Impact Analysis Illustrates importance of the issue to a healthy economy

As part of our efforts, we have worked with the Utah Public Lands Policy Coordination Office to more carefully quantify the potential impacts of a Sage-grouse listing, or additional restrictions through federal resource management plans. The Bureau of Economic stand Business Research at The University of Utah was commissioned to do a third-party independent assessment of economic activities within Sage-grouse habitats within the State of Utah (BEBR Report). The results of their analysis are insightful. These impacts threaten key components of Utah's economy including oil and gas, mineral development, outdoor recreation, education funding, livestock production and farming.

Here is a summary from the BEBR Report:

> *...a conservative estimate of activities in FWS current Sage-grouse range suggests they contribute 13,000 jobs with $831 million in earnings and $2.5 billion in gross state product (value added). Activities in historical-only range support 11,000 jobs with $723 million in earnings and $2.5 billion in GSP. Finally, activities in SGMAs support almost 5,000 jobs with $165 million in earnings and $339 million in GSP.*

By analyzing current, potential historic range and the state's SGMA's, the report clearly illustrates the substantial difference between state management focused within the state's Sage-grouse Management Areas and a federal model which could result in substantial restrictions in not only SGMAs, but also current and historic range:

> *The differences in values between SGMAs and those of the other two ranges is striking. As noted above and shown below, although oil and natural gas production from wells within SGMAs was once a major component of total production statewide, production within SGMAs has been in decline since the late 1980s (oil)/mid-1990s (gas), with current production volumes only a very small fraction of their highs from the 1980s and 1990s.*

Educating the Public

Engaging the public to support common sense solutions for Greater Sage-grouse is the third area of emphasis set forth in the State of Utah contract requirements. New and existing and team members and resources are enhancing our ability to educate and engage the public.

Direct Engagement

The Greater Sage-grouse Coordinated Consulting Team is working with staff, contractors, partners and volunteers in key Sage-grouse states to directly engage the public. We focused these efforts in counties with Sage-grouse populations where listing of the birds not only could affect conservation of the species, but also education funding, hard-working families, outdoor recreation and local economies. We found that people support state-based management efforts and want federal wildlife managers to augment state efforts, not replace state efforts with more federal regulation. Significant in-person outreach efforts have been undertaken in Western States including Utah, Idaho, Montana, Wyoming, Nevada, Washington and Colorado.

Engaging Existing Supporters

During the last year we have engaged tens of thousands of interested western residents on the issue of Greater Sage-grouse. There is significant concern about the fact that a species with an approximate population of 500,000 birds spread across 11 Western states would be considered an endangered or threatened species. We also found that respondents felt the restrictions of the Endangered Species Act are best utilized as a last resort. This was particularly true where the efforts of impacted states have stabilized Sage-grouse population trends in recent decades. Just as impor-

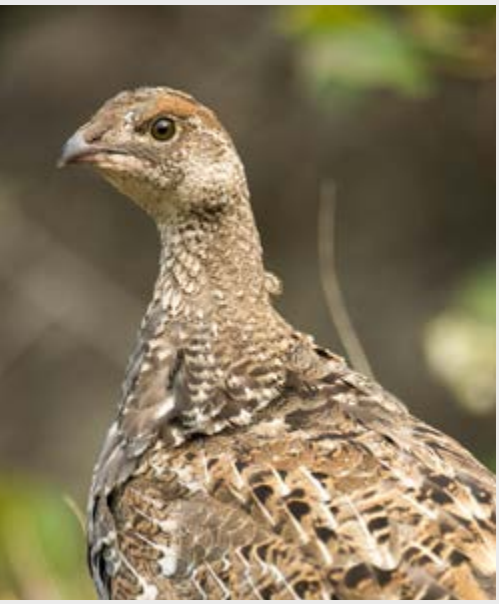
tantly, the public trusts states to implement solutions that work for conservation and for western economies. They also support funding from federal wildlife agencies to Western states to help advance efforts of state wildlife professionals to implement common sense solutions for conservation priorities like Greater Sage-grouse.

Paid Outreach

The Sage-grouse Coordinated Consulting Team began outreach efforts to help understand how certain demographics felt about the possibility of a listing of Greater Sage-grouse. The most responsive demographics included parents of school-age children, outdoor recreation enthusiasts and individuals concerned about economic productivity and jobs. We learned that these individuals responded more readily to information that conveys how a premature listing of Greater Sage-grouse might impact them and their families. There was a high degree of support for state conservation measures among these individuals. This support increased when the individuals understood these conservation measures were consistent with common sense solutions that ensure balanced use of resources in ways that protect education funding, outdoor recreation and minimized impacts to jobs and the economy.

Direct Action

Literally thousands of phone calls and tens of thousands of messages of support have been sent to Congress as part of these efforts to support state management of Sage-grouse. Over 50,000 individuals have signed the online petition in support of Congressional action to provide an extension of time. This is in addition to tens of thousands of existing supporters who have expressed concern regarding policies impacting Western states. These supporters have played a significant role in contributing to the momentum of Section 2862 of the National Defense Authorization Act.



Why Activists Use the ESA to push Greater Federal Control Unilateralism

The Anti-Use Ideology

There is an ideology and methodology which underlies these efforts to use the Endangered Species Act and other federal provisions to attack sportsmen, abundant wildlife, and the West. Political Scientist Martin Nie explains this in his groundbreaking article *The SocioPolitical Dimensions of Wolf Management and Restoration* published in the 2001 edition of the *Human Ecology Review*. See http://www.humanecologyreview.org/pastissues/her81/81nie.pdf

Professor Nie explains:

> *Similar to a number of other environmental issues and debates, wolf politics and policy is often about much more than just wolves and their management. The struggle over carnivore conservation is often a surrogate for broader cultural conflicts: "preservation versus use of resources, recreation-based economies versus extraction-dependent economies, urban versus rural values, and states' rights versus federalism" (Primm and Clark 1996, 1037).*

Citing Harvard University Professor E.O. Wilson:

> *"This is not really a story about wolves, but a story about people and their struggle to define the future of land use in the American West — it is within this highly charged political context that the wolf in Yellowstone must be understood as a symbol, 'a biopolitical pawn' in a much larger conflict currently being waged between the activists of two social movements — environmentalism and wise use." Scarce (1998)*

He also explains its connection to the concept of "rewilding" of the West:

> *The Wildlands Project (TWP) is also unmistakably interwoven into the story of wolf management and restoration. The mission of TWP is both simple and sweeping*, "to protect and restore the natural heritage of North America through the establishment of a connected system of wildlands — To stem the disappearance of wildlife and wilderness we must allow the recovery of whole ecosystems and landscapes in every region in North America — we live for the day when grizzlies in Chihuahua have an unbroken connection to grizzlies in Alaska; when wolf populations are restored from Mexico to the Yukon; when vast forests and flowing prairies again thrive and support their full assemblage of native plants and animals; when humans dwell with respect, harmony, and affection for the land; when we come to live no longer as conquerors but as respectful citizens in the land community *(The Wildlands Project 2000, 4)."*

The Underlying Anti-Sportsmen Philosophy

Many of the activists who push an increasing federal unilateralism over wolves, Sage-grouse, ecosystem management and a diminished role of state wildlife agencies, are strongly anti-hunter or

anti-sportsmen in their philosophy. After a meeting of several large environmental groups, one activist explained the cooperative thinking on future policy decisions. The article, entitled, "Now is the time to be bold" explains:

> *So what solutions do I offer? The 5 Keys to Reforming Wildlife Management in America , are as follows: 1. Restructuring the way state Fish & Game departments operate. Politics: western governors appoint agency commissioners, which essentially, tell the state departments what to do. This is cronyism at its worst. Economics: state departments are mostly funded by the sale of hunting/fishing tags or permits. These agencies are bound into serving the interest of "sportsmen" because it's the hand that feeds them. Modern funding mechanisms, the application of best-available science and genuine public involvement are sorely lacking in these institutions and it must be addressed. Another option would be to empower the federal government to manage wildlife on federal public lands.*

The author goes on to suggest that the "conservation community" has adopted an agenda of: (2) Removing all grazing from public land; (3) Abolishing Wildlife Services: (4) Banning trapping/snaring on public land; (5) No killing of predators. What effect will this have on wildlife abundance? What effect will this have on sustainable yield, hunting and the North American Model? Of course this would be a disaster not only for hunting, but for conservation of wild game species in general. But it does show the level of anti-hunting sentiment that underlies the push for a growing federal unilateralism when it comes to wolves and Sage-grouse.

Using the Federal Government and ESA as a "Club"

One high-level thought leader, activist, and former head solicitor in the Department of Interior during the Clinton administration was even more straightforward in his comments during a recent Congressional hearing on the Endangered Species Act. John Leshy was not only brazen, but surprisingly candid and unapologetic that the "federal government and the Endangered Species Act" "provides the club" to force states to do what they want them to do. Those who have followed the spotted owl, or gray wolf, will recognize the use of the Endangered Species Act as a surrogate, or proxy, to collaterally attack multiple-use such as logging, grazing, and hunting.

Eastman's Hunting Journal was candid in their assessment of how Sage-grouse will be utilized to attack hunting:

> *Endangered Species Act (ESA) is being used as a weapon to potentially destroy our hunting heritage… The sage grouse is the next piece in the puzzle for the feds and the animal rights groups to further limit our access and sport. If you look at the wolf and grizzly bear recovery area map, and overlay the proposed sage grouse recovery area you can easily see they fit together like a glove. The sage grouse habitat area will encompass most of what is thought to be some of the best mule deer habitat on the planet. Make no mistake about it, listing the sage grouse as endangered species would have disastrous affects on western hunters and recreationalists. This "power grab" of our precious wildlife resource is nothing more than politics as usual, pure and simple.*

In a letter dated, May 26, 2015, sportsmens organizations from Sage-grouse states signed a letter in support of congressional action to protect state management of Sage-grouse. In total, 150 sportsmen, conservation organizations, livestock organizations, and western leaders (see following page) signed the letter. A copy of the letter is included in Exhibit F.

Restrictions on access to BLM and Forest Service land can also restrict access to state and even private lands.

Lawsuits

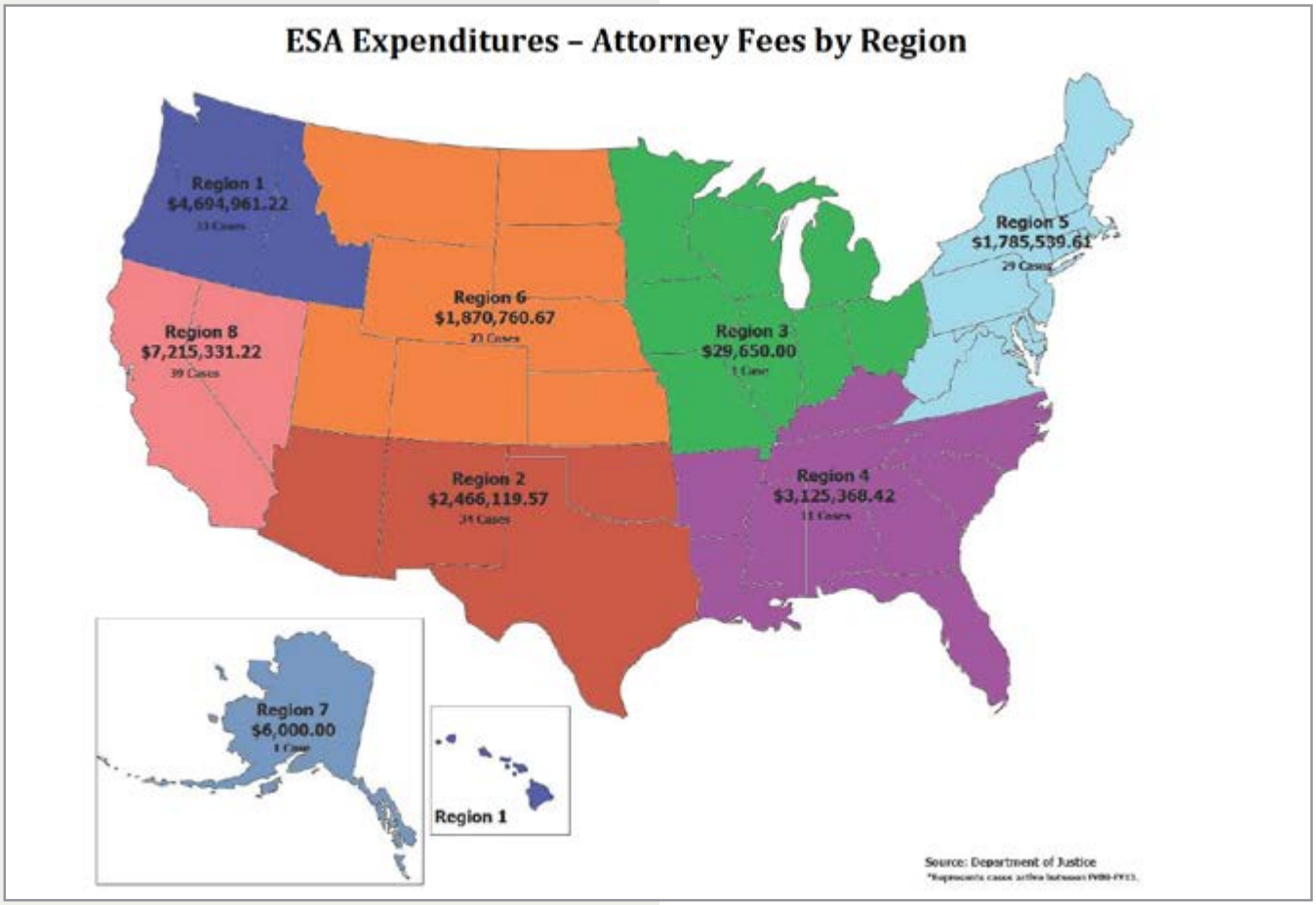
The legal and administrative history of Greater Sage-grouse is full of repeated petitions for listing as well as multiple lawsuits. More lawsuits and listing petitions for the species in coming years are virtually guaranteed. After a decade of lawsuits and ESA listing decisions for the Greater Sage-grouse, it is becoming clear there is no end in sight. This was the third ESA decision for the Greater Sage-grouse in just 10 years. USFWS is already indicating that they will make yet another ESA listing decision on Greater Sage-grouse in another five years. Additionally, several environmental groups have already indicated that they plan to file lawsuits to challenge the listing decision and/or the BLM and USFWS land use plan amendments.

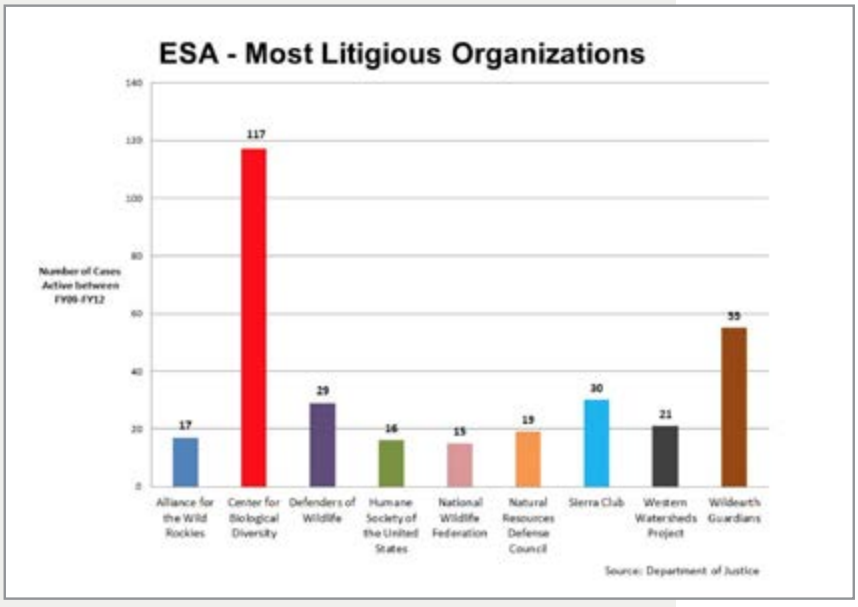
Many have begun to point out that new restrictions proposed by federal agencies and radical environmental special interests using the repeated threat of an ESA listing are more about micromanaging state wildlife policies and landscape control than advancing species conservation. Already hundreds of millions have been committed to conservation of Greater Sage-grouse, almost to the exclusion of other species of much greater conservation concern. The constant legal and political wrangling creates further frustration and uncertainty for those who are needed the most for conservation of the species.

One provision of the language introduced by Congressman Rob Bishop provides litigation safe-harbor to allow state conservation efforts to go forward without interference of litigation by these powerful special interest groups:

"Judicial Review—Notwithstanding any other provision of statue or regulation, this section, including determinations made under subsection (d)(3), shall not be subject to judicial review."

After years of abuse of the Endangered Species Act, it is time to allow states to thoughtfully implement their state conservation plans without further interference and manipulation.





Millions of Taxpayer Dollars Spent on Endangered Species Act Litigation and Attorney Fees

WASHINGTON, D.C., June 19, 2012 - According to data recently obtained from the Department of Justice (DOJ) in response to document requests, the federal government has defended more than 570 Endangered Species Act (ESA)-related lawsuits costing U.S. taxpayers more than $15 million in attorney fees – in just the past four years. This data provides further evidence that the ESA has become litigation driven, where money and resources are spent addressing endless, frivolous lawsuits instead of species recovery.

Environmental groups are filing the vast majority of litigation, with the Center for Biological Diversity and the WildEarth Guardians leading the charge.

(http://naturalresources.house.gov/newsroom/documentsingle.aspx?DocumentID=299899)

Historical Parallels

Disproportionate focus on "protections" which limit human activity leads to lost opportunities. In 1992, the U.S. Fish and Wildlife Service listed the spotted owl as an endangered species. The Service and environmental activists repeatedly stated that shutting down the timber industry was the answer to protecting the spotted owl. The negative impacts to industry, local economies, and hard-working families in the region have been well-documented. Eighteen years later, these draconian "protection" measures have not been successful in stopping the decline of the spotted owl. The singular focus on human activity missed a key factor in spotted owl decline—competition from the larger and more aggressive barred owl. Federal managers now acknowledge the role of natural selection in spotted owl decline. Now, to save the spotted owl from further decline, barred owls are being shot and killed. Unfortunately, almost 20 years of conservation opportunity was lost while the spotted owl was used as a surrogate for those who oppose human use of the natural resources in the Pacific Northwest.

Western states do not want to make this same mistake. In the last 18 months, it has become clear that states are investing heavily in Sage-grouse conservation. The state of Utah is no exception. Tens of millions of dollars have been invested in Sage-grouse conservation in Utah. Understanding the challenges facing Sage-grouse, Utah's plans have grown and strengthened populations. These conservation measures are making Utah's Sage-grouse habitats more resilient, redundant and capable of supporting more Sage-grouse. These programs are also providing important solutions for other challenges including wildfire, pinyon and juniper encroachment, invasive plant species, and watershed restoration. The right solution for Sage-grouse and citizens of the state of Utah is to ensure that the state's conservation plan can be fully implemented without further unnecessary and unhelpful restrictions. Our efforts are to protect state management of Sage-grouse and the programs that are providing such significant dividends in the state of Utah.

The singular focus on human activity missed a key factor in spotted owl decline--competition from the larger and more aggressive barred owl. Now to save the spotted owl from further decline, barred owls are being shot and killed.

Federal Agencies Increase Restrictions

BLM land use plans usher in another round of federal restrictions. The focus once again is primarily on shutting down human activity; threatening further loss of resources for conservation.

The Sage-grouse Coordinated Consulting Team has worked diligently to work with members of Congress on concerns related to newly proposed federal regulatory restrictions. Restrictions on BLM and Forest Service land are a significant challenge for pinyon/juniper removal, wildfire prevention and suppression, and other important conservation measures for Sage-grouse. In fact, more than 90% of acres burned in an 18-year study period occurred on land managed by the Bureau of Land Management. Utah's Watershed Restoration Initiative is addressing these challenges. Our hope is that less federal red tape will allow more conservation work to be done in the next 10 years. Just as important is protecting the programs and private funding sources that made these programs possible.

This is one of the reasons that the newly proposed Sage-grouse "focal areas" have been a significant focus of concern to Western states. As part of the federal focal area strategy, approximately 9-10 million acres of mining withdrawals are being proposed by the federal government. This raises

many questions about the impacts to Western states, industry, economy, and jobs for those living across the West. While there has been much focus on these mining withdrawals across Oregon, Nevada, Idaho, Montana, Wyoming and Utah, BLM restrictions will be much more far reaching:

> "Prior to offering any parcels for sale, the BLM will ensure conformance with the sage grouse plans," says Mitch Snow, a spokesman for the agency. Those plans call for strengthened sage grouse protection across 67 million acres in 10 states, putting 28 million acres off limits for surface development. In addition, tiered restrictions will be placed on any new leases, which can include disturbance caps, density limits on well pads and roads, and buffer zones between drilling activity and leks, the birds' mating grounds.[1]

1 To read more visit: http://www.hcn.org/articles/blm-mulls-energy-development-in-Sage-grouse-habitat

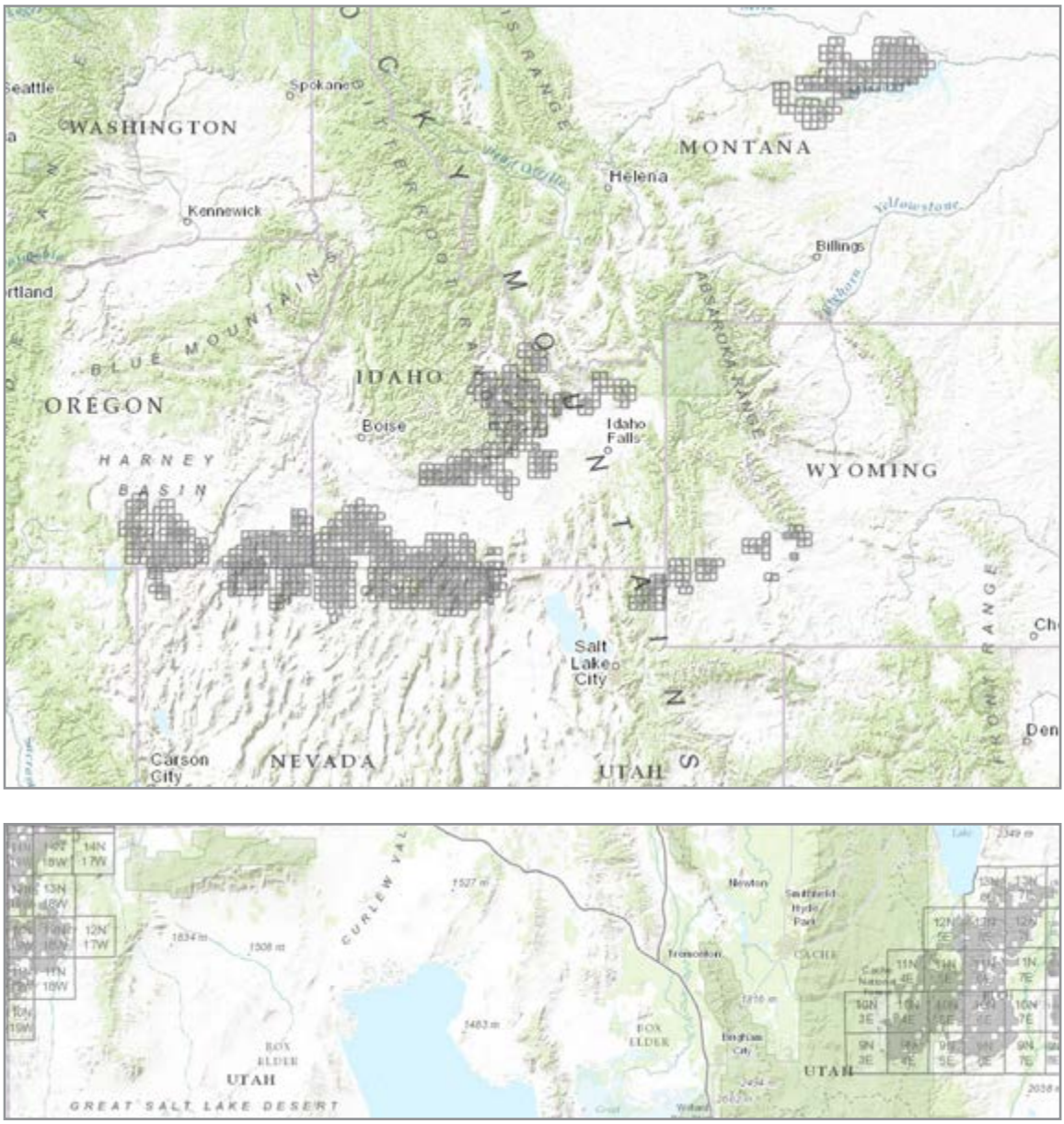


Figure 18. Proposed mining withdrawals in Sage-grouse focal areas comprise approximately 3.8 million acres in Idaho, 2.7 million acres in Nevada, 1.9 million acres in Oregon, 983,000 acres in Montana, 252,000 acres in Wyoming, and 231,000 acres in Northern Utah. (See http://blm-egis.maps.arcgis.com/apps/webappviewer/index. html?id=45b2d7896c36467aac3990b739d75a26)

Veteran's Cemetery

In Sparks, Nevada, the BLM's management plans also placed doubt on a veterans' cemetery. An op-ed in the Reno-Gazette Journal explains:

> *Another conflict exists in Sparks where Washoe County has identified a 40-acre parcel adjacent to the Pyramid Highway that would be an optimal location for a new veterans' cemetery. But the BLM map mischaracterizes this spot as habitat, even though it's currently being used by dirt bikers and most certainly isn't a good place for the birds.*
>
> *Washoe County has expended considerable resources to develop our own habitat maps because we think wildlife conservation is important. We certainly strive to avoid conflicts between wildlife habitat and development. But at the same time, we cannot be constrained by a faulty habitat map that means we can't acquire lands needed for development.*

Figure 19. Land proposed for a veterans' cemetery in the city of Sparks, Nevada placed at risk by propose Sage-grouse restrictions.

Water Tank Update

Efforts to rebuild an aging water tank illustrate the level of control already being exerted by federal regulators in the name of Sage-grouse. The truly draconian nature of the newly proposed land-use plans will continue to worsen over the long-term. In an article by the Associated Press, a meeting between Nevada Governor Brian Sandoval with Interior officials was required to allow even this basic project to move forward:

> *"Federal land managers are clearing the way for a rural Nevada county to replace an aging water tank that critics called a prime example of development doomed by new protections for the greater sage grouse.*
>
> *The move comes a week after Republican Gov. Brian Sandoval announced that the U.S. Interior Department agreed to address concerns about the land-use restrictions, including the water tank that White Pine County officials say is desperately needed near Great Basin National Park along the Utah line.*
>
> *U.S. Bureau of Land Management officials authorized the necessary right-of-way late Thursday that will allow construction to begin in July, agency spokesman Steve Clutter said.*
>
> *Clutter says the deal protects important habitat, consistent with regulations issued in September when Interior Secretary Sally Jewell determined that the chicken-sized bird doesn't need Endangered Species Act protection. Sandoval met with Jewell last week during a meeting of the Western Governors' Association and told reporters they had made strides in addressing concerns about the rules…*
>
> *Lawyers representing the BLM said in a brief filed late Thursday that the water tank site is 0.7 miles from an existing breeding ground and in an area that contains habitat for grouse breeding and nesting.*
>
> *Nevertheless, federal officials could approve the project because it would benefit the grouse through installation of anti-perching devices to keep away raptors, among other things.*
>
> *"Contrary to plaintiffs' assertions, these requirements are not 'one-size-fits-all,'" assistant U.S. Attorney General Luther Hajek wrote. "BLM has determined that the replacement of the water tank would provide a net conservation gain to sage grouse by reducing the attractiveness of the area to predators and ensuring a source of water to control wildfires."*[1]

1 To read the complete article visit: http://www.washingtontimes.com/news/2015/dec/11/blm-approves-nevada-project-critics-claimed-doomed/

It now appears that restrictions on the time frame allowed for construction may once again make the project impractical or impossible. Whether or not the project moves forward, the underlying takeaway from these examples points to a concerning new reality. The most basic of governmental decisions cannot be made without permission from the Department of the Interior.

While permission may be granted in some high profile cases, it is clear that Interior will use Sage-grouse to control even the most common-sense and basic of decisions. What this shows is that federal Sage-grouse plans were designed to dramatically affect Western states. This will have a debilitating affect on industry and citizens in the region. States have already shown that more balanced and proactive conservation measures can work for Greater Sage-grouse. Congressional action will be needed to allow for implementation of state's conservation plans to protect the state of Utah's interests from unnecessary impacts to Utahns, local communities, and the state's economy.

These concerns are shared by leaders in Congress:

> *"While [the Omnibus] does contain much good, it also has shortcomings. House leadership has acknowledged these issues and they are particularly aware of the impacts on western priorities. I am confident that in the coming months, those shortcomings will be addressed and made right. The problem with the bill is what it could have been and what it should have been. Western issues that improve our lives should NOT be held hostage by Democrats in the House and Senate. These issues were eliminated with the threat of a government shutdown for political reasons." (Congressman Rob Bishop)*

Could Federal Plans be used to Decrease Mule Deer Populations?

Mule deer populations have been gradually declining over the past 40 years across the West. Cumulative population declines over the past 40 years have been significant. This has been an area of significant concern for sportsmen. So how will these 2,000 pages of new restrictions impact mule deer populations? Seasonal Sage-grouse populations overlap with mule deer populations by as much as 91%. These are some of the most important mule deer areas to hunters in terms of mule deer population numbers, tag allocations, and hunting opportunity in the country. It is not limited to mule deer either. Sage-grouse also inhabit prime hunting areas for Pronghorn and Rocky Mountain Elk.

Considering the huge area of Sage-grouse habitat, 2,000 pages of new restrictions proposed by Bureau of Land Management, the U.S. Forest Service, and the U.S. Fish and Wildlife Service could have significant impacts on wildlife and hunting across much of the Mountain West. Just how much impact could these new restrictions have on mule deer populations? A review of the federal Sage-grouse record from U.S. Fish and Wildlife Service and other Federal agencies related to Sage-grouse is insightful. In fact, the Federal record all but paves the way for future mandates and judicial activism to further reduce mule deer and other wild ungulate populations. Consider the following quotes:

"...despite decreased habitat availability, elk and mule deer populations are currently higher than pre-European estimates."

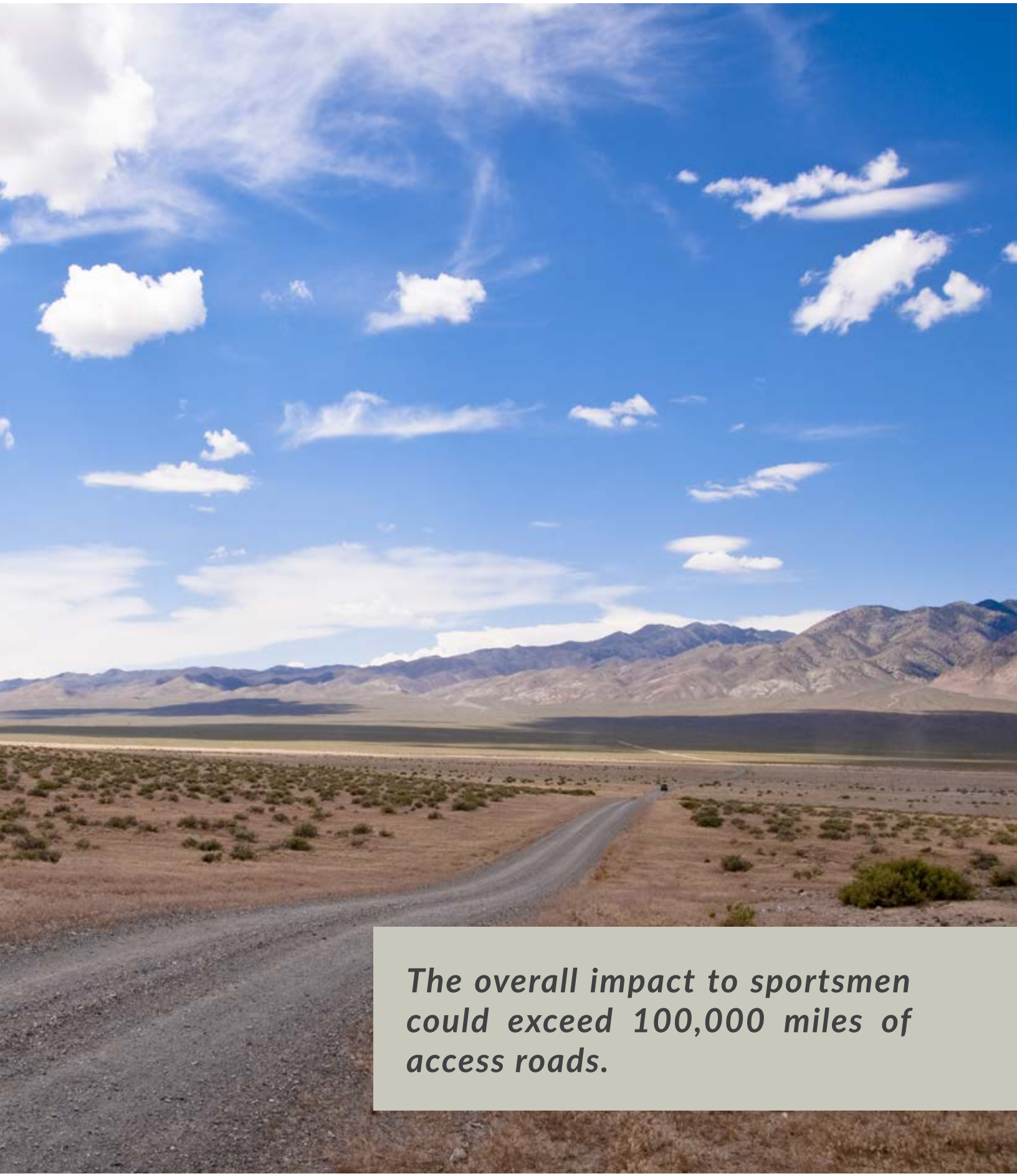
"Elk and mule deer browse sagebrush during the winter and can cause mortality to small patches of sagebrush from heavy winter use."

"...we do know that grazing can have negative impacts to sagebrush and consequently to Sage-grouse at local scales...Given the widespread nature of grazing, the potential for population-level impacts cannot be ignored."

These official pronouncements open the door to lawsuits by anti-sportsmen organizations to reduce mule deer, elk and other ungulate populations in order to "protect Sage-grouse" and their "obligate sagebrush plant communities." It is no surprise that many of the same anti-sportsmen activist organizations that have been behind exploding wolf numbers and the commensurate imploding elk and moose population numbers, are also huge proponents of these new BLM management plans. A few of these groups include:

Defenders of Wildlife
The Center for Biodiversity
The U.S. Humane Society
Earth Justice
Sierra Club
WildEarth Guardians
Wildlands Network
Western Watersheds Project
Born Free USA
The Endangered Species Coalition

It is just as likely, that these groups will use this new treasure trove of regulation to file round after round of lawsuits targeting sportsmen, ungulate populations, livestock producers, and other productive uses in Sage-grouse habitat in the coming decades. A memo written by Bill Myers, former top solicitor for the U.S. Department of Interior, and partner at the western law firm of Holland and Hart explains that litigation is not only likely, but could easily lead to mandates for further reductions of mule deer, elk and other ungulates. It is just as likely that these mandates will be accomplished by blocking management of predators including wolves and coyotes. See Exhibit G.



The overall impact to sportsmen could exceed 100,000 miles of access roads.

Could Federal Plans Be Used to Undermine the Rights of Sportsmen?

Access

Reducing mule deer, elk, and pronghorn population numbers is not the only way hunter's rights will be impacted by these new federal Sage-grouse plans. One of the most insidious impacts will be to reduce access to sportsmen. We'll use Utah as a case study in how significant restrictions on access could impact sportsmen.

Overview of Hunting, Fishing and Outdoor

An estimated 26.5 percent of hunters afield in Utah during 2012 entered the FWS current range of Greater Sage-grouse. Nearly one-third of fishing trips in 2011 were to destinations in FWS current range. Lesser shares of hunters afield and fishing trips were to SGMAs (21.0 percent combined) or historical-only range (16.9 percent). Hunting and fishing expenditures in SGMAs were $139 million, and spending in historical-only range was $112 million, both with similar shares from nonresidents. Total expenditures in FWS current range generated $124 million in earnings from 4,180 jobs and $243 million in value-added or gross state product.

Road Closures/Lost Access

Closing roads is one way access restrictions are accomplished. Road closures are already being mandated on 16 million acres of "Sage-grouse Focal Areas" across the Western United States by U.S. Fish and Wildlife Service, the BLM, and the U.S. Forest Service.

Lawsuits are already being utilized by activist organizations to close access roads for sportsmen. In fact, this has been happening for the past 20

Summary of Economic Contributions of Activities in Greater Sage-grouse Range in Utah, 2014
(Dollar amounts in millions)

	FWS CURRENT RANGE			HISTORICAL-ONLY RANGE			SGMAs		
Activity	Jobs	Earnings	Value Added	Jobs	Earnings	Value Added	Jobs	Earnings	Value Added
Oil and Gas Production	4,415	$366.5	$1,584.0	7,173	$595.5	$2,250.7	205	$17.0	$46.2
Coal Mining	2,394	$132.0	$433.3	–	–	–	–	–	–
Metals and Minerals Mining	932	$35.3	$85.3	845	$32.0	$77.4	826	$31.3	$75.6
Renewable Energy Generation	138	$138.1	$138.1	103	$5.1	$12.5	–	–	–
Cattle and Sheep Grazing	1,012	$34.6	$52.9	564	$18.8	$28.3	831	$27.9	$42.3
Hunting and Fishing	4,180	$124.4	$243.1	2,412	$71.8	$140.4	2,998	$89.2	$174.3
Total	**13,071**	**$830.8**	**$2,536.6**	**11,097**	**$723.2**	**$2,509.4**	**4,861**	**$165.4**	**$338.5**

Source: BEBR analysis.

years. These lawsuits to close "unimproved roads" have been filed by a variety of litigants. In the past 4 years, these lawsuits have become rampant. The same litigants in these road closure lawsuits are many of the groups pushing for 2,000 pages of restrictions in the name of Sage-grouse. Here are a few of these groups:

National Audubon Society
National Wildlife Federation
Natural Resource Defense Council
Wilderness Society
Western Watersheds Project
Wildearth Guardians
Center for Biodiversity

How much road are we talking? Using Utah again as a case study, there are approximately 9,000 miles of "unimproved" roads in Sage-grouse habitat throughout Utah. How much could this impact the rights of sportsmen in terms of access? Considering the much larger swaths of Sage-grouse habitat in Nevada, Idaho, Wyoming, Montana, and Oregon, the overall impact to sportsmen could exceed 100,000 miles of access roads.

BEBR Report

The Governor's Public Lands Policy Coordinated Office commissioned an independent study from the University of Utah's Bureau of Business and Economic Research on economic activity in Sage-grouse habitat in the state of Utah. The report found that literally billions of dollars annually in direct and indirect economic activity occurs within current and historic Sage-grouse range across the state of Utah. What is notable, is the sharp contrast between economic activity outside of Utah's Sage-grouse Management Areas and the much more limited activity within Utah's Sage-grouse Management Areas.

"An estimated 26.5% of hunters afield in Utah during 2012 entered the FWS current range of Greater Sage-grouse."

Is more regulation necessary?

In 2014, oil and natural gas production from wells located in historical-only range generated the greatest market value among the three areas, at just under $2 billion. In contrast, the estimated value of production from wells within SGMAs was about $42 million (See Valuation of Current Economic Activities in Greater Sage-grouse Range in Utah, Bureau of Economic and Business Research, University of Utah July 2014, Summary of Oil and Gas Revenue below).

This further supports our research that indicated that responsible Sage-grouse management is possible with responsible economic activity in the state of Utah. In fact, economic activity within Utah's SGMAs poses little impact to Sage-grouse populations within the state of Utah.

In a letter dated, May 26, 2015, sportsmens organizations from Sage-grouse states signed a letter in support of congressional action to protect state management of Sage-grouse. In total, 150 sportsmen, conservation organizations, livestock organizations, and western leaders (see following page) signed the letter. A copy of the letter is included in Exhibit G.

Supporters of Congressional Action

BigGame Forever
The Hunters Heritage Council
Washingtonians for Wildlife Conservation
Citizens for Responsible Wildlife Management
Sportsmen for Fish and Wildlife
Utah Association of Counties
Utah Farm Bureau
Utah Cattlemans
Utah Bowman's Assocation
Cooperative Wildlife Management Units Assn.
Oregon Outdoor Council
Oregon Hunters Association
National Wild Turkey Federation - South Sound Longbeards
Columbia Basin SCI Chapter
Nevada Association of Conservation Districts
Nevada Farm Bureau Federation
Nevada Woolgrowers Association
Nevada Cattleman's Association
Nevada PJ Partnership
Nevada Mineral Resource Alliance
Oregon FNAWS
Oregon Rocky Mountain Elk Foundation
Extreme Elk Magazine
Colorado Outfitters Association
Washington for Wildlife
Leupold
Eastman's Hunting Journals
Speaker Scott Bedke-Idaho House of Rep.s
Brad Little-Idaho Lieutenant Governor
Senator Bert Bracket-Idaho State Senate
Rep. Marc Gibbs-Idaho House of Representatives
COM Jerry Hoagland-Owyhee County, Idaho
Idaho Farm Bureau
Idaho Mining Association
Idaho Public Lands Council
CO Rep. J Paul Brown
CO Senator Ray Scott
CO Rep. Yuelin Willet
Colorado Mule Deer Association
Colorado Outfitters Association
Colorado Muzzleloaders Association
Colorado BigGame Forever
Colorado Trappers Association
Colorado Predator Hunters Association
Montana Guides and Outfitters Association
Montana Sportsmen for Fish and Wildlife
Montana BigGame Forever
Wyoming BigGame Forever
Teton County-WY BGF
Park County-WY BGF
Boulder County BGF-Colorado
Moffat County BGF-Colorado
Mesa County BGF-Colorado
Centennial Aurora BGF-Colorado
Weld County BGF-Colorado
Gunnison County BGF-Colorado
Safari Club International, the Inland Empire
Safari Club International, Central WA Chapter
Inland Northwest Wildlife Council
Northwest Chapter SCI
SW Washington Chapter SCI
Seattle-Puget Sound Chapter SCI
Seattle Sportsmen's Conservation Foundation, and many more.
Borderline Bassin' Contenders
Capitol City Rifle/Pistol
Cascade Mountain Men
Cascade Tree Hound Club
Cedar River Bowmen
Edison Sportsmen's Club
KBH Archers
Kittitas County Field & Stream
NW Field Trial & Hound Association
North Flight Waterfowl
Northwest Sportsman's Club
Okanogan Hound Club
Pacific Flyway
Pateros Sportsman's Club
Paul Bunyan Rifle and Sportsmen's Club
Pheasants Forever Chapter #257
Pierce County Sportsmen's Council
Richland Rod & Gun Club
Ruffed Grouse Society
Skagit Sportsman and Training Association
Tacoma Sportsmen's Club
Vashon Sportsmen's Club
Washington Falconer's Association
Washington Game Fowl Breeders Association
Washington State Bowhunters
Washington State Hound Council
Washington Muzzleloaders Association
Washington State Trappers Association
Wenatchee Sportsmen's Association
Washington Waterfowl Association
Wildlife Committee of Washington
Oregon United Sporting Dogs Association
Oregon Safari Club International
Oregon Trappers Association
Oregon Falconers Association
Benchmade
Double U Hunting Supply
Oregon Pack Works
HEVI Shot
HECS Stealthscreen
Bullseye Camera Systems
Elk101.com
NW Predator Hunters
Oregon Duck Hunters
S2 Calls
HuntonXMaps
Dominic Aiello
Dr. John Menke (Professor Range Ecologist retired)
N-4 Grazing Board
Nevada BigGame Forever
Lincoln County Wildlife Advisory Board
Buckskin National Gold Mine
Eureka County Natural Resource Commission
Senator Don Gustavson-NV Chairman Natural Resources
Senator Pete Goicoechea-NV Senate District 19
Assemblyman John Ellison-NV District 33
Assemblyman Ira Hansen-NV District 32
COM Demar Dahl-Elko County
COM Julian Goicoechea-Eureka County
COM Kevin S. Phillips-Lincoln County
J. Goicoechea-Nevada Land Action Association
John Uhalde-Ely Nevada
Bevan Lister-8 Mile Farms
David Stix-Stix Livestock
Dan Crowell-Eureka Veterinary Service
Jerry Sestanovich-Sestanovich Hay and Cattle
David A. Baker-Baker Ranches
S. Wallace Slough-Quinn River Crossing Ranch
Robert McDougal-Nevada Nile Ranch
Tony and Nancy Lesperance-Liberty Land and Livestock
Norman Frey-Fallon Nevada
Lura Weaver-Lyon County Nevada
Robert and Cassie Mason-Round Mountain, NV
Carl F. Slagowski
Fred Baily-Diamond Valley, Nevada
Lincoln County Conservation District
John Falen-McDermitt, Nevada
Maggie Orr-Lincoln County
William Blackmore-BigGame Forever Washoe County
Michael Turnispeed-BigGame Forever Carson City, Nevada
Lilla and Woodie Bell-Paradise Nevada
Travis Miller-Jiggs, Nevada
Fred and Chris Steward
Gracian Uhalde-Ely, Nevada
Pete Paris
Ron Cerri-Orovada, Nevada
Kade Lee-Lincoln County, BGF
John Caviglia-White Pine County BGF
Bruce Allen-Clark County BGF
Eureka County Conservation District
Brenda Richards-Murphy, Idaho
Richard Savage-Savage Cattle
John Faulkner-Faulkner Land & Livestock
Bill Baker-Baker Environmental Consulting
John Biar-Western Rangeland Consulting Services
David Little-Little Enterprises

PROGRESS & RESULTS

Stag Consulting has continued its efforts to protect Utah's plan for Sage-grouse Management and ensure federal plans are consistent with state management authority over non-endangered Sage-grouse. The Greater Sage-grouse Coordinated Consulting Team continues to expend significant efforts to protect Utah's conservation programs, to address onerous provisions within the BLM and Forest Service management plans, and to prevent a listing of Greater Sage-grouse as an Endangered or Threatened Species. These efforts are producing significant results for the state of Utah and for conservation of Greater Sage-grouse.

June 16, 2017 Secretarial Order 3533

On June 16, 2017 Secretary of the Interior Ryan Zinke issued Secretarial Order 3533 Greater Sage-Grouse Conservation and Cooperation with Western (see Exhibit H for the full order). The purpose of the order was three-fold, to:

1. enhance cooperation between the Department of the Interior and 11 western states with Sage-grouse populations.
2. support a partnership with clearly defined objectives and roles for Federal and State entities responsible for Sage-grouse management and conservation to sustain healthy populations.
3. establish a team to review the Federal land management agencies' 2015 Sage-Grouse plan amendments and revisions.

In the order, Secretary Zinke acknowledges where the role of federal agencies in managing land and resources overlaps with the role of state agencies in managing their wildlife. He also states, "As the Department moves forward in the management of Sage-Grouse habitat, it is imperative that it does so in a manner that allows both wildlife and local economies to thrive and incorporate the expertise of Federal employees in the field, local conditions, and proven State and local approaches."

As part of its efforts to improve cooperation between the federal and state agencies the following items will be developed by the review team and the federal agencies involved:

(i) memorandums of understanding and other agreements with states and other partners regarding implementation of the 2015 Sage-Grouse Plans;

(ii) training for BLM staff regarding implementation of the 2015 Sage-Grouse Plans, including direction to consider state and local information, as appropriate; and

(iii) memorandums of understanding and other agreements with States and other partners regarding integration of information on Sage-Grouse populations into Federal land management decisions.

The order establishes the Sage-Grouse Review Team and charges it with the following tasks:

(i) a review of the plans and programs that States already have in place to ensure that the 2015 Sage-Grouse Plans adequately complement state efforts to conserve the species;

(ii) a further examination, through the framework established by the Integrated Rangeland Fire Management Strategy, of issues associated with preventing and fighting the proliferation of invasive grasses and wildland fire, which are leading threats to Sage-Grouse habitat;

(iii) an examination of the impact on individual States disproportionately affected by the large percentage of Federal lands within their borders, recognizing that those lands are important to resource use and development, and to the conservation of the Sage-Grouse;

(iv) a review of the 2015 Sage-Grouse Plans and associated polices, including seven BLM Instruction Memoranda (IM) issued in September 2016. The review will include (1) identification of provisions that may require modification or rescission, as appropriate, in order to give appropriate weight to the value of energy and other development of public lands within BLM's overall multiple-use mission and to be consistent with the policy set forth in Secretary's Order 3349, "American Energy Independence," implementing the Executive Order signed by the President on March 28, 2017, "Promoting Energy Independence and Economic Growth"; and (2) opportunities to conserve the Sage-Grouse and its habitat without inhibiting job creation and local economic growth;

(v) as appropriate, the Team should provide recommendations with regard to (1) captive breeding; (2) opportunities to enhance State involvement; (3) efficacy of target populations on a State-by-State basis; and (4) additional steps that can be taken in the near term to maintain or improve the current population levels and habitat conditions.

August 4, 2017 Secretarial Memo

On August 4, 2017 Secretary Zinke released a memo that says the Sage Grouse Review Team had completed its response to Order 3533 (See Exhibit I for the full memo). In the memo he states:

I hereby direct you to ensure implementation of the recommendations and direct BLM, in coordination with the U.S. Fish and Wildlife Service, U.S. Geological Survey, and other offices in the Department, to immediately begin implementing the short- and long-term recommendations in the Report. As part of this effort, the BLM should collaborate with the Sage-Grouse Task Force to engage with stakeholders and to improve the compatibility of the 2015 Sage-Grouse Plans with the States, beginning with these actions:

- *Identify options to incorporate updated habitat boundaries into habitat management areas;*
- *Clarify mechanisms to modify waivers, exceptions, and modifications in priority habitat management areas (PHMAs);*
- *Modify or issue new policy on fluid mineral leasing and development, including the prioritization policy;*
- *Issue or modify policy and provide training on use of assessment and monitoring data and*

tools, the habitat objectives table from the 2015 Sage-Grouse Plans and to increase flexibility in grazing management;

- *Identify options for flexibility when applying adaptive management decisions;*
- *Investigate options to streamline use authorizations with little impact on the 2015 Sage-Grouse Plans;*
- *Clarify the appropriate use of compensatory mitigation and identify opportunities to increase consistency between the Federal and State plans;*
- *Work with the States to improve techniques and methods to allow the States to set appropriate population objectives; and*
- *Investigate the removal or modification of Sage-Grouse Focal Areas in certain States.*

Sage Grouse Plan Review Team Response

The Sage Grouse Plan Review Team's response included detailed long-term and short-term recommendations for the issues outlined in Order 3533. The following issues were addressed in detail in the appendices of the response.

1) *2015 GRSG Plans and Policies (Addressing Sections 4b(i), (iii), and (iv) and 4a of the Order)*
   a) *Fluid Minerals (Stipulations, Waivers, Exceptions, Modifications, Leasing*
   b) *Prioritization) and Density and Disturbance*
   c) *Mitigation and Net Conservation Gain Disturbance*
   d) *Habitat Assessment, Habitat Objectives Tables, and Effectiveness Monitoring*
   e) *Adaptive Management*
   f) *Livestock Grazing*
   g) *Other Minerals, Energy, and Lands (e.g., rights-of-way)*
   h) *Habitat Boundaries - Sagebrush Focal Areas and Habitat Management Areas*
2) *Wildland Fire and Invasive Species (Addressing Sections 4b(ii) and 4a of the Order)*
3) *Wildlife Management (Addressing Sections 4b(v) and 4a of the Order and Other Requests by the DOI Team)*
4) *Data Management and the Use of Science (Addressing Section 4a of the Order and Other Requests by the DOI Team*

The initial review and recommendations are a step in the right direction. Many of the recommendations included in the response are in line with Utah's Sage-grouse Management Plan. Stag Consulting will continue work with Congress and the Department of the Interior to ensure Utah is able to continue its common sense Sage-grouse conservation efforts and to eliminate overly burdensome provisions from the Federal management plans.

CONCLUSION

Secretarial Order 3533 and the August 4, 2017 Secretarial Memo are significant steps Secretary Zinke has taken in the past 6 months to reduce the onerous impact of the controversial BLM and U.S. Forest Service Sage Grouse Management plans put in place in 2016. We are confident the Sage Grouse Plan Review Team's recommendations are just the beginning steps in the process of bringing the Federal mnaagement plans into alignment with State management plans.

We continue to be encouraged by Congress's commitment to protect Utah's commonsense Sage-grouse management plans. The provisions of H.R. 527 and S. 273 provide important protections for state management of Sage-grouse in Utah and across the west.

State management plans continue to demonstrate their efficacy for conservation of Sage-grouse. We anticipate significant interest in including Sage-grouse language in must-pass legislation during the current Congress and an improved reception for Sage-grouse legislation by the current administration.

EXHIBIT A

US BUREAU OF LAND MANAGMENT
INSTRUCTION MEMORANDUM
NO. 2016-143

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240
http://www.blm.gov

In Reply Refer To:
3100 (310) P

SEP 1 2016

Instruction Memorandum No. 2016-143
Expires: 09/30/2019

To: State Directors (California, Colorado, Idaho, Montana/Dakotas, Nevada, Oregon/Washington, Utah, and Wyoming), and Center Directors

From: Deputy Director

Subject: Implementation of Greater Sage-Grouse Resource Management Plan Revisions or Amendments – Oil & Gas Leasing and Development Sequential Prioritization

Program Areas: Oil and Gas Leasing and Operations, Land Use Planning, National Environmental Policy Act (NEPA) Compliance, and Wildlife – Greater Sage-Grouse.

Purpose: This Instruction Memorandum (IM) provides guidance on prioritizing implementation decisions for Bureau of Land Management (BLM) oil and gas leasing and development, to be consistent with the Approved Resource Management Plan Amendments for the Rocky Mountain and Great Basin GRSG Regions and nine Approved Resource Management Plans in the Rocky Mountain GRSG Region (collectively referred to as the GRSG Plans). This IM applies to activities in the areas covered by both the Rocky Mountain (RM) and Great Basin (GB) Regions Records of Decision (RODs), issued by the BLM in September 2015.[1] This IM also contains reporting requirements for communication between State Offices and the Washington Office.

The objectives of this IM are: to ensure consistency across BLM offices when implementing the GRSG Plans decisions aimed at avoiding or limiting new surface disturbance in Priority Habitat Management Areas (PHMAs), including Sagebrush Focal Areas (SFAs), and minimizing surface disturbance in General Habitat Management Areas (GHMAs); and to provide clarity to the BLM Field Offices on how to move forward with oil and gas leasing and development activities within designated GRSG habitats[2]. This IM provides guidance on how the BLM will exercise the

[1] These Records of Decision are accessible through links on the BLM webpage for Sage-Grouse and Sagebrush Conservation, at http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

[2] In addition to PHMAs, SFAs (a subset of PHMA), and GHMAs, other designations were made in the GRSG Plans. These include: "Important Habitat Management Areas" (IHMAs – only applicable to the State of Idaho), "Linkage Connectivity Habitat Management Areas" (LCHMA – applicable only in Colorado), "Restoration Habitat Management Areas" (RHMA – applicable only in the Billings and Miles City Field Offices), and "Other Habitat Management Areas"

Secretary of the Interior's discretion with regard to leasing activities in order to fulfill the conservation commitments in the GRSG Plans, to facilitate efforts to reduce the costs to project proponents and the BLM from the potentially extended time it may take for leasing and permitting within GRSG habitat, and to demonstrate that the GRSG Plans are being implemented consistently and transparently. BLM offices are encouraged to work collaboratively with relevant state and federal agencies as well as stakeholders to develop strategies and incentives to encourage and prioritize leasing and development outside of GRSG habitats.

Policy/Action: The BLM's Authorized Officer, acting under the delegated authority of the Secretary of the Interior, has discretion to determine which public lands will be offered at a lease sale. The Mineral Leasing Act of 1920 (MLA), as amended, provides that lands subject to disposition under the Act "which are known or believed to contain oil or gas deposits may be leased by the Secretary." (30 U.S.C. § 226(a) (emphasis added)). When evaluating Expressions of Interest (EOIs) to lease particular parcels, pursuant to the Competitive Leases Handbook (H-3120-1), the BLM will plan for leasing and development in accordance with the objectives and provisions in the GRSG Plans.

This IM does not prohibit leasing or development in GHMA or PHMA as the GRSG Plans will allow for leasing and development by applying prioritizing sequencing, stipulations, required design features, and other management measures to achieve the conservation objectives and provisions in the GRSG Plans. If the Authorized Officer determines that the potential environmental impacts could be significant while preparing the NEPA document, then the Authorized Officer will prepare an Environmental Impact Statement.

This guidance is not intended to direct the Authorized Officer to wait for all lands outside GRSG habitat areas to be leased or developed before allowing leasing within GHMAs, and then to wait for all lands within GHMAs to be leased before allowing leasing or development within the next habitat area (PHMA, for example). Rather it is intended to ensure consideration of the lands outside of GHMAs and PHMAs for leasing and development before considering lands within GHMAs and, thereafter, to ensure consideration of lands within GHMAs for leasing and development before considering any lands within PHMAs for leasing and development in an effort to focus future surface disturbance outside of the most important areas for sage-grouse conservation consistent with the conservation objectives and provisions in the GRSG Plans. This guidance is also intended to ensure careful consideration of the factors identified below when making any leasing and development decisions.

The BLM does not manage leasing on Tribal Trust or allotted lands and the GRSG Plans do not apply to such lands. Therefore, the policy in this IM does not apply to leasing on Tribal Trust or allotted lands. However, the BLM does review Applications for Permit to Drill (APDs) and other permitting actions related to development on Tribal Trust and allotted lands. As noted

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(OHMAs – only applicable to Nevada and Northeastern California, which contain no GRSG habitat). The BLM State Offices will consider leasing in these areas as is appropriate in accordance with the applicable RMP. Wyoming's "Core Areas" are generally designated PHMAs. IHMA are a level of protection in-between PHMA and GHMA; therefore, prioritization for processing development proposals will be implemented in this sequence: outside of GRSG habitat, then in GHMA, next in IHMA, and lastly in PHMA. Refer to the approved RMP, as revised or amended.

below, to the extent the BLM receives a request for such a permitting action within PHMA, including an SFA, GHMA, or other GRSG habitat area (as described in footnote 2, the BLM will consult with the appropriate tribe(s) on a case-by-case basis as a part of its permitting decision-making process.

This policy applies to leasing of federal mineral estate and development on lands managed by the BLM and other federal surface management agencies.[3] This policy also applies to split estate lands in which the mineral estate is reserved to the United States.

The GRSG Plans include decisions to prioritize geothermal resources; however, due to varying workloads and processes this IM focuses on prioritization of oil and gas leasing and permitting and does not address the prioritization within the geothermal program. State offices will address prioritization and associated factors for geothermal resources on a case-by-case basis.

A. Leasing: Sequential Prioritization of Oil and Gas Leasing in Proximity to PHMAs and GHMAs

The GRSG Plans include a decision to "prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs." (Rocky Mountain ROD at page 1-25, GB ROD at page 1-23).[4]

Therefore, based on the GRSG Plans' conservation objectives and provisions, the BLM will prioritize the leasing of oil and gas resources in accordance with the following *prioritization sequence*, in order to minimize further fragmentation and impacts to GRSG habitat or populations, and to seek greater certainty that project development can move forward expeditiously. Generally, areas open for leasing in the approved Plans will be prioritized as follows:

Prioritization Sequence for Leasing in or near GRSG Habitats

In accordance with the BLM's discretion in offering lands for leasing, BLM State Offices will use the following prioritization sequence for considering leasing in or near GRSG habitat, while also considering the "Factors to Consider While Evaluating EOIs in Each Category" as described on the following page.

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[3] For National Forest System Lands, this IM adheres to Section 226 (h) of the MLA, under which "The Secretary of the Interior may not issue any lease on National Forest System
Lands reserved from the public domain over the objection of the Secretary of Agriculture, and the 2006 Memorandum of Understanding (MOU) Between US Dept. of Interior BLM and US Dept. of Agriculture Forest Service Concerning Oil and Gas Leasing and Operations, "to insure coordination and consistency of lease stipulations and that the responsible agency heed the development process per the MOU."

[4] Although the Lander (Wyoming) ROD and Approved RMP do not include this objective, the procedures in this IM will be followed in the areas covered by that RMP in order to ensure consistency in the BLM's oil and gas leasing and development activities throughout the GRSG range. The prioritization of leasing and development is an administrative function, not an allocation decision, and so the Lander RMP does not need to be maintained or amended to adopt this approach to leasing and development.

1. Lands outside of GHMAs and PHMAs: BLM State Offices will first consider leasing EOIs for lands outside of PHMAs and GHMAs. These lands should be the first priority for leasing in any given lease sale.

2. Lands within GHMAs: BLM State Offices will consider EOIs for lands within the GHMAs, after considering lands outside of both GHMAs and PHMAs. When considering the GHMA lands for leasing, the BLM State Office will ensure that a decision to lease those lands would conform to the conservation objectives and provisions in the GRSG Plans (e.g., Stipulations).

3. Lands within PHMAs: BLM state offices will consider EOIs for lands within PHMAs after lands outside of GHMAs and PHMAs have been considered, and EOIs for lands within GHMA have been considered. When considering the PHMA lands for leasing, the BLM State Offices will ensure that a decision to lease those lands would conform to the conservation objectives and provisions in the GRSG Plans (e.g., Stipulations) including special consideration of any identified SFAs.

Factors to Consider While Evaluating EOIs in Each Category

In accordance with the BLM's leasing discretion, the BLM will consider individual parcels within each of the categories in accordance with the *Prioritization Sequence* described above, and only thereafter consider, as appropriate, a combination of what applies from the following prioritization factors. These parcel specific factors are not presented in any particular order of importance:

- Parcels immediately adjacent or proximate to existing oil and gas leases and development operations or other land use development should be more appropriate for consideration before parcels that are not near existing operations. This is the most important factor to consider, as the objective is to minimize disturbance footprints and preserve the integrity of habitat for conservation.
- Parcels that are within existing Federal oil and gas units should be more appropriate for consideration than parcels not within existing Federal oil and gas units.
- Parcels in areas with higher potential for development (for example, considering the oil and gas potential maps developed by the BLM for the GRSG Plans) are more appropriate for consideration than parcels with lower potential for development. The Authorized Officer may conclude that an area has "higher potential" based on all pertinent information, and is not limited to the Reasonable Foreseeable Development (RFD) potential maps from Plans analysis.
- Parcels in areas of lower-value sage-grouse habitat or further away from important life-history habitat features (for example, distance from any active sage-grouse leks) are more appropriate for consideration than parcels in higher-value habitat or closer to important life-history habitat features (i.e. lek, nesting, winter range areas). At the time the leasing priority is determined, when leasing within GHMA or PHMA is considered, BLM should consider, first, areas determined to be non-sage-grouse habitat and then consider areas of lower value habitat.

- Parcels within areas having completed field-development Environmental Impact Statements or Master Leasing Plans that allow for adequate site-specific mitigation and are in conformance with the objectives and provisions in the GRSG Plans may be more appropriate for consideration than parcels that have not been evaluated by the BLM in this manner.
- Parcels within areas where law or regulation indicates that offering the lands for leasing is in the government's interest (such as in instances where there is drainage of Federal minerals, 43 CFR § 3162.2-2, or trespass drilling on unleased lands) will generally be considered more appropriate for leasing, but lease terms will include all appropriate conservation objectives and provisions from the GRSG Plans.
- As appropriate[5], use the BLM's Surface Disturbance Analysis and Reclamation Tracking Tool (SDARTT) to check EOI parcels in PHMA, to ensure that existing surface disturbance does not exceed the disturbance and density caps and that development of valid existing rights (Solid Minerals, ROW) for approved-but-not-yet-constructed surface disturbing activities would not exceed the caps.

BLM state offices will use this *Prioritization Sequence*, these parcel-specific factors, and the BLM's workload capacity and other workload priorities as they determine work Plans for the oil and gas leasing program. If the state office does not offer a specific parcel identified in an EOI at the next regularly scheduled sale the BLM should inform the applicant of the reason the parcel was not included in the sale.

Pending EOIs and Leases Sold But Not Issued

The following addresses the parcels that have been nominated in the past, and leases sold but not yet issued. BLM state offices should consider these parcels, using the *Prioritization Sequence* above, and this additional guidance.

- Deferred Expressions of Interest:
  For parcels located within identified PHMAs or GHMAs that were identified via EOIs and were deferred during the development of the GRSG Plans, the BLM State Office may decide if the deferred EOI in a PHMA or GHMA would need to be identified again through a new EOI. The BLM State Office will contact the applicant who submitted the EOI to inform them of the *Prioritization Sequence* and to find out if the applicant is still interested in these previously identified tracts. If the BLM receives a new EOI for the parcel, the BLM will inform the applicant that the BLM will consider the parcel using the prioritization factors above.

- Leases Sold Prior to GRSG Plans – But Not Issued[6]

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[5] All new leases issued under the GRSG land use plans will have the stipulation for no surface occupancy (NSO) in PHMA (except WY); therefore, this exercise may not be necessary. In WY, leases issued within the PHMA Core habitat will have the controlled surface use (CSU) stipulation WL-4024, but BLM WY may want to use SDARTT to calculate existing and approved disturbance in parcels before they are offered.

[6] For example, Wyoming has approximately 170,000 acres in this status. Colorado has a few leases that were "sold but not issued." Most states do not have any leases that were "sold but not issued."

This category refers to leases that were sold in previous BLM lease sales, but were not issued. Because all leases issued after the approval of the GRSG Plans must conform to the approved Plans, the BLM will not issue leases sold prior to the approval of the GRSG Plans unless the leases are consistent with the sequential prioritization approach described above and in conformance with the GRSG Plans and with the appropriate stipulations outlined in the GRSG Plans. Consistent with the sequential prioritization approach, the Authorized Officer may issue these leases (in accordance with all laws, regulations, and policies), after a 45-day public notice period declaring the revised stipulations.[7] If the successful bidder does not consent to the revised lease stipulations, the Authorized Officer will refund the bonus bid, the first year's rental payment, and the administrative fee to the successful bidder, and close the case. Refer to BLM Handbook H-3120-1 (*Competitive Leases*) for additional guidance.

Other Tools for Reducing Impacts to PHMAs and GHMAs

The following provides a number of other tools to reduce impacts to PHMA, including SFAs, and GHMA habitat:

- Mitigation: To encourage leasing and development in the areas with the least GRSG conflicts, and in consideration of the DOI's and the BLM's policies regarding landscape-scale mitigation,[8] the Authorized Officer should consider whether the mitigation (avoidance, minimization, rectify, reduce, and compensate) will be sufficient to achieve the net conservation gain mitigation standard for any adverse impacts to GRSG habitat, as identified in the GRSG Plans.[9] One compensatory mitigation tool for achieving the net conservation gain mitigation standard, in addition to other restoration and preservation actions, that BLM might consider using is to request the record title owner(s) of existing Federal oil and gas leases located in SFAs, PHMAs, or other sensitive GRSG habitats to relinquish those leases as an offset to the potential impacts to GRSG and their habitats from activities arising from other implementation decisions or activities on valid existing leases located on the public lands. Lease relinquishment as a compensatory mitigation tool is a form of protection and is generally only appropriate for those leases in priority habitat with high-value GRSG habitat that also has a high potential and likelihood for development. The BLM is working on a manual and handbook on mitigation that are expected to address mitigation, including compensatory mitigation, in more detail.

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[7] 30 U.S.C. § 226 (A) ("Leases shall be issued within 60 days following payment by the successful bidder of the remainder of the bonus bid, if any, and the annual rental for the first lease year.")

[8] See Department Manual 600 DM 6, "Implementing Mitigation at the Landscape-scale" (October 23, 2015). See also Presidential Memorandum entitled "Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment" (November 3, 2015).

[9] *.....the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species. This would include accounting for any uncertainty associated with the effectiveness of such mitigation in PHMAs and GHMAs (except for the Wyoming, where this requirement only applies in PHMAs).* (Rocky Mountain Region ROD, page 1-27; and as described in *Wyoming ARMPA, MD GMD 2, page 26).* Furthermore, the Wyoming RMP *requires a net conservation gain for sage-grouse populations and habitats, consistent with the State of Wyoming Core Area Strategy.* (see Wyoming ARMP, page 20.)

The GRSG Plans also provide guidance on appropriate mitigation. (See Mitigation Appendix in your Plans). BLM state offices will work with WO-310 as relinquishments are implemented until additional guidance is finalized.

- Lease Suspensions: The BLM is authorized to suspend all operations and production by direction or consent in the interest of conservation of natural resources. Accordingly, the Authorized Officer may consent to or direct lease suspensions where it is determined to be in the interest of the conservation of GRSG populations and habitats.[10] For example, a lease suspension might be considered if disturbance and density caps have been exceeded within a lease or to allow for the satisfactory restoration of existing surface disturbances within a PHMA before considering new operations in the PHMA that may meet or exceed a surface disturbance limitation under the approved Plans.

- Lease Reinstatements: When deciding whether to approve or deny a request for lease reinstatements, the Authorized Officer will consider the *Prioritization sequence*, whether the land is open to leasing under the approved Plans, whether it is in a PHMA or GHMA, and if the existing lease terms will remain in compliance with the conservation objectives and provisions of the GRSG Plans. If a lease reinstatement is approved, the stipulations of the GRSG Plans must be applied. If a lease reinstatement is denied, those lands may or may not be precluded from later consideration for leasing, in accordance with the authorizing officer's discretion to determine which public lands will be offered at a lease sale, but will be subject to the prioritization sequence policy described above.

- In GRSG habitat it is especially important to continue to follow the standard operating procedure in H-3101-7 when inspecting wells and verifying drilling diligence on leases potentially eligible for a lease extension[11] before the date of potential lease expiration[12].

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[10] See 30 U.S.C. § 209 ("In the event the Secretary of the Interior, in the interest of conservation, shall direct or shall assent to the suspension of operations and production under any lease granted under the terms of this Act . . . ."); see also 43 CFR § 3103.4-4(a) ("A suspension of all operations and production may be directed or consented to by the Authorized Officer only in the interest of conservation of natural resources."). Federal courts have recognized that the phrase "in the interest of conservation," as used in Section 39 of the Mineral Leasing Act (30 U.S.C. § 209), includes the prevention of environmental harm. See *Copper Valley Machine Works, Inc. v. Andrus*, 653 F.2d 595, 602 (D.C. Cir. 1981); see also *Hoyl v. Babbitt*, 129 F.3d 1377, 1380 (10th Cir. 1997).

[11] Lease extension by drilling is only authorized for actual drilling operations that were commenced prior to and being **diligently** conducted over the expiration date of the primary term of the lease. See 43 CFR § 3107.1.

[12] (1) review the well drilling program to confirm it is designed to test and produce from at least one potentially productive oil and/or gas formation, (2) conduct a field inspection of the drilling location before the lease expiration date to verify actual drilling, and (3) ensure the well meets the criteria established in H 3107-1.

- Where a lease in PHMA or GHMA has expired because the primary term has elapsed and no drilling has occurred (or where the lease is not held by production[13]), the BLM will not re-offer these parcels, and may only consider offering such lands if and when an EOI is submitted and the BLM determines it is appropriate to lease the lands if located in areas open to leasing under the approved Plans. Future leasing of the lands will be considered under the sequential prioritization approach described above, including the *Factors to be Considered While Evaluating EOIs* and provided that the new stipulations from the GRSG land use Plans are attached to the lease.

- In GRSG habitat, when making a decision to cancel a lease for failure to comply with lease terms, the bond must remain in force and effect until all rents and royalties have been paid and final abandonment of all wells, including reclamation, has been approved. (H3108-1, H-3104 pg107, and 43 CFR § 3100).

Configuration of Quarterly Lease Sales from BLM-Identified Lands and EOIs

BLM state offices will take into account the EOIs, the GRSG plan decisions and goals, this prioritization sequence policy, other resource values, and workload capacity in configuring quarterly lease sales. This approach will allow for quarterly sales consistent with the conservation objectives and provisions in the GRSG Plans.

Required Coordination when Leasing within a PHMA or GHMA is Proposed

Prior to NEPA Comment Period
For each lease sale that includes parcels intersecting PHMAs or GHMAs, State Directors will provide a *Preliminary Lease Sale Summary* to WO-300 (cc WO-310) as soon as is feasible and at least 15 days prior to the date the first NEPA documentation for the lease sale is posted or released for public comment. A template with the information necessary for State Directors to include in the *Preliminary Lease Sale Summary* is included in Attachment 1.

Prior to Holding a Lease Sale
In addition, after any protests are received and as soon as is feasible, but at least 15 days before a lease sale is held, State Directors will provide a briefing memo to the WO-300 (cc WO-310) contact that includes a summary of any lease sale parcel protests related to GRSG (including protests addressing plan conformance and NEPA compliance when related to GRSG decisions, habitats, and populations). A briefing paper template is included in Attachment 2.

B. Development: Sequential Prioritization of Permit Processing for Oil and Gas Development and Operations in Proximity to PHMAs and GHMAs

[13] Includes primary term leases, as well as, suspension of operations and production on leases with wells capable of production. See 43 CFR § 3103.4-4.

As described above, an objective of this policy is to sequentially prioritize the leasing and development of oil and gas resources on public lands outside of GRSG habitat based on the GRSG Plans' conservation goals to avoid or limit new surface disturbance in Priority Habitat Management Areas (PHMAs) and minimize surface disturbance in General Habitat Management Areas (GHMAs). Similar to the way that leasing is handled above, BLM field offices will process Notices of Staking (NOSs)/Applications for Permit to Drill (APDs) or Sundry Notices that involve ground disturbance (referred to collectively as "permits" in this section) for wells that are proposed to be located outside of GHMAs and PHMAs first, then within GHMAs, then within PHMAs, and lastly, within PHMAs that may contain SFAs.

***Prioritization Sequence* for Permits for Oil and Gas Development and Operations in or near GRSG Habitats**

When processing permits for oil and gas development and operations in or near GRSG habitat, follow this prioritization sequence:

1. Lands outside PHMAs/GHMAs: The BLM will encourage development outside of PHMAs/GHMAs by working with operators to focus their development proposals away from GRSG habitats.

2. Lands in GHMAs: Authorized Officers will use the prioritization sequence to meet the conservation objectives and provisions in the GRSG land use Plans by encouraging development in GHMA before development in PHMA, by taking into consideration the factors and existing prioritizations (as detailed below) GRSG land use Plans when processing permits for well locations.

3. Lands in PHMA: Authorized Officers will use the prioritization sequence to meet the conservation objectives and provisions in the GRSG land use Plans by encouraging development, first outside of GHMA/ PHMA, and then in GHMA, before development in PHMA, while taking into consideration the factors and existing prioritizations (as detailed below) when processing permits for well locations.

Prioritization Factors to Consider (but not limited to and not in any particular order):

- Well locations in an area with existing production facilities and surface disturbance should be more appropriate for consideration before well locations that are not immediately adjacent or proximate to existing operations.
- Well locations within a Federal oil and gas unit should be more appropriate for consideration than well locations not within existing Federal oil and gas units.
- Well locations within areas having completed field-development Environmental Impact Statements or Master Development Plans that allow for adequate site-specific mitigation and conformance with the GRSG land use Plans may be more appropriate for consideration than well locations that have not been evaluated by the BLM in this manner.

- Well locations in areas of lower-value GRSG habitat or distant from important life-history habitat features (for example, distant from any active GRSG leks) may be more appropriate for consideration than well locations in higher-value habitat or closer to important life-history habitat features.
- Well locations anticipated to result in a net conservation gain may be more appropriate for consideration . Approval of a permit may also occur in response to applicable law or regulations (including drainage cases or to ensure that the BLM honors valid existing rights). Conditions of Approval (COAs) attached to the permit should include all appropriate conservation objectives and mitigation requirements, such as required design features (RDF) from the GRSG land use Plans.[14]
- As appropriate, use SDARTT to check "project analysis areas"[15] in PHMA and SFA, to ensure that existing surface disturbance does not exceed the disturbance and density caps and that development of valid existing rights (Solid Minerals, Rights-Of-Way, etc.) for approved-but-not-yet-constructed surface disturbing activities would exceed the caps.

Existing Prioritizations:

BLM field offices should integrate the above prioritization sequence in their processing of pending permits as they consider the overall workload to fairly and objectively address their permitting prioritization. Only insofar as they are consistent with the prioritization approach described in this IM, BLM field offices may also take into consideration other prioritization considerations, such as considering permitting on a first-in/first-out basis to the extent possible, unit obligation wells, the efficiency to be gained in processing the easiest to complete first, the operator's drilling Plans, workload capacities, and other resource values.

Development and Restoration within PHMAs/GHMAs

Where a proposed fluid mineral development project on an existing lease could adversely affect GRSG populations or habitat, the BLM will work with appropriate stakeholders, including the U.S. Fish and Wildlife Service, relevant State agencies, lessees, operators, or other project proponents to avoid, minimize, and compensate for unavoidable adverse impacts to sage-grouse or its habitat. The BLM will ensure that the best information about the GRSG and its habitat informs and guides development of such Federal leases to the extent compatible with lessees' rights to drill and produce fluid mineral resource with proper application of stipulations and conditions of approval.

When considering an NOS/APD or Sundry Notice involving ground disturbance activities proposed in PHMA and/or GHMA (even for leases issued prior to finalization of the GRSG land use Plans), the Authorized Officer will consider the BLM's environmental record of review. See 43 CFR § 3162.5-1(a). The environmental record of review includes appropriate documentation of NEPA compliance, alternatives that would implement the conservation measures described in the GRSG land use Plans, and applicable Best Management Practices (BMP) and Required

[14] Refer to footnote #9.

[15] Methodologies may vary from state to state. For example, Colorado uses Management Zones and Oregon uses Priority Areas for Conservation

Design Features (RDF); consistent with applicable regulations. If the Authorized Officer determines that the potential environmental impacts could be significant, the Authorized Officer will prepare an Environmental Impact Statement. In all cases, as the GRSG Plans decisions acknowledge (see RM ROD at page 2-2, GB ROD at page 2-2), the BLM must honor valid existing rights, such as in cases where the BLM issued a lease prior to the GRSG land use plan with terms and stipulations that may be different from those provided for in the GRSG land use plan. In addition, the BLM also has the authority to apply reasonable conditions of approval. 43 CFR § 3101.1-2.

The Authorized Officer will continue to work with all operators to plug idle wells, timely restore well sites with appropriate GRGS habitat seed mixes, reclaim roads, and enhance habitat (e.g., reduce fragmentation), with a restoration emphasis in GRSG habitat areas to support conservation goals. In addition, the Authorized Officer will be cognizant of sundry notices of operations that may be considered disruptive activities within GRSG habitats.

When the BLM receives an APD involving a well that is within a GRSG habitat area, but on Tribal Trust or allotted lands under BIA jurisdiction, the BLM will coordinate with the BIA and affected tribe(s).

Timeframe: This IM is effective immediately.

Budget Impact: Given the conservation challenges and the land management responsibilities, this policy will result in additional costs for increased planning, coordination, NEPA review, GIS, responding to administrative challenges, and associated program costs. It is anticipated that performance targets/units of accomplishment for the resource programs will adjust to reflect the added complexities and responsibilities. Timelines for wells within GRSG habitat may take longer to permit; however wells outside of habitat will be prioritized for processing.

Background: On September 21, 2015, the Department of the Interior and the BLM approved the GRSG RODs. Concurrently, the BLM amended or revised the Plans in GRSG habitat to provide conservation measures protective of GRSG and their habitats.

Along with other guidance being issued and prepared by the BLM, this IM serves to provide policy direction for the implementation of the GRSG land use Plans. This IM also satisfies the BLM's commitment in the GRSG ROD's to provide policy direction based on the objective of prioritizing oil and gas leasing and development outside of PHMAs and GHMAs. (See, e.g., Rocky Mountain ROD at page 1-40, GB ROD at page 1-41, "...additional guidance will be provided to clarify how the BLM will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat.") The final Approved Plans also included a decision that provided:

> Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, and subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in

the least suitable habitat for GRSG. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).[16]

This IM and its attachments provide guidance to BLM Authorized Officers and field personnel to facilitate consistent implementation of these Plans decisions.

Manual/Handbook Sections Affected: None.

Coordination: This IM was coordinated with the U.S. Department of the Interior, Office of the Solicitor; BLM State Offices; the Renewable Resources and Planning Directorate; and the Energy, Minerals and Realty Management Directorate.

Contact: If there are any questions concerning this IM, please contact Michael D. Nedd, Assistant Director, Energy, Minerals and Realty Management (WO-300), at 202-208-4201. Your staff may also contact Steven Wells, Division Chief, Division of Fluid Minerals (WO-310), at 202-912-7143 or s1wells@blm.gov.

2 Attachments

1- *Preliminary Lease Sale Summary* Template (1p)

2- Lease Sale in Greater Sage-Grouse Habitats Briefing Paper Template (1p)

[16] For example, see the BLM-Utah's Approved RMP Amendment – Attachment 4 to the GB ROD at page 2-25, Objectives MR-1 and MR-2. Similar language can be found in each of the RMPs.

Attachment 1 – *Preliminary Lease Sale Summary* Template - Prior to NEPA Comment Period

The *Preliminary Lease Sale Summary* will include:

- ✓ State Office/planning area(s) and date of lease sale
- ✓ Anticipated date that the NEPA documentation (EA or DNA) will be posted for public review
- ✓ Total number and acreages of parcels considered in the lease sale
- ✓ Total number and acreages of parcels intersecting Greater Sage-Grouse habitat, General Habitat Management Areas (GHMAs), and Priority Habitat Management Areas (PHMAs) in the lease sale
- ✓ Anticipated date that the Notice of Competitive Lease Sale will be published and posted for public review
- ✓ Date the protest period ends
- ✓ Map(s) illustrating the location of all parcels, with the following overlays:
    - GHMAs and PHMAs
        - Pertinent surface disturbance and reclamation data as available.
    - If available, existing Federal oil and gas leases (differentiating those held by production) and wells. If available, please include information related to non-BLM administered oil and gas leases and wells.
        - For Federal wells, which can be numerous, we are requesting locations of active oil and gas wells that have been constructed or spud; this would not include plugged and abandoned wells.
    - Federal oil and gas unit boundaries
    - Field-development Environmental Impact Statement boundaries
    - Master Leasing Plan boundaries
    - Oil and gas development potential maps
    - Locations of known sage-grouse leks protective buffers
    - State Offices should use scale(s) that will allow the maps to be viewed and understood.

Attachment 2 – Lease Sale Protests in Greater Sage-Grouse Habitats Briefing Paper Template

BRIEFING MEMORANDUM FOR THE ASSISTANT DIRECTOR – ENERGY, MINERALS, AND REALTY MANAGEMENT

DATE: [Date memo submitted to AD300 and AD310]

FROM: Applicable State Director [Name, title, and applicable state]

SUBJECT: [Insert state] State Office [Insert scheduled date of sale] Oil and Gas Lease Sale
Statement of purpose: Inform AD300 and AD310 about the upcoming oil and gas lease sale in relation to protests that involve Greater Sage-Grouse and Greater Sage-Grouse habitat.

BACKGROUND
Summarize key information from the *Preliminary Lease Sale Summary*. For example:
On September 28, 2015, the XXX State Office posted the environmental assessment (EA) for the February 11, 2016 oil and gas lease sale for public review and comment. The EA analyzed the offering of up to 50 parcels totaling approximately 112,500 acres as part of the sale. Of this, 20 parcels totaling approximately 45,000 acres intersect Greater Sage-Grouse General Habitat Management Areas and 10 parcels totaling approximately 22,500 acres intersect Greater Sage-Grouse Priority Habitat Management Areas. Parcels that will be offered at the sale fall within the X, Y, and Z Plans planning areas for which applicable oil and gas lease stipulations from these Plans were attached to the appropriate parcels. The protest period for the lease sale ended on December 28, 2015.

DISCUSSION
In the briefing memo, please identify potential sage-grouse related impacts and controversies associated with the parcels listed in the Sale Notice. The discussion should address the following:

a) Has the proposed sale generated any controversy with the State/Governor or the public?
b) Provide a hyperlink to the BLM external website with the BLM's NEPA compliance documentation for the lease sale (EA or DNA).
c) How many parcels (and acres) have been protested because of sage-grouse issues?
d) Who filed these protests?
e) What are the protester(s) main arguments related to sage-grouse issues?

NEXT STEPS
Describe how the State Office anticipates answering the protests.

ATTACHMENTS
N/A. However, please feel free to attach additional maps (other than what has already been provided through the *Preliminary Lease Sale Summary*).

EXHIBIT B

CONCURRENT RESOLUTION URGING CONGRESS TO SUPPORT THE IMPLEMENTATION OF THE UTAH'S SAGE-GROUSE CONSERVATION PLAN

CONCURRENT RESOLUTION URGING CONGRESS TO SUPPORT THE IMPLEMENTATION OF THE STATE'S SAGE-GROUSE CONSERVATION PLAN

2015 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Kevin T. Van Tassell

House Sponsor: Scott D. Sandall

LONG TITLE

General Description:

This concurrent resolution of the Legislature, the Governor concurring therein, urges Congress to support the state's sage-grouse conservation plan.

Highlighted Provisions:

This resolution:

- urges Congress to provide no funding to the United States Secretary of the Interior to consider, prepare, write, or issue a petition finding or proposed regulation for greater sage-grouse management through fiscal year 2025;
- resolves that the state implement its sage-grouse conservation plan; and
- urges Congress to enact legislation recognizing and encouraging state primacy in the long-term management of sage-grouse and its habitat.

Special Clauses:

None

Be it resolved by the Legislature of the state of Utah, the Governor concurring therein:

WHEREAS, the state of Utah is committed to the conservation of greater sage-grouse (Centrocercus urophasianus) and its present habitat located within the state;

WHEREAS, the state of Utah has produced a statewide sage-grouse conservation plan in support of this commitment;

WHEREAS, the Division of Wildlife Resources in the Department of Natural

Resources possesses significant expertise in the management of greater sage-grouse and its habitat, and experts in the division have been working extensively in full cooperation with the federal agencies managing federal lands within the borders of the state;

WHEREAS, the Endangered Species Act requires the Unites States Secretary of the Interior to take into account the state of Utah's efforts to protect greater sage-grouse prior to the Secretary's determination that the species is endangered or threatened;

WHEREAS, implementation of the state's conservation plan will produce scientific data related to disease or predation of the species, the adequacy of existing regulatory mechanisms, and other natural or human-influenced factors affecting the species' existence, all of which must be considered by the United States Fish and Wildlife Service in making a determination whether to list greater sage-grouse as threatened or endangered under the Endangered Species Act;

WHEREAS, categorical exclusions from the National Environmental Policy Act are necessary to allow the federal land management agencies to remove pinyon-juniper trees that are harmful to greater sage-grouse habitat;

WHEREAS, the state of Utah wishes to continue its collaboration with other states possessing current habitat for greater sage-grouse;

WHEREAS, the United States Congress and the President of the United States are to be commended for recognizing the unprecedented collaboration among the various states regarding greater sage-grouse conservation and the need to continue on-the-ground conservation and monitoring activities, as recognized through the enactment of Section 122 of the Consolidated and Further Continuing Appropriations Act of 2015; and

WHEREAS, time is needed to finalize and implement the state conservation plan over a period of multiple, consecutive sage-grouse life cycles to determine the efficacy of the plan and the need for modification, if any:

NOW, THEREFORE, BE IT RESOLVED that the Legislature of the state of Utah, the Governor concurring therein, urges Congress to provide no funding to the United States Secretary of the Interior to consider, prepare, write, or issue, pursuant to Section 4 of the

Endangered Species Act of 1973 (16 U.S.C. Sec. 1533), a petition finding or proposed regulation for greater sage-grouse for a period of 10 years through and including fiscal year 2025.

BE IT FURTHER RESOLVED that during this period, the state of Utah will implement its sage-grouse conservation plan, thereby establishing and enhancing its efficacy over time.

BE IT FURTHER RESOLVED that the Legislature of the state of Utah, the Governor concurring therein, urges Congress to enact legislation recognizing and encouraging state primacy in the long-term management of sage-grouse and its habitat to ensure an effective and balanced approach that seeks to recover and protect sage-grouse populations while protecting state economic interests, educational funding from state lands, and valid existing rights, including private property rights.

EXHIBIT C

SAGE GROUSE INITIATIVE
SCIENCE TO SOLUTIONS
CONIFER REMOVAL BOOSTS
SAGE GROUSE SUCCES

Science to Solutions

Conifer Removal Boosts Sage Grouse Success

In Brief: In recent years the Sage Grouse Initiative, led by the USDA's Natural Resources Conservation Service, has worked with many partners to accelerate the mechanical removal of invading conifer trees, primarily junipers, to restore sagebrush habitats in and around sage grouse strongholds across the West. Replicated studies from public and private land in southern Oregon and northwest Utah are the first to document sage grouse response to this type of landscape-level habitat restoration effort. Despite conventional wisdom that female sage grouse use the same nesting areas every year, space-starved hens in Oregon were quick to use restored habitats made available by conifer removal: within four years, 29% of the tracked sage grouse were nesting within and near restored habitats. In Utah, 86% of hens avoided conifer invaded habitats, and those using restored habitats were more likely to raise a brood. Taken together, studies show that landscape-level conifer removal can effectively increase habitat availability and boost success for nesting and brooding sage grouse.

Removing invading conifers in otherwise high-quality sagebrush habitat is a boon to nesting sage grouse, as in this landscape in the Warner Valley, southern Oregon, before (left) and after (right) restoration. Photos courtesy of Todd Forbes, Bureau of Land Management.

Invaders in the Sage

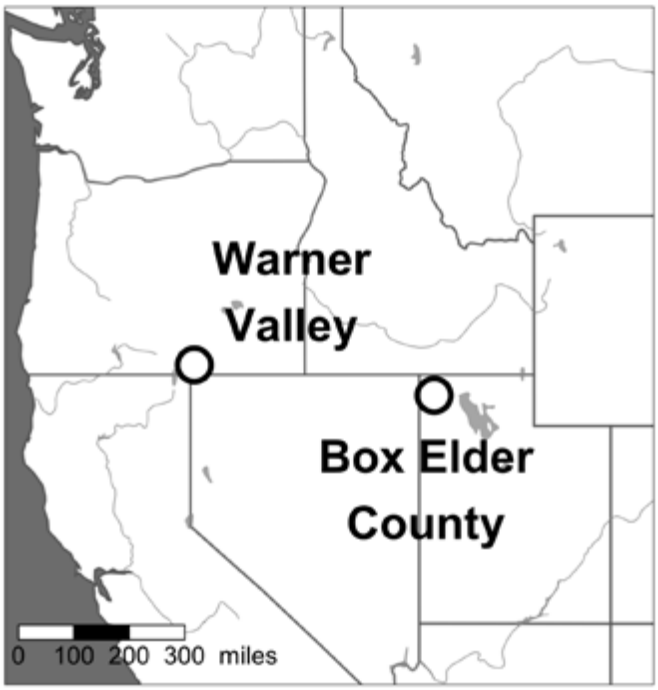
The encroachment of conifers (mostly juniper species and pinyon pine) into sagebrush habitats is one of several major causes of sage grouse declines. Although native, these trees have spread into millions of acres of sagebrush habitats due to a combination of 100 years of fire suppression, historic overgrazing, and a changing climate. As trees spread into sagebrush, predation may increase because the trees provide new nest sites and perches to raptors, ravens, and other birds that prey on sage grouse, eggs, and chicks. Conifers also alter sagebrush habitats by robbing native shrubs and understory plants of water and nutrients and drying up streams, springs, and seeps. The result is a widespread degradation of healthy sagebrush habitats.

Even just a few trees scattered across the landscape in the earliest stage of conifer encroachment (called Phase I) can impact grouse. An Oregon study found that where conifers

cover only 4% of the landscape, grouse abandon their courtship leks (Baruch-Mordo et al. 2013; and see **Sage Grouse Initiative Science to Solutions No. 2**). Although sage grouse still use Phase I landscapes, their survival may be lower when compared to sagebrush-dominated habitats because of the increased abundance of predators. In essence, sagebrush habitats with even a few conifers serve as death traps for grouse—areas biologists call "population sinks" because they cannot sustain the species (Prochazka et al. in press; Coates et al. in press).

In a range-wide effort, land managers have collaborated to restore the quality of the habitat on working sagebrush landscapes by removing invasive conifers across public and private lands. These projects focus on removing invading conifers in and around sage grouse strongholds. Biologists initially reasoned that bird response to habitat restoration would be a slow process because sage grouse show strong fidelity to nest sites (hens using the same nesting areas year after year).

Yet two parallel studies in the Great Basin show a different story—apparently grouse know good habitat when they see it. These two studies examined sage grouse response to conifer removal in watershed-scale restoration projects, and confirmed that grouse benefit almost immediately when the trees come down.

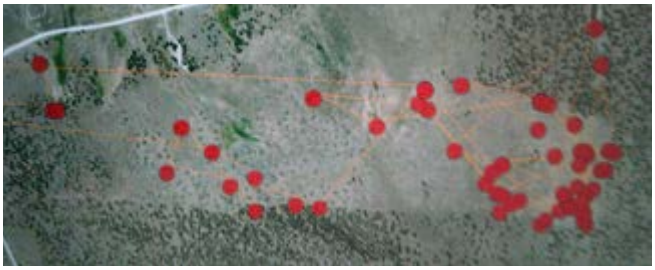


Two recent, independent studies near the Warner Valley in Oregon and in Box Elder County, Utah confirm that sage grouse directly benefit from large-scale mechanical removal of invasive conifers. Map by SGI.

Moving into the New Neighborhood

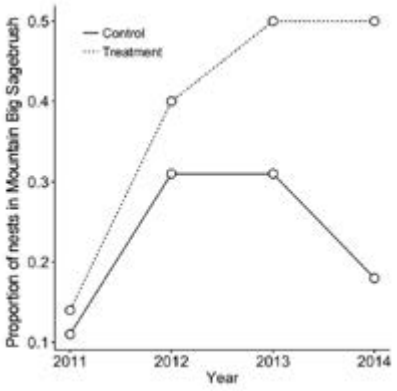
How quickly will sage grouse nest in restored habitats where invading conifers have been removed? To answer this question, John Severson of the University of Idaho and his colleagues set up a treatment and control field study near the Warner Valley on the Oregon/Nevada border (Severson et al. in press). The study compared two large landscapes of mountain big sagebrush and western juniper. An untreated control area (>98,800 acres) scattered with invading juniper was compared to a treatment area (>84,000 acres) where large patches of juniper, totaling 20% of the landscape, were removed to restore the entire watershed to sagebrush habitat suitable for nesting grouse. Because the impact of invading conifers extends beyond the trees themselves, removing encroaching trees helps restore the habitat quality of a much larger area of the sagebrush landscape than just the stands that are cut.

From 2009 to 2014, the researchers then radio-collared and tracked 153 hens in the treatment study area and 117 hens in the control area, which allowed them to locate more than 260 nests and determine where hens were choosing to nest.



GPS locations recorded for this single female grouse in the Warner Valley show how the bird prefers a newly restored sagebrush habitat recently cleared of invading conifers. Image courtesy of Andrew Olsen, graduate student under Professor Christian Hagen at Oregon State University, who is continuing long-term monitoring of sage grouse response at these sites.

> *"The speed at which these space-starved birds colonize our sagebrush restorations is remarkable, and their increased performance is the ultimate outcome in science-based conservation."*
>
> ~Charles Sandford, former Graduate Student, Utah State University, and current SGI Partner Biologist, Tremonton, Utah.



In the large landscape that was treated with conifer removal, 29% of radio-tagged female sage grouse nested in newly restored habitat. Hens did not increase nesting in the untreated control landscape, where conifers remained. Chart courtesy Severson et al.

It became immediately apparent that sage grouse hens were starved for good sagebrush nesting habitat, and removing the trees creates more usable space. Despite conventional wisdom that female grouse are strongly tied to the same nesting sites every year, sage grouse hens were quick to consider restored habitat nearby, and nested both in and near sagebrush stands cleared of juniper. Within two to four years after juniper cutting, sage grouse moved in to cut areas, and the probability of nesting in and near treated sites increased 22% each year after cutting. After four years, the number of sage grouse nesting in and near the restored areas increased 29% (relative to the control area). Additionally, birds were much more likely to nest in or near restored sites: for every 0.6 miles from a cut area, the probability of nesting decreased 43%. In short, removing junipers dramatically increased the availability of nesting habitat, and hens proved quite willing to take advantage of good habitat as it became available.

A Boost in Nest and Brood Success

Charles Sandford of Utah State University and his colleagues asked how conifer removal in sagebrush habitats might affect the success of sage grouse nests and broods (Sandford et al. in press). Their study area in the Box Elder Sage Grouse Management Area (SGMA) is home to one of the largest and most stable sage grouse populations in Utah.

Covering 256,000 acres, the project area hosts both big and small sagebrush species, and a mix of native bunchgrasses and forbs. Since 2008, managers have mechanically removed invading conifers on more than 20,000 acres to improve sagebrush habitat.

From 2012 to 2015, the biologists tracked 96 radio-tagged sage grouse hens to find and determine the fate of nests. They discovered that the distance between nests and restored habitat predicted success: nest success declined with every 0.6 miles farther away from restored habitat. (In one documented instance, a marked female nested within a treatment even before mechanical harvesters had completed the cut, and then successfully hatched a brood; Sandford et al. 2015).

Clearing conifers from more than 20,000 acres of the Box Elder Sage Grouse Management Area increased sage grouse nest and brood success. Photo courtesy of Charles Sandford, Utah State University.

The researchers also tracked 56 broods, observing their movements and survival. Most hens (86%) kept broods close to restored habitats and avoided areas with trees, and hens that used areas cleared of conifers were most likely to successfully fledge their broods. This is the ultimate measure of success of habitat restoration: more chicks surviving to boost the next generation of sage grouse.

Clearing the Way for Success

The Sage Grouse Initiative, led by the USDA's Natural Resources Conservation Service, and its many partners have completed conifer restoration projects on more than a half million acres across the West. Utah's Watershed Restoration Initiative has restored another half million acres, and the Bureau of Land Management is now investing heavily in sagebrush habitat restoration across the species' range.

Where conifers invade, grouse appear to be lacking enough quality nesting and brood-rearing habitat. These new studies demonstrate that sage grouse know good nesting habitat when they see it, and collaborative, large-scale sagebrush restoration can benefit sage grouse within a relatively short time.

> *"Most impressive to me is the foresight and planning across state and federal agencies that resulted in these watershed-scale restorations. BLM is now squarely focused on replicating this partner-based model in priority landscapes throughout the West."*
>
> ~Steve Small, Division Chief, Fish and Wildlife Conservation, Bureau of Land Management, Washington, D.C.

Use SGI's New Web Tool for Restoration Planning

Interested in planning a sagebrush habitat restoration across your landscape? The Sage Grouse Initiative has a new web tool that maps tree canopy cover in high-resolution across sage grouse range, since removing expanding conifers is a primary focus of SGI's conservation investment strategy. The map tool allows managers and planners to zoom in on a local site or scale up to a county or state. The raster data is free to download to your GIS for planning and conservation. Visit SGI's new web tool at **http://map.sagegrouseinitiative.com/**

Contacts

- Christian Hagen, Oregon State University: christian.hagen@oregonstate.edu
- Terry Messmer, Utah State University: terry.messmer@usu.edu

Principal Student Investigators

- John P. Severson, University of Idaho
- Charles Sandford, Utah State University

Graduate students John Severson, University of Idaho, and Charles Sandford, Utah State University, documented increases in nesting and brood success after sagebrush habitat was restored by removing encroaching conifers.

Please Cite As

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January 2017

Sources

Baruch-Mordo, S., J.S. Evans, J.P. Severson, D.E. Naugle, J.D. Maestas, J.M. Kiesaecker, M.J. Falkowski, C.A. Hagan, and K.P. Reese. 2013. Saving sage-grouse from the trees: a proactive solution to reducing a key threat to a candidate species. Biological Conservation 167:233-241.

Coates, P.S., B.G. Prochazka, M.A. Ricca. K.B. Gustafson, P. Ziegler and M.L. Casazza. In Press. Pinyon and juniper encroachment into sagebrush ecosystems impacts distribution and survival of greater sage-grouse. Rangeland Ecology and Management.

Prochazka, B.G., P.S. Coates, M.A. Ricca, M.L. Casazza and J.M. Hull. In Press. Conifer expansion in sagebrush ecosystems affects movement and survival of greater sage-grouse. Rangeland Ecology and Management.

Sage Grouse Initiative. 2014. Conifer Removal Restores Sage Grouse Habitat. Science to Solutions Series No.2. Sage Grouse Initiative, 4pp.

Sandford, C., D.K. Dahlgren, and T.A. Messmer. 2015. Sage-grouse nests in an active conifer mastication site. Prairie Naturalist 47:115-116.

Sandford, C. M.T. Kohl, T.A. Messmer, D.K. Dahlgren, A. Cook, and B.R. Wing. In Press. Greater sage-grouse resource selection drives reproductive fitness in conifer removal system. Rangeland Ecology and Management.

Severson, J.P., C.A. Hagen, J.D. Maestas, D.E. Naugle, J. Todd Forbes, and K.P. Reese. In Press. Short-term response of sage-grouse nesting conifer removal in the northern Great Basin. Rangeland Ecology and Management.

Learn More

The Sage Grouse Initiative, led by the USDA's Natural Resources Conservation Service, is a partnership-based, science-driven effort that uses voluntary incentives to proactively conserve America's western rangelands, wildlife, and rural way of life.

To learn more, visit **www.sagegrouseinitiative.com.**

EXHIBIT D

SECTION 2862 OF THE NATIONAL DEFENSE AUTHORIZATION ACT

H.R. 1735—FY16 NATIONAL DEFENSE AUTHORIZATION BILL

CHAIRMAN'S MARK

*NOTE: THE SUMMARY TABLES ARE INFORMATIONAL ONLY AND WILL BE INCLUDED AS PART OF THE COMMITTEE REPORT.

TITLE XXVIII—MILITARY CONSTRUCTION GENERAL PROVISIONS

LEGISLATIVE PROVISIONS

SUBTITLE B—REAL PROPERTY AND FACILITIES ADMINISTRATION

Section 2813—Additional Master Plan Reporting Requirements Related to Main Operating Bases, Forward Operating Sites, and Cooperative Security Locations of Central Command and Africa Command Areas of Responsibility

This section would amend section 2687a(a) of title 10, United States Code, by adding a requirement for the Secretary of Defense to include with the existing overseas basing report a strategic summary for each main operating base, forward operating site, or cooperative security location within the U.S. Central Command and U.S. Africa Command area of responsibility. This section would sunset in fiscal year 2020.

SUBTITLE E—MILITARY LAND WITHDRAWALS

Section 2841—Withdrawal and Reservation of Public Land, Naval Air Weapons Station China Lake, California

This section would provide for the withdrawal and reservation of additional public land in San Bernardino County, California, to support operations at Naval Air Weapons Station China Lake, California.

SUBTITLE G—OTHER MATTERS

Section 2861—Modification of Department of Defense Guidance on Use of Airfield Pavement Markings

This section would require the Secretary of Defense to modify the Unified Facilities Guide Specifications for pavement markings, an Air Force engineering technical letter, and any other Department of Defense guidance on airfield pavement markings as necessary to permit the use of Type III category of retro-reflective beads. In addition, the Secretary shall develop appropriate policy to ensure that determination of the category of retro-reflective beads used on airfields is determined on an installation-by-installation basis based on local conditions and the life-cycle maintenance costs of the pavement markings.

Section 2862—Protection and Recovery of Greater Sage Grouse

This section would delay any finding by the Secretary of the Interior with respect to the Greater Sage Grouse under clause (i), (ii), or (iii) of section 4(b)(3)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1533(b)(3)(B)) through September 30, 2025. In an effort to foster greater coordination between the States and the Federal Government regarding management plans for the Greater Sage Grouse, this section would prohibit the Secretary of the Interior and the Secretary of Agriculture from amending any Federal resource management plan applicable to Federal lands in a State in which the Governor of the State has notified the Secretaries concerned that the State has a State management plan in place. Lastly, this section would also require the Secretary of the Interior and the Secretary of Agriculture to jointly submit an annual report to the Committee on Natural Resources of the House of Representatives on the effectiveness of the systems to monitor the status of Greater Sage Grouse on Federal lands under their jurisdiction through 2021.

DIVISION C—DEPARTMENT OF ENERGY NATIONAL SECURITY AUTHORIZATIONS AND OTHER AUTHORIZATIONS

TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS

LEGISLATIVE PROVISIONS

SUBTITLE A—NATIONAL SECURITY PROGRAMS AUTHORIZATIONS

Section 3101—National Nuclear Security Administration

This section would authorize appropriations for the National Nuclear Security Administration for fiscal year 2016, including funds for weapons activities, defense nuclear nonproliferation programs, naval reactor programs, and Federal Salaries and Expenses (formerly known as the Office of the Administrator), at the levels identified in section 4701 of division D of this Act. This section would also authorize a new plant project for the National Nuclear Security Administration.

Section 3102—Defense Environmental Cleanup

This section would authorize appropriations for defense environmental cleanup activities for fiscal year 2016, at the levels identified in section 4701 of division D of this Act.

Section 3103—Other Defense Activities

SEC. 2862 [Log 60798]. PROTECTION AND RECOVERY OF GREATER SAGE GROUSE.

(a) DEFINITIONS.—In this section:

(1) The term ''Federal resource management plan'' means—

(A) a land use plan prepared by the Bureau of Land Management for public lands pursuant to section 202 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712); or

(B) a land and resource management plan prepared by the Forest Service for National Forest System lands pursuant to section 6 of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1604).

(2) The term ''Greater Sage Grouse'' means a sage grouse of the species *Centrocercus urophasianus*.

(3) The term ''State management plan'' means a State-approved plan for the protection and recovery of the Greater Sage Grouse.

(b) PURPOSE.—The purpose of this section is—

(1) to facilitate implementation of State management plans over a period of multiple, consecutive sage grouse life cycles; and

(2) to demonstrate the efficacy of the State management plans for the protection and recovery of the Greater Sage Grouse.

(c) ENDANGERED SPECIES ACT OF 1973 FINDINGS.—

(1) DELAY REQUIRED.—Any finding by the Secretary of the Interior under clause (i), (ii), or (iii) of section 4(b)(3)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1533(b)(3)(B)) with respect to the Greater Sage Grouse made during the period beginning on September 30, 2015, and ending on the date of the enactment of this Act shall have no force or effect in law or in equity, and the Secretary of the Interior may not make any such finding during the period beginning on the date of the enactment of this Act and ending on September 30, 2025.

(2) EFFECT ON OTHER LAWS.—The delay imposed by paragraph (1) is, and shall remain, effective without regard to any other statute, regulation, court order, legal settlement, or any other provision of law or in equity.

(3) EFFECT ON CONSERVATION STATUS.—Until the date specified in paragraph (1), the conservation status of the Greater Sage Grouse shall remain warranted for listing under the Endangered Species Act

of 1973 (16 U.S.C. 1531 et seq.), but precluded by higher-priority listing actions pursuant to clause (iii) of section 4(b)(3)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1533(b)(3)(B)).

(d) COORDINATION OF FEDERAL LAND MANAGEMENT AND STATE CONSERVATION AND MANAGEMENT PLANS.—

(1) PROHIBITION ON MODIFICATION OF FEDERAL RESOURCE MANAGEMENT PLANS.—In order to foster coordination between a State management plan and Federal resource management plans that affect the Greater Sage Grouse, upon notification by the Governor of a State with a State management plan, the Secretary of the Interior and the Secretary of Agriculture may not amend or otherwise modify any Federal resource management plan applicable to Federal lands in the State in a manner inconsistent with the State management plan for a period, to be specified by the Governor in the notification, of at least five years beginning on the date of the notification.

(2) RETROACTIVE EFFECT.—In the case of any State that provides notification under paragraph (1), if any amendment or modification of a Federal resource management plan applicable to Federal lands

in the State was issued during the one-year period preceding the date of the notification and the amendment or modification altered management of the Greater Sage Grouse or its habitat, implementation and operation of the amendment or modification shall be stayed to the extent that the amendment or modification is inconsistent with the State management plan. The Federal resource management plan, as in effect immediately before the amendment or modification, shall apply instead with respect to management of the Greater Sage Grouse and its habitat, to the extent consistent with the State management plan.

(3) DETERMINATION OF INCONSISTENCY.—Any disagreement regarding whether an amendment or other modification of a Federal resource management plan is inconsistent with a State management plan shall be resolved by the Governor of the affected State.

(e) RELATION TO NATIONAL ENVIRONMENTAL POLICY ACT OF 1969.—With regard to any Federal action consistent with a State management plan, any findings, analyses, or conclusions regarding the Greater Sage Grouse or its habitat under the National Environmental Policy Act of 1969 (42 U.S.C. 4331 et seq.) shall not have

a preclusive effect on the approval or implementation of the Federal action in that State.

(f) REPORTING REQUIREMENT.—Not later than one year after the date of the enactment of this Act and annually thereafter through 2021, the Secretary of the Interior and the Secretary of Agriculture shall jointly submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives a report on the Secretaries' implementation and effectiveness of systems to monitor the status of Greater Sage Grouse on Federal lands under their jurisdiction.

(g) JUDICIAL REVIEW.—Notwithstanding any other provision of statute or regulation, this section, including determinations made under subsection (d)(3), shall not be subject to judicial review.

EXHIBIT E

SAGE-GROUSE DEAR COLLEAGUE LETTER

Congress of the United States
Washington, DC 20515

July 9, 2015

The Honorable Mac Thornberry
Chairman
House Armed Services Committee
2216 Rayburn Building
Washington, D.C. 20515

The Honorable John McCain
Chairman
Senate Armed Services Committee
228 Russell Building
Washington, D.C. 20510

The Honorable Adam Smith
Ranking Member
House Armed Services Committee
2216 Rayburn Building
Washington, D.C. 20515

The Honorable Jack Reed
Ranking Member
Senate Armed Services Committee
228 Russell Building
Washington, D.C. 20510

Dear Chairmen and Ranking Members:

We are writing in strong support for retention of Sections 2862 and 2865 contained in the House-passed National Defense Authorization Act for Fiscal Year 2016 (H.R. 1735) dealing with Protection and Recovery of the Greater Sage Grouse and the Lesser Prairie Chicken. These sections were adopted with strong bi-partisan support in the House of Representatives, and are supported by a large bi-partisan contingent of Governors in the West and Mid-West.

It is entirely appropriate that these issues be addressed within the context of the National Defense Authorization Conference Report. Unless these provisions are retained, the potential for onerous negative use restrictions on several military test and training ranges in 11 Western and 5 Mid-Western States caused by a formal listing under the Endangered Species Act (ESA) is very high.

During these difficult times of defense cuts, a formal ESA listing would impose nearly incalculable financial burdens on the services caused by certain delays in tests and training, potential overflight restrictions, as well as mandatory and costly continuous ESA Section 7 consultations and biological opinions imposed by the U.S. Fish and Wildlife Service. We must act to avoid repeating the military's negative experiences in past years with ESA restrictions caused by a formal listing of the Red Cockaded Woodpecker in the Southeast. The military impacts with a Sage Grouse or Prairie Chicken listing have the potential to be much greater and more widespread unless these Sections are retained.

We believe that Sections 2862 and 2865 represent a balanced approach to both conservation and preservation of these species, by allowing time for the affected States to implement and demonstrate their individual plans. These provisions further provide for annual monitoring and reporting to Congress on the state plans' successes or failures.

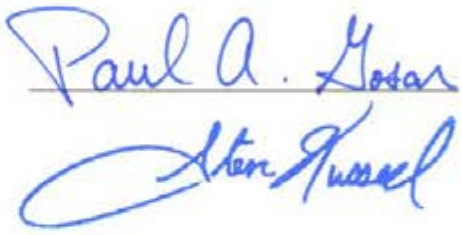
This approach is fully consistent with the ESA itself that requires the Secretary *"to cooperate to the maximum extent practicable with the States."* (16 U.S.C. 1535(a)). Indeed, within the ESA, Congress declared that the States should be encouraged to develop and maintain conservation programs to better safeguard the Nation's wildlife. Unlike the Federal Government, the States are implementing real plans to protect and conserve these species while also protecting the ability of the military to continue to use vital military test and training areas.

In conclusion, it is imperative that the final FY16 NDAA conference agreement retains these sections dealing with the Greater Sage Grouse and Lesser Prairie Chicken in support of State conservation plans. Thank you for considering our views.

Sincerely,












David Webster FL-10

Jane Harman

Brad Sherman

Robert Williams

Ron Wayne

Raul R. Labrador

Tom Marino
NO 83

Mark Takano

Rodney Davis

Pat Tiberi

Tim Huelskamp

Marsha Blackburn

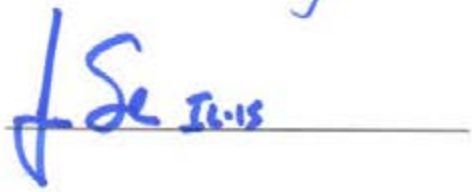
Mike Pompeo

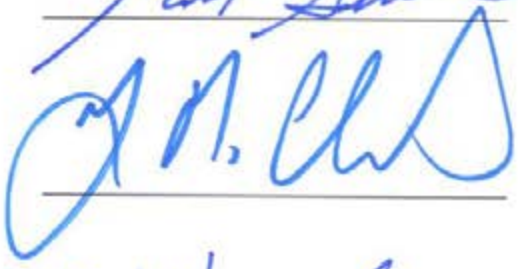
Lee

Chris Walkski

PAGE 5:
July 9, 2015

Steve King





TN-04

KY-2

EXHIBIT F

SPORTSMAN LETTER IN SUPPORT OF CONGRESSIONAL ACTION TO PROTECT STATE MANAGEMENT OF SAGE-GROUSE

April 26, 2016

Dear Speaker Ryan,

As Sportsmen, Conservationists, Livestock Producers, and State Leaders we are writing to request that you include the Sage-grouse language set forth in H.R. 4793 as part of the 2017 National Defense Authorization legislation before Congress. These provisions protect out state ability to implement their Greater Sage-grouse conservation planning efforts and remedy unnecessary restrictions to the highly controversial and unnecessarily problematic Resource Management Plan Amendments (RMPs) implemented by the Bureau of Land Management and U.S. Forest Service.

While some special interest groups oppose sage-grouse protections of created by Western State's sage-grouse conservation efforts, we strongly support the collaborative efforts by broad coalitions in our state's to protect sage-grouse using balanced common-sense conservation efforts and address the needs of our citizens. These conservation measures are working. In fact, Sage-grouse total range-wide breeding populations have increased by 63% over the last two years with a total breeding population of 424,645 birds across 11-Western States.

Newly proposed BLM and Forest service plans threaten these conservation efforts. With a few exceptions, the new federal RMP amendments far exceed the common-sense measures developed by Western States. Notwithstanding the success of state conservation efforts, instead of collaboration, federal regulatory agencies:

- Refused to even include Western States Greater Sage-Grouse Conservation Plan in the federal alternatives,
- Implemented many excessive restrictions of access to use of public land; and
- Summarily dismissed Western State's requests consistency review.

Environmental activists are already threatening new rounds of litigation to challenge the most recent decision not to list the Greater Sage-grouse. In point of fact, this was the third listing determination in just the past decade. Providing a litigation safe-harbor through the appropriations process will allow states to implement their plans in ways that responsibly address Sage-grouse conservation concerns.

In conclusion, we strongly urge inclusion of the Sage-grouse language set forth in H.R. 4793 that protect state management and conservation efforts as part of the 2017 National Defense Authorization legislation before Congress. These provisions allow Western States to correct punitive features of the proposed RMPs and address the threat of unnecessary and unhelpful litigation by special interest activists. These important provisions protect the responsible and common-sense conservation measures by Western States.

BigGame Forever
The Hunters Heritage Council
Washingtonians for Wildlife Conservation
Citizens for Responsible Wildlife Management
Sportsmen for Fish and Wildlife
Utah Association of Counties
Utah Farm Bureau
Utah Cattlemans
Utah Bowman's Assocation
Cooperative Wildlife Management Units Association
Oregon Outdoor Council
Oregon Hunters Association
National Wild Turkey Federation - South Sound Longbeards
Columbia Basin SCI Chapter
Nevada Association of Conservation Districts
Nevada Farm Bureau Federation
Nevada Woolgrowers Association
Nevada Cattleman's Association
Nevada PJ Partnership
Nevada Mineral Resource Alliance
Oregon FNAWS
Oregon Rocky Mountain Elk Foundation
Extreme Elk Magazine
Colorado Outfitters Association
Washington for Wildlife
Leupold
Eastman's Hunting Journals
Speaker Scott Bedke-Idaho House of Representatives
Brad Little-Idaho Lieutenant Governor
Senator Bert Bracket-Idaho State Senate
Representative Marc Gibbs-Idaho House of Representatives
Commissioner Jerry Hoagland-Owyhee County, Idaho
Idaho Farm Bureau
Idaho Mining Association

Idaho Public Lands Council
CO Representative J Paul Brown
CO Senator Ray Scott
CO Representative Yuelin Willet
Colorado Mule Deer Association
Colorado Outfitters Association
Colorado Muzzleloaders Association
Colorado BigGame Forever
Colorado Trappers Association
Colorado Predator Hunters Association
Montana Guides and Outfitters Association
Montana Sportsmen for Fish and Wildlife
Montana BigGame Forever
Wyoming BigGame Forever
Teton County-WY BGF
Park County-WY BGF
Boulder County BGF-Colorado
Moffat County BGF-Colorado
Mesa County BGF-Colorado
Centennial Aurora BGF-Colorado
Weld County BGF-Colorado
Gunnison County BGF-Colorado
Safari Club International, the Inland Empire
Safari Club International, Central Washington Chapter
Inland Northwest Wildlife Council
Northwest Chapter SCI
SW Washington Chapter SCI
Seattle-Puget Sound Chapter SCI
Seattle Sportsmen's Conservation Foundation, and many more.
Borderline Bassin' Contenders
Capitol City Rifle/Pistol
Cascade Mountain Men
Cascade Tree Hound Club
Cedar River Bowmen
Edison Sportsmen's Club
KBH Archers
Kittitas County Field & Stream
NW Field Trial & Hound Association
North Flight Waterfowl
Northwest Sportsman's Club
Okanogan Hound Club
Pacific Flyway

Pateros Sportsman's Club
Paul Bunyan Rifle and Sportsmen's Club
Pheasants Forever Chapter #257
Pierce County Sportsmen's Council
Richland Rod & Gun Club
Ruffed Grouse Society
Skagit Sportsman and Training Association
Tacoma Sportsmen's Club
Vashon Sportsmen's Club
Washington Falconer's Association
Washington Game Fowl Breeders Association
Washington State Bowhunters
Washington State Hound Council
Washington Muzzleloaders Association
Washington State Trappers Association
Wenatchee Sportsmen's Association
Washington Waterfowl Association
Wildlife Committee of Washington
Oregon United Sporting Dogs Association
Oregon Safari Club International
Oregon Trappers Association
Oregon Falconers Association
Benchmade
Double U Hunting Supply
Oregon Pack Works
HEVI Shot
HECS Stealthscreen
Bullseye Camera Systems
Elk101.com
NW Predator Hunters
Oregon Duck Hunters
S2 Calls
HuntonXMaps
Dominic Aiello
Dr. John Menke (Professor Range Ecologist retired)
N-4 Grazing Board
Nevada BigGame Forever
Lincoln County Wildlife Advisory Board
Buckskin National Gold Mine
Eureka County Natural Resource Commission
Senator Don Gustavson-NV Chairman Natural Resources
Senator Pete Goicoechea-NV Senate District 19

Assemblyman John Ellison-NV District 33
Assemblyman Ira Hansen-NV District 32
Commissioner Demar Dahl-Elko County
Commissioner Julian Goicoechea-Eureka County
Commissioner Kevin S. Phillips-Lincoln County
J. Goicoechea-Nevada Land Action Association
John Uhalde-Ely Nevada
Bevan Lister-8 Mile Farms
David Stix-Stix Livestock
Dan Crowell-Eureka Veterinary Service
Jerry Sestanovich-Sestanovich Hay and Cattle
David A. Baker-Baker Ranches
S. Wallace Slough-Quinn River Crossing Ranch
Robert McDougal-Nevada Nile Ranch
Tony and Nancy Lesperance-Liberty Land and Livestock
Norman Frey-Fallon Nevada
Lura Weaver-Lyon County Nevada
Robert and Cassie Mason-Round Mountain Nevada
Carl F. Slagowski
Fred Baily-Diamond Valley, Nevada
Lincoln County Conservation District
John Falen-McDermitt, Nevada
Maggie Orr-Lincoln County
William Blackmore-BigGame Forever Washoe County
Michael Turnispeed-BigGame Forever Carson City, Nevada
Lilla and Woodie Bell-Paradise Nevada
Travis Miller-Jiggs, Nevada
Fred and Chris Steward
Gracian Uhalde-Ely, Nevada
Pete Paris
Ron Cerri-Orovada, Nevada
Kade Lee-Lincoln County, BGF
John Caviglia-White Pine County BGF
Bruce Allen-Clark County BGF
Eureka County Conservation District
Brenda Richards-Murphy, Idaho
Richard Savage-Savage Cattle
John Faulkner-Faulkner Land & Livestock
Bill Baker-Baker Environmental Consulting
John Biar-Western Rangeland Consulting Services
David Little-Little Enterprises
Red Eagle Technologies-Alabama

EXHIBIT G

LEGAL MEMO: POTENTIAL IMPACT OF FEDERAL SAGE-GROUSE MANAGEMENT ON BIG GAME POPULATIONS

M E M O R A N D U M

June 13, 2016

TO: Ryan Benson

FROM: Bill Myers

RE: Potential Impact of Federal Sage-Grouse Management on Big Game Populations

---

The federal government's recently announced sage-grouse management plans span some 165 million acres across ten western states. Sage-grouse and all other game species on these federal lands are property of the states and managed by the states as game animals. At the same time, the vast habitat for these animals is managed by the federal agencies. Thus, while the federal government does not own or control the game animals, it does control their habitat and becomes a de-facto manager of state wildlife through active management of their habitat.

The Bureau of Land Management ("BLM") within the Department of the Interior and the U.S. Forest Service manage nearly all sage-grouse and big game habitat on federal lands. The BLM recognizes the tension between state ownership of species and federal management of their habitat through regulations found at 43 C.F.R. Part 24. As stated in the regulations:

> Since development [in 1970 of an intergovernmental policy statement on management of fish and wildlife resources], a number of Congressional enactments and court decisions have addressed State and Federal responsibilities for fish and wildlife with the general effect of expanding Federal jurisdiction over certain species and uses of fish and wildlife traditionally managed by the State. In some cases, this expansion in jurisdiction in established overlapping authorities, clouded agency jurisdictions and, due to differing agency interpretations and accountabilities, has contributed to confusion and delay in the implementation of management programs.

43 C.F.R. § 24.1(a).

This expansion of federal responsibility, overlapping authorities, and clouded jurisdictions is exemplified in the federal government's recent announcements regarding sage-grouse management. One of the important questions in this context is what effect the federal government's prioritization of federal rangelands for sage-grouse habitat will have on other species such as elk, mule deer, and pronghorn antelope that use the same habitat.

In the U.S. Fish and Wildlife Service's ("Service") 2010 finding that sage-grouse warranted listing under the Endangered Species Act ("ESA"), the Service addressed the effects of wild ungulate herbivory on sage-grouse. The Service found that "despite decreased habitat availability, elk and mule deer populations are currently higher than pre-European estimates." The Service then admitted its ignorance as to the effects of elk, mule deer, and pronghorn antelope grazing on sage-grouse habitat. The Service went on to note that concentrated game herds can have substantial localized impacts on sagebrush vigor and other key elements of sage-grouse habitat. *See* 75 Fed. Reg. 13942 (March 23, 2010). In its most recent decision to not list sage-grouse, the Service revisited the question of the impact of wild ungulates on sage-grouse habitat and stated again that it lacked information regarding the impact of big game species on sage-grouse populations. *See* 80 Fed. Reg. 59908 (Oct. 2, 2015). The Service's 2015 decision to not list sage-grouse as endangered or threatened under the ESA is predicated on the Service's announcement that it would conduct a sage-grouse status review in five years and that it could reopen the "not warranted" finding at any time based on its own research or that of outside parties that may at any time petition for reconsideration of the "not warranted" finding of 2015.

Big game advocates are rightly concerned that the anti-hunting groups could easily use the Service's analysis to reduce deer and elk populations. Anti-hunting groups will see this as an opportunity to produce studies for the Service intended to show that big game populations have a significant negative impact on sage-grouse habitat and therefore big game should be reduced. In the absence of any contrary studies, Fish and Wildlife Service would have to consider this new "science" in determining whether to reopen the question of listing sage-grouse under the ESA. The Service likely would call on BLM and the U.S. Forest Service to increase their "regulatory mechanisms" to control big game populations in order to avoid a listing.

Hunting advocates should not assume that control of deer, elk, and antelope populations will result in increased hunting opportunities. For example, wild horses are a significant problem for sage-grouse habitat as they, too, consume the same plants used by sage-grouse. Yet, there is no agency program to reduce wild horse populations through direct reduction. Instead, fertility control and sporadic roundups and relocations are the methods of choice. Even if hunting is chosen as a method to control big game populations, various control efforts would be mandated by the federal government through a federal agency decision or federal court order binding the federal agencies to act in the name of sage-grouse protection rather than simply enlisting the cooperation of state wildlife agencies to control wild ungulates populations through hunting. Again, an example can be found in the current system whereby predators threaten sage-grouse and yet, the federal government has not enlisted state game and fish agencies as partners in the reduction of predators through hunting opportunities.

In summary, federal prioritization of sage-grouse habitat over all other uses of federal lands, including big game hunting, may well result in big game herd reductions. Those reductions are not likely to come about through hunting. Rather, confusion and delay in state game management is the likely result, as recognized by BLM's own regulations.

EXHIBIT H

SECRETARIAL ORDER 3533
JUNE 16, 2017

THE SECRETARY OF THE INTERIOR
WASHINGTON

ORDER NO. 3353

Subject: Greater Sage-Grouse Conservation and Cooperation with Western States

Sec. 1 **Purpose**. The purposes of the Order are to: (1) enhance cooperation between the Department of the Interior (Department) and the States of Oregon, Washington, California, Nevada, Idaho, Utah, Montana, North Dakota, South Dakota, Wyoming, and Colorado (the Eleven Western States) in the management and conservation of the Greater Sage-Grouse (Sage-Grouse) and its habitat; (2) support a partnership with clearly defined objectives and roles for Federal and State entities responsible for Sage-Grouse management and conservation in order to sustain healthy populations of the species; and (3) establish a team to review the Federal land management agencies' Sage-Grouse plan amendments and revisions completed on or before September 2015.

Sec. 2 **Authorities**. This Order is issued under the authority of section 2 of Reorganization Plan No. 3 of 1950 (64 Stat. 1262), as amended, and pursuant to the land management and programmatic authorities of the bureaus identified below in section 4b.

Sec. 3 **Background**. The Department has broad responsibilities to manage Federal lands and resources for the public's benefit, including, but not limited to, permitting authorized uses; managing habitat to support fish, wildlife, and other resources; protecting cultural resources; and providing recreational and educational opportunities on Federal lands and waters.

The State agencies responsible for fish and wildlife management possess broad powers for the protection and management of fish, wildlife, and plants within their borders, except where preempted by Federal law. State agencies are at the forefront of efforts to maintain healthy fish and wildlife populations and to conserve at-risk species to ensure that protection under the Endangered Species Act (ESA) is not required.

The State-Federal Sage-Grouse Task Force (SGTF) was established in 2011 as a forum for high-level State and Federal representatives to meet and evaluate policies, programs, management actions, data sharing, and other actions affecting conservation of the Sage-Grouse and the sagebrush ecosystem, as well as the health of the communities and economies of the American West.

In September 2015, the Department and the United States Department of Agriculture (USDA) adopted amendments and revisions to 98 Bureau of Land Management (BLM) and U.S. Forest Service (USFS) land use plans across the Eleven Western States addressing, in part, the Sage-Grouse and its habitat (the 2015 Sage-Grouse Plans). The 2015 Sage-Grouse Plans govern management of 67 million acres of Federal lands. More than half of remaining Sage-Grouse habitat is on land managed by BLM and USFS. As the Department moves forward in the management of Sage-Grouse habitat, it is imperative that it does so in a manner that allows both

wildlife and local economies to thrive and incorporate the expertise of Federal employees in the field, local conditions, and proven State and local approaches.

In October 2015, in reliance upon the conservation commitments and progress reflected in Federal land use plan amendments and revisions and other private, State, and Federal conservation efforts, the U.S. Fish and Wildlife Service (FWS) determined that the Sage-Grouse did not warrant listing under the ESA. In making that finding, FWS committed to work with State and Federal partners to conduct a Sage-Grouse status review in 5 years.

Sec. 4 **Policy**.

a. Cooperation with the Eleven Western States on Sage-Grouse Conservation Efforts.

Consistent with governing laws, regulations, and policies, the Department will implement a multifaceted strategy to enhance cooperation with the Eleven Western States primarily responsible for the management and conservation of Sage-Grouse. The strategy will include supporting a partnership that allows the Department and the Eleven Western States to maintain healthy populations of Sage-Grouse and improve collaboration and integration of State and local concerns and approaches into sagebrush management and conservation on Federal lands. Accordingly, and subject to paragraph 4b, below, the BLM Director, working with other heads of bureaus and offices within the Department, USFS, and affected States through the SGTF, shall develop:

(i) memorandums of understanding and other agreements with states and other partners regarding implementation of the 2015 Sage-Grouse Plans;

(ii) training for BLM staff regarding implementation of the 2015 Sage-Grouse Plans, including direction to consider state and local information, as appropriate; and

(iii) memorandums of understanding and other agreements with States and other partners regarding integration of information on Sage-Grouse populations into Federal land management decisions.

b. Department of the Interior Sage-Grouse Review Team.

This Order establishes the Sage-Grouse Review Team (Team). The Team will be made up of land managers and other professionals from bureaus and offices, including BLM, FWS, and the U.S. Geological Survey (USGS). The Team will closely coordinate with USDA and USFS. The Team will engage with appropriate State agencies through the SGTF to coordinate its work. The Team is hereby directed to conduct:

(i) a review of the plans and programs that States already have in place to ensure that the 2015 Sage-Grouse Plans adequately complement state efforts to conserve the species;

(ii) a further examination, through the framework established by the Integrated Rangeland Fire Management Strategy, of issues associated with preventing and fighting the proliferation of invasive grasses and wildland fire, which are leading threats to Sage-Grouse habitat;

(iii) an examination of the impact on individual States disproportionately affected by the large percentage of Federal lands within their borders, recognizing that those lands are important to resource use and development, and to the conservation of the Sage-Grouse;

(iv) a review of the 2015 Sage-Grouse Plans and associated polices, including seven BLM Instruction Memoranda (IM) issued in September 2016. The review will include (1) identification of provisions that may require modification or rescission, as appropriate, in order to give appropriate weight to the value of energy and other development of public lands within BLM's overall multiple-use mission and to be consistent with the policy set forth in Secretary's Order 3349, "American Energy Independence," implementing the Executive Order signed by the President on March 28, 2017, "Promoting Energy Independence and Economic Growth"; and (2) opportunities to conserve the Sage-Grouse and its habitat without inhibiting job creation and local economic growth;

(v) as appropriate, the Team should provide recommendations with regard to (1) captive breeding; (2) opportunities to enhance State involvement; (3) efficacy of target populations on a State-by-State basis; and (4) additional steps that can be taken in the near term to maintain or improve the current population levels and habitat conditions.

Sec. 5. **Implementation**.

a. Within 10 days of the signing of this Order, the Deputy Secretary will designate individuals from within the Department to serve on the Team.

b. The BLM Director will designate an individual to coordinate all activities by and within the Department with respect to implementation of this Order.

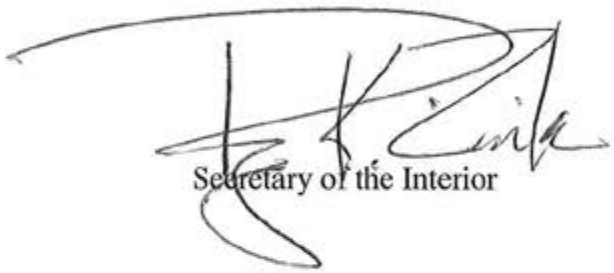
c. All bureaus and offices are directed to immediately begin implementing section 4 of this Order by identifying opportunities for cooperative management agreements and collaborative partnerships with the Eleven Western States and by outlining any specific steps to be undertaken.

d. Within 60 days of the date of this Order, the Team shall provide a report to the Secretary summarizing the review set forth in section 4b of this Order and provide recommendations regarding additional steps the Department should take to address any issues identified as a result of that review.

Sec. 6 **Effect of Order**. This Order is intended to improve the internal management of the Department. This Order and any resulting reports or recommendations are not intended to and

do not create any right or benefit, substantive or procedural, enforceable at law or equity by any party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person. To the extent there is any inconsistency between the provisions of this Order and any Federal laws or regulations, the laws or regulations will control.

Sec. 7 **Expiration Date**. This Order is effective immediately and will remain in effect until its provisions are accomplished, amended, superseded, or revoked, whichever occurs first.



Secretary of the Interior

Date: June 7, 2017

EXHIBIT I

SECRETARIAL MEMO
AUGUST 4, 2017

THE SECRETARY OF THE INTERIOR

WASHINGTON

AUG 04 2017

Memorandum

To: Deputy Secretary

From: Secretary

Subject: Improving the BLM's 2015 Sage-Grouse Plans

On June 7, 2017, I issued Secretary's Order 3353, "Greater Sage-Grouse Conservation and Cooperation with Western States" (Order). The Order was issued in response to concerns I have heard regarding the Bureau of Land Management's (BLM) 2015 Greater Sage-Grouse (Sage-Grouse) Plans. The Department of the Interior (Department) Sage-Grouse Review Team has completed the "Report in Response to Secretarial Order 3353" (Report) outlining short- and long-term recommendations as directed in my Order.

I hereby direct you to ensure implementation of the recommendations and direct BLM, in coordination with the U.S. Fish and Wildlife Service, U.S. Geological Survey, and other offices in the Department, to immediately begin implementing the short- and long-term recommendations in the Report. As part of this effort, the BLM should collaborate with the Sage-Grouse Task Force to engage with stakeholders and to improve the compatibility of the 2015 Sage-Grouse Plans with the States,[1] beginning with these actions:

- Identify options to incorporate updated habitat boundaries into habitat management areas;
- Clarify mechanisms to modify waivers, exceptions, and modifications in priority habitat management areas (PHMAs);
- Modify or issue new policy on fluid mineral leasing and development, including the prioritization policy;
- Issue or modify policy and provide training on use of assessment and monitoring data and tools, the habitat objectives table from the 2015 Sage-Grouse Plans and to increase flexibility in grazing management;
- Identify options for flexibility when applying adaptive management decisions;
- Investigate options to streamline use authorizations with little impact on the 2015 Sage-Grouse Plans;
- Clarify the appropriate use of compensatory mitigation and identify opportunities to increase consistency between the Federal and State plans;
- Work with the States to improve techniques and methods to allow the States to set appropriate population objectives; and
- Investigate the removal or modification of Sage-Grouse Focal Areas in certain States.

[1]The States are California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

I am particularly interested in assisting the States in setting Sage-Grouse population objectives to improve management of the species. I also believe we should examine a program to enhance scientific research. Please report to my office periodically, and no less than every 6 months, on the progress you have made in implementing the recommendations from the Report.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240
http://www.blm.gov

MEMORANDUM TO THE SECRETARY

DATE: August 4, 2017

FROM: Kathleen Benedetto, Special Assistant to the Secretary – BLM
John F. Ruhs, BLM Acting Deputy Director
Co-Leads, Department of the Interior Sage-Grouse Review Team

SUBJECT: Response to Secretarial Order 3353

The Department of the Interior Sage-Grouse Review Team (DOI Team) submits the attached report in response to Secretarial Order 3353, "Greater Sage-Grouse Conservation and Cooperation with Western States" (June 7, 2017) (the Order). The DOI Team has coordinated with the Sage Grouse Task Force (SGTF) and the U.S. Forest Service to identify short and long term actions to meet the purposes of the Order. Since there is variation among the Bureau of Land Management (BLM) plans and among the State plans and programs, as well as with the resource issues and concerns in each State, each State has expressed interest in pursuing action on a different subset of the items included in the report. The DOI Team requests the Secretary direct the appropriate DOI bureaus to implement the recommendations and periodically report outcomes to the Deputy Secretary. The DOI Team recommends continued collaboration with the States, initiation of stakeholder engagement, implementation of the short-term recommendations, and investigation of potential plan amendments, beginning with these actions:

- Identify options to incorporate updated habitat boundaries into habitat management areas;
- Clarify mechanisms to modify waivers, exceptions, and modifications in priority habitat management areas (PHMAs);
- Modify or issue new policy on fluid mineral leasing and development, including the prioritization policy;
- Issue or modify policy and provide training on use of assessment and monitoring data and tools, the habitat objectives table from the 2015 Greater Sage-Grouse (GRSG) Plans and to increase flexibility in grazing management;
- Identify options for flexibility when applying adaptive management decisions;
- Investigate options to streamline use authorizations with little impact on GRSG;
- Clarify the appropriate use of compensatory mitigation and identify opportunities to increase consistency between the Federal and State plans;
- Work with States to improve techniques and methods to allow the States to set appropriate population objectives; and
- Investigate the removal or modification of Sage-grouse Focal Areas in certain States.

Attachment: Report in Response to Secretarial Order 3353

REPORT IN RESPONSE TO SECRETARIAL ORDER 3353

I. EXECUTIVE SUMMARY

This report responds to the Secretary's Order 3353, "Greater Sage-Grouse Conservation and Cooperation with Western States" (June 7, 2017) (the Order). In response to the Order, the Department of the Interior (DOI) appointed a DOI Sage-Grouse Review Team (DOI Team)[1] to address the elements of the order and produce a report. In developing the report and recommendations, the DOI Team sought input from the Eleven Western States[2] identified in the Order and coordinated with the U.S. Department of Agriculture Forest Service (USFS). The DOI Team respectfully requests the Secretary of the Interior to direct the appropriate DOI bureaus to implement the recommendations and periodically report outcomes to the Deputy Secretary.

Together, the DOI Team, and managers and staff from the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (FWS), and U.S. Geological Survey (USGS), and the Sage-Grouse Task Force (SGTF)—made up of representatives of the Governors of each of the Eleven States—identified issues, options to address those issues, and next steps to implement the Order. The DOI Team and the SGTF are committed to a balanced approach that provides both responsible economic development and long term conservation of the Greater Sage-Grouse (GRSG)[3]. This commitment includes an interest by most States in retaining the 2015 GRSG Plans—using policy and clarifications initially to better align them with State plans and programs and to meet the purposes of the Order, while continuing joint engagement to further define consideration of potential targeted plan amendments. The Federal agencies and States are also committed to continue to work with partners to prioritize staff and funding to implement on-the-ground actions to conserve and restore GRSG habitat.

The DOI Team and the SGTF affirm that the issues and options identified in this report do not apply to each State, are not consensus opinions from all States, and are not "one size fits all." Pertinent issues and associated solutions should be tailored to each State's needs while ensuring conservation of the species. Whenever possible, the options identified by the DOI Team provide near-term opportunities to resolve concerns and issues and achieve the purpose of the Order, including development of policies, clarification, memoranda of understanding (MOUs), and training, many of which can be completed within 6 months (see Section IV and Appendix A). The DOI Team also identified longer term options, including potential plan amendments, which would be completed in accordance with applicable laws and policies (see Section IV and Appendix A).

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[1] The DOI Team consists of co-leads Kathleen Benedetto, Special Assistant to the Secretary - BLM; John Ruhs, BLM Deputy Director of Operations; Casey Hammond, Special Assistant to the Secretary - Fish, Wildlife, and Parks; Gregory Sheehan, FWS Deputy Director; Anne Kinsinger, USGS Associate Director for Ecosystems; Cynthia Moses-Nedd, DOI Liaison to State and Local Government; Timothy Williams, DOI Deputy Director of External Affairs; Amanda Kaster, Advisor to the Secretary; and Vincent DeVito, Energy Counselor to the Secretary.

[2] The Eleven States are California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

[3] It should be noted that the States of Idaho and Utah have pending challenges to the 2015 Sage-Grouse Plans. While these States participated in identifying issues related to the Federal plans, these States do not waive or concede any of their legal arguments. The Nevada Attorney General also filed suit and does not waive or concede Nevada's legal arguments. Similarly, the federal agencies do not waive or concede any of their legal arguments.

This report recommends continued collaboration with the States, including both through the SGTF and between each Governor's office and the respective Bureau of Land Management (BLM) State Director and USFS Regional Forester, as well as key BLM and USFS national-level Directors. This report also recommends engagement on the issues and options identified in this report with Congressional delegations, counties, local governments, and tribes, as well as with ranchers, industry, conservation groups, and other stakeholders. This additional engagement would be used to refine the options and develop a plan for prioritized implementation of the options in this report.

The review conducted in response to the Order identified many opportunities, summarized in this report, to clarify the BLM's management under the 2015 GRSG Plans. Clarifications, policies, agreements, or training could: (1) address issues related to habitat assessment and monitoring, including the Habitat Assessment Framework, and grazing management; (2) take advantage of flexibility in the 2015 GRSG Plans to support energy, mineral, and other development; (3) increase consistency between the BLM and States on density and disturbance caps and mitigation; and (4) in some cases, allow adjustments to habitat boundaries and address issues with adaptive management.

The review also identified longer term options to consider some issues through a potential plan amendment process. This report recommends further investigation of potential plan amendments, including considering what combination of potential plan amendments would best balance continuing to conserve the GRSG and its habitat and supporting economic development, and whether to consider State-by-State or range-wide amendments. Potential plan amendments could be considered in some States to remove or modify sagebrush focal area (SFA) designations; address adjustments to habitat management boundaries; adjust responses to reaching adaptive management triggers; evaluate the compensatory mitigation standard; and provide additional flexibility in resource development.

The report identifies opportunities to improve coordination on fire, fuels, and invasive species management and to develop MOUs, increase data sharing, initiate new research, and incorporate new information into plan implementation. The report also includes recommendations on captive breeding, translocations, predator control, and setting population targets.

II. BACKGROUND

The GRSG is a State-managed species throughout its range with approximately half of its habitat managed by the BLM and USFS. State-led efforts to conserve the species and its habitat date back to the 1950s. For the past two decades, State wildlife agencies, Federal agencies, and many others in the range of the species have been coordinating efforts to conserve GRSG and its habitat.

In 2010, the FWS found that the GRSG was warranted for listing under the Endangered Species Act (ESA) but precluded from listing due to other species with higher listing priority. In the 2010 finding, the FWS identified habitat loss and fragmentation and lack of regulatory mechanisms as the primary threats. In 2012, the FWS, in collaboration with the States, led an effort to identify conservation objectives for GRSG and its habitat. The Conservation Objectives Team report,

released in 2013, identified objectives for 14 potential threats to the GRSG including: fire, nonnative invasive plants, energy development, sagebrush removal, improper grazing, range management structures, wild horses and burros, pinyon-juniper expansion, agricultural conversion, mining, recreation, urbanization, infrastructure, and fences.

The BLM and USFS initiated land use planning processes to provide regulatory certainty in addressing the threats of habitat loss and fragmentation on Federal lands to conserve the GRSG and its habitat, avoid further population declines, and avoid the need to list under the ESA. Early in the process, the BLM and USFS collaborated with the States to pursue State-by-State land use planning. These State-by-State approaches were supplemented with range-wide decisions to increase consistency between the 2015 GRSG Plans and to respond to the issues addressed in the FWS's 2010 listing determination. Several States identified instances in which they did not believe the final approved BLM 2015 GRSG Plan was consistent with the applicable State plan, particularly with regard to range-wide decisions. There were also concerns that the records of decision and final approved 2015 GRSG Plans included decisions from alternatives other than the proposed alternative (as described in the proposed plans and final environmental impact statements) and therefore differed from the State's expectations based on the collaborative planning efforts.

In September 2015, the BLM and the USFS adopted amendments and revisions to 98 land use plans (2015 GRSG Plans) across the ten[4] Western States addressing, in part, GRSG and its habitat. In September 2016, the BLM issued seven instruction memoranda (IMs; IMs 2016-139 through 2016-145) to provide guidance on certain elements of the 2015 GRSG Plans.

In October 2015, relying upon the conservation commitments and progress reflected in the 2015 GRSG Plans and other private, State, and Federal conservation efforts, the FWS published its determination that the GRSG did not warrant listing under the ESA. In making that finding, the FWS determined the 2015 GRSG Plans provided certain and effective measures for conservation of the species. The FWS also committed to work with State and Federal partners to conduct a GRSG status review in 5 years to determine if plan implementation was indeed conserving the GRSG and its habitat.

The BLM, USFS, Natural Resources Conservation Service (NRCS), FWS, State agencies, and other partners have been working collaboratively, to the extent practicable, to implement the Federal and State plans to conserve GRSG and its habitat. A particular focus has been placed on an all-lands approach, encompassing Federal, State, and private lands, to achieve habitat restoration, fire control, and fuels management. Through these efforts, hundreds of thousands of acres of sagebrush rangelands have been restored or are on their way to being restored.

III. PROCESS UTILIZED FOR REVIEW

In June 2017, the Acting BLM Director, the DOI Team, and DOI staff met with the SGTF to discuss the Order and establish a process for State input on the items identified in the Order. The BLM, FWS, and USGS managers and staff also began working with each State to gather

[4] While Washington is included in the review for the Order, the majority of the State was not part of the 2015 GRSG Plans. A BLM land use plan that will include GRSG conservation for the Spokane District in Washington is currently under development.

information related to the Order, including State-specific issues and potential options for actions with respect to the 2015 GRSG Plans and IMs to identify opportunities to promote consistency with State plans. The SGTF developed an initial list of issues and refined those issues and options on a State-by-State basis while working with the respective BLM State Directors. In July 2017, the Federal agencies and the SGTF met twice to further refine and validate the issues and options presented in this report.

The following actions were also completed to address specific sections of the Order:

- Section 4b(i), (iii), and (iv) of the Order: Each BLM State Director worked with their Governor's office(s) to review State plans and programs and the 2015 GRSG Plans.
- Section 4b(ii): DOI staff worked with the SGTF and individual Governor's offices to further examine invasive species and wildland fire issues.
- Section 4b(v): The Western Association of Fish and Wildlife Agencies (WAFWA) developed and submitted to SGTF white papers on each of the topics described in this provision of the Order.
- DOI staff also worked with the SGTF and the individual Governor's offices to gather further information on data and science.

In these reviews, the need for MOUs and other agreements and training, as called for in Section 4a of the Order, and cooperative management and collaborative partnerships, as called for in Section 5c of the Order were also considered. These individual reviews were then rolled-up for further discussion with the SGTF and the DOI Team and staff. Based on these reviews, the SGTF and DOI Team identified issues, potential options, and next steps to include in this report in response to Section 5d of the Order.

IV. RECOMMENDATIONS

This section provides an overview of the issues identified and potential options to address those issues (see Appendix A), as well as recommendations on the topics of wildland fire and invasive species, wildlife management, and data and science (see Appendices B through D). Appendix E contains other issues identified that are not directly related to the 2015 GRSG Plans and that are not addressed in this report but may warrant further coordination between the BLM and the States. Appendix F contains white papers developed by WAFWA related to wildlife topics.

In regard to Washington, a new BLM land use plan for the Spokane District has not yet been issued. Based on the Order and the recommendations included in this report for the 2015 GRSG Plans, Washington and the BLM will review the BLM's preliminary draft plan to identify any further opportunities to increase compatibility with the State plan, address the elements of the Order, and consider issues and options included in this report. The BLM will work to issue the Spokane District draft plan for public comment as soon as practicable after this review is complete.

In discussions with the SGTF, there is general consensus that all partners are committed to effective and durable measures to provide for the conservation of GRSG to ensure there is no need to list GRSG under the ESA in the future. There is agreement that monitoring and reporting on conservation actions, habitat condition and trends, and economic development are essential. Such monitoring is key to demonstrate the effectiveness of State and Federal GRSG Plans in

addressing the threats, including habitat fragmentation, invasive species, and fire, as well as support for local economic opportunities and development.

This report includes short and long term approaches to address issues of concern through policy, clarification, and training (short term), as well as investigating potential targeted plan amendments (long term). Certain options are prioritized for further work to begin immediately, including: identifying options to incorporate updated habitat boundaries into habitat management areas; clarifying mechanisms to modify waivers, exceptions, and modifications in priority habitat management areas (PHMAs); modifying the fluid mineral lease prioritization policy; issuing or modifying policy and providing training on use of the habitat objectives tables from the 2015 GRSG Plans; identifying options for addressing hard trigger responses when applying adaptive management decisions; and researching the ability to streamline authorizations for activities with little or no impact on GRSG.

a. 2015 GRSG Plans and Policies (Addressing Sections 4b(i), (iii), and (iv) and 4a of the Order)

i. *Fluid Minerals (Stipulations, Waivers, Exceptions, Modifications, Leasing Prioritization) and Density and Disturbance*

There are multiple opportunities to be responsive to the Executive Order on "Promoting Energy Independence and Economic Growth" and the Secretarial Order on "American Energy Independence," while continuing a robust commitment to the conservation of GRSG. A cooperative DOI and State effort can provide the flexibility for responsible economic growth and at the same time ensure conservation of GRSG habitat.

The areas of leasing prioritization and the PHMA stipulation's waiver, exception, and modification language are suggested issues of focus for the BLM subsequent to the submittal of this report. Leasing prioritization options include policy clarification while developing the approach to revise IMs for leasing prioritization either nationally or State-by-State. For waiver, exception, and modification language for PHMA stipulations, options include investigating opportunities to provide additional waivers, modifications, and exceptions through policy or potential plan amendments, while adequately addressing the threats in the area, avoiding habitat loss or fragmentation, and ensuring effective and durable conservation, while providing for economic development.

For general habitat management areas (GHMAs), stipulations identified vary on a State-by-State basis. Options include developing State-specific policy or training to explain how to use existing flexibility or considering alternative stipulations.

For SFAs, longer term options include considering potential plan amendment(s) to modify or remove SFA fluid minerals stipulations.

The 2015 GRSG Plans define processes for calculating the amount of surface disturbance and the density of energy and mining facilities. The 2015 GRSG Plans recognized State processes, if they were in place prior to the plans being approved and if the data could be accessed to meet reporting requirements for density of development and acres disturbed and reclaimed. Some States have developed or are in the process of developing new tools

for density and disturbance calculations. For some States, there may be differences between the State plans and the 2015 GRSG Plans in the list of disturbances to count and the appropriate scale (project and biologically significant unit) where the disturbance and density caps should apply. Options include the BLM and the States identifying State-specific inconsistencies and evaluating the various processes and tools for (1) consistency between Federal and State approaches for calculating the amount of surface disturbance and the density of energy and mining facilities, (2) adequacy to conserve GRSG, and (3) the ability to report on disturbance associated with uses, as well as restoration actions that result in achieving conservation of the habitat.

ii. ***Mitigation and Net Conservation Gain***

There are concerns that the mitigation requirements in the 2015 GRSG Plans (including the net conservation gain standard and the need for a clear definition of that standard) may differ from requirements in some of the State plans. The States prefer consistency between State mitigation standards and the BLM mitigation standard and a definition that encompasses the various standards the States have adopted. The DOI is currently reviewing its mitigation policies and may issue revised policy, including consideration of various mitigation standards, such as one-to-one ratio, equivalent value, no net loss, or other standards. It was recognized during the review that if the States have permitting authority that includes compensatory mitigation requirements, applicants for uses on public lands may need to meet both State and Federal compensatory mitigation requirements. The DOI Team and the SGTF agree that consistent application of the mitigation hierarchy (avoid, minimize, and compensate), including compensatory mitigation standards and other requirements between State and Federal plans, policies, and procedures, is desirable. Additional coordination on the approach to mitigation and standards is a priority.

In 2015, the SGTF formed the Sage-Grouse Mitigation Workgroup to develop a report to provide for greater certainty of implementing mitigation across the range. The report, "Greater Sage-Grouse Compensatory Mitigation," was delivered to the SGTF in December 2016. The report identifies the key principles for successful compensatory mitigation efforts. This report may be helpful to further coordinate on mitigation. States have demonstrated, or are confident that as their mechanism(s) become available, that their mitigation approaches are or will be adequate to meet the principles in this mitigation framework while supporting economic development. States have indicated that compensatory mitigation to offset unavoidable impacts is an important tool, in addition to restrictions associated with avoid and minimize, to provide increased flexibility and options to authorize development and provide adequate conservation of the habitat.

In the short term, options identified to address concerns related to mitigation include defining "net conservation gain" and developing policy and MOUs with the States to ensure compensatory mitigation is commensurate with the project-specific residual impacts and coordinate and clarify options for use of each State's approach when applying mitigation, including meeting the net conservation gain standard. Longer term options could include a potential plan amendment to consider changes to the Federal compensatory mitigation standard. Options to consider could include investigating using

the State standards; setting a Federal standard as a minimum and using the State standards if they are equal or higher than the Federal standard; or using the Federal standard on public land and the State standard on private or State lands.

iii. ***Habitat Assessment, Habitat Objectives Tables, and Effectiveness Monitoring***

The SGTF and DOI Team discussed issues relating to confusion on the use and inconsistent application of the Habitat Assessment Framework (HAF); Assessment, Inventory, and Monitoring (AIM) data; other data; and the habitat objectives table that is included in each of the 2015 GRSG Plans. Clarifications on how information is collected and used will improve the way the BLM evaluates GRSG habitat and applies the data and habitat objectives tables to management decisions on public lands.

In the short term, options include providing additional training to field staff and partners on the use of HAF, AIM, other monitoring data, habitat objectives, and other tools and methods; revising the policies on habitat assessment and effectiveness monitoring as needed to clarify their use; and issuing new policy explaining how to use habitat objectives. Other short term options include investigating tools and methods to streamline gathering and reporting on habitats in good condition and focusing increased attention and time on degraded habitats or habitats at risk. In the longer term, new science and information may result in considering a potential plan amendment to revise the habitat objectives tables in the 2015 GRSG Plans to reflect best available science.

iv. ***Adaptive Management***

The SGTF and DOI Team identified two main issues: (1) responses instituted to respond to tripping a hard trigger prior to causal factor analysis may not address the threat identified in the analysis; and (2) the inability to revert to previous management when conditions improve after tripping and responding to a trigger.

In the short term, an option is to develop policy to clarify the implementation of the adaptive management process, including conducting causal analysis when either a soft or hard trigger is reached. However, most concerns with adaptive management can likely not be addressed through policy. Long term options include potential plan amendments to consider (1) removing automatic hard trigger management responses when population or habitat recovers above the original condition (the condition prior to a trigger being reached), and more restrictive hard trigger management responses are no longer required to conserve the GRSG or its habitat; and (2) providing flexibility to identify appropriate management responses based on a causal analysis when a hard trigger is reached, while still ensuring a rapid response to catastrophic population or habitat losses.

v. ***Livestock Grazing***

The SGTF and the DOI Team recognize that improper grazing is a threat to the conservation of GRSG, while proper grazing management is compatible with conserving GRSG habitat and, in some situations, may support or benefit habitat management. There is a perception of undue emphasis on livestock grazing in general, instead of a focus on improper grazing. Issues include how to prioritize and process grazing permits and

monitoring actions and provide additional flexibility in applying management appropriate to on-the-ground conditions at the BLM field office level.

In the short term, options include revising policy to: incorporate guidance on how to prioritize and complete grazing permit renewal and to emphasize where there are known impacts to GRSG habitat; clarify that habitat objectives are not used directly in permit renewal but instead are used to help inform land health (see Section IV(a)(iii) of this report); and clarify that thresholds and responses can vary in different habitat types. Additional short term options include developing a more collaborative approach with grazing permittees and other stakeholders and providing training to field staff and partners to ensure policy and existing procedures are correctly applied. Policies and training should clarify that proper livestock grazing is compatible with GRSG habitat and, in some cases, may be used to address threats to GRSG (e.g., controlling invasive exotic annual grass species). In addition, the BLM will continue to pursue (1) targeted grazing pilot projects to investigate the use of grazing to address excessive fuels and create strategic fuels breaks and (2) outcome-based grazing demonstration projects to investigate the use of flexible grazing permits to respond effectively to changing conditions while helping to improve habitat.

vi. ***Other Minerals, Energy, and Lands (e.g., rights-of-way)***

These discussions centered on four distinct topics: (1) concerns that broad exclusions and closure areas may not address the uses and associated threats to GRSG in a PHMA; (2) a need to clarify how to evaluate proposed actions in an avoidance area; (3) available flexibility on application of required design features (RDFs); and (4) lack of clarity on the application and size of lek buffers. The discussions varied according to the needs of each State, as there are complexities created by the various land ownership patterns (e.g., consolidated Federal ownership vs. scattered Federal ownership).

Options include evaluating each State's approach to identify how it differs from each 2015 GRSG Plan and to consider whether the State's mechanism, including compensatory mitigation, could adequately address the threats in the area, avoid habitat loss or fragmentation, and ensure effective and durable conservation, while providing for economic development. For example, if gravel pits are in an area closed to that use, and the State's mechanisms for managing gravel pits, including compensatory mitigation, may provide equivalent assurance for conservation of the species and its habitat, then this topic should be further investigated.

The topics of how to implement land use authorizations in avoidance areas, the application of RDFs, and the use of lek buffers all share the need for additional clarity or training, including sharing lessons learned across jurisdictional boundaries. In the short term, options include providing clarifications and policy on how to evaluate proposed uses in avoidance areas and how to use existing flexibility in applying RDFs and buffers. This includes the consideration of State-proposed RDFs or buffers, as well as local conditions and other factors. The DOI Team also recommends additional research to (1) evaluate appropriate buffers for different uses and the effectiveness of various RDFs and (2) incorporation of new science into plan implementation as it becomes available.

vii. ***Habitat Boundaries - Sagebrush Focal Areas and Habitat Management Areas***
Concerns were identified with: (1) whether SFA designations and their associated decisions are necessary in some States or if underlying allocations (PHMAs, Important Habitat Management Areas, GHMAs, or others) and associated decisions are adequate to meet GRSG conservation, including effectiveness and durability; and (2) the BLM's ability to adjust habitat management area boundaries and associated decisions to incorporate revised habitat mapping by States. States regularly refine habitat maps delineating GHMAs and PHMAs through on-the-ground verification and incorporation of new information, and the concern was expressed that the 2015 GRSG Plans may not provide the flexibility to incorporate these updates.

In the short term, options include investigating each 2015 GRSG Plan to determine if there is flexibility to adopt revised habitat maps from the States to adjust habitat management area boundaries and develop a process and criteria for evaluating and adopting future habitat mapping corrections, which may include considering potential plan amendments in some States. In the long term, options include potential plan amendments to evaluate the need to remove or modify SFAs allocations in some States, including whether to retain, modify, or remove associated SFA management actions to achieve effective and durable GRSG conservation.

b. Wildland Fire and Invasive Species (Addressing Sections 4b(ii) and 4a of the Order)

Pursuant to the Order, the DOI Team examined the "Integrated Rangeland Fire Management Strategy" (IRFMS) to identify issues associated with preventing and controlling the proliferation of invasive grasses and wildland fire, including seeking feedback from States. Recommended additional steps are outlined in Appendix B.

The IRFMS provides a comprehensive approach to reduce the size, severity, and cost of rangeland fires, address the spread of cheatgrass and other invasive species that exacerbate the threat of fire, position fire management resources for more effective rangeland fire response, and restore burned rangelands to healthy landscapes. Feedback from the States and WAFWA demonstrated a strong history of Federal and State collaboration surrounding the goals and actions in the IRFMS.

The following recommendations will further enhance the implementation of the IRFMS:

- Continue to complete action items from the IRFMS; support ongoing State-led efforts, including the WAFWA "Sagebrush Conservation Strategy" and the Western Association of State Departments of Agriculture (WASDA) "Western Invasive Weed Action Plan"; implement the "National Seed Strategy for Rehabilitation and Restoration"; and implement action items from the Western Governors Association National Forest and Rangeland Management Initiative.
- Increase collaboration and outreach, including support for the SageWest communications initiative, joint prioritization and funding of projects, support for rangeland fire protection associations (RFPAs) and rural fire departments (RFDs), establishment of wildfire protection agreements, and support for the "National Cohesive Wildland Fire Management Strategy."

- Conduct research and field trials to further streamline and increase success in restoration and fuels management activities, including pursuing new biocides and herbicides, accelerating Environmental Protection Agency registration and land management agency use of new tools, and investigation and use of targeted grazing.
- Work with the DOI and Congress to reinstate authorities to provide equipment to State and local cooperators for firefighting.
- Enhance multijurisdictional funding of projects on public and private lands and commit to multiyear funding of projects to increase likelihood of success.
- Complete risk-based budget allocation adjustments in the DOI to ensure fire and fuels funding is allocated to high-risk/high-value areas, including increasing the BLM's fire and fuels budget to be in line with identified fire risk to public lands.

c. Wildlife Management (Addressing Sections 4b(v) and 4a of the Order and Other Requests by the DOI Team)

As a State trust species, individual States exercise their authority to manage and conserve GRSG according to their own laws and policies. In response to the Order, the WAFWA developed four technical white papers (Appendix F) to summarize the current scientific literature and management experience on the issues of: (1) captive breeding, (2) population objectives, (3) predator control, and (4) hunting. As recognized by the Order, it is the prerogative of each individual State to conserve and manage State trust species and, thus, to determine whether a Statewide population target is appropriate and whether any of these management tools should be implemented within the respective States. In support of setting population targets, the DOI Team recommends support for developing tools and techniques to estimate and set population objectives, including (1) a State/Federal/academic partnership that is working to develop and refine techniques to better estimate range-wide populations over the next two years; and (2) USGS-supported research to improve the ability to find new leks, understand the percent of leks not counted because they are unknown, and increasing the accuracy of counts once leks are detected.

i. Captive breeding, as a wildlife management tool, is best suited to augmenting small, at-risk populations for short periods of time, while factors contributing to population declines are simultaneously addressed. Because captive breeding of GRSG has not yet proven effective, requires expenditures that would limit funding availability for other priority efforts and may require the removal of potentially viable eggs from the wild, further work is needed to fairly evaluate captive breeding. The DOI Team recommends that new captive breeding efforts continue to be investigated to improve effectiveness.

ii. While State wildlife agencies set population objectives routinely for big game and/or large carnivores based on species biology, landowner tolerance, public safety, habitat availability, and social factors, most States do not routinely establish Statewide population targets for avian species like GRSG. GRSG populations respond to climate, weather, and habitat conditions at different and, often, very fine scales. Thus, GRSG numbers vary widely in a relatively short period of time, within individual States and across the range. States manage GRSG, in part, based on male lek counts as an indicator of habitat availability, condition, and other factors. While States support efforts to

estimate and explain populations, fluctuations, and trends, any such effort must recognize and account for the relationship between the species and its habitat. Further, any population metric would have to reflect the natural range of variability, include confidence intervals, and be tied to habitat availability. Ultimately, the best method for determining GRSG viability will be to assess a combination of habitat availability and populations, which are inseparable. The DOI Team recommends that establishing a Statewide or range-wide GRSG population objective or target should be pursued.

iii. The primary issue relative to predation is the recent emergence of predation by species with which GRSG either did not evolve or did not confront in current numbers. Among these are corvid species, such as ravens. Excessive predation by avian and/or mammalian predators may be occurring in localized settings but is not a uniform pressure across the landscape or range-wide. Localized predation can be a significant threat for small, isolated, or reintroduced populations. Even in those circumstances, however, predator control should be simultaneous with efforts to address the underlying reasons for predator population growth or concentration in localized areas of concern for GRSG. Control of multiple factors that provide predator subsidies, such as open landfills or unneeded infrastructure that provides nesting or perching sites, is a low-cost, sustainable strategy. The SGTF requests the DOI work with the States to investigate options for corvid control, including streamlining approval and reporting requirements in compliance with current law and international treaties. It is important that predator control efforts be evaluated for effectiveness to inform future decisions about how to prioritize available funding.

iv. Hunting is an adequately regulated activity managed by States to avoid additive mortality (above and beyond natural annual mortality) so that it does not contribute to population declines. Common techniques implemented by States include short seasons, low limits of take, and permit-only hunt systems. Harvest strategies in many States can be considered more conservative than guidelines suggest. In addition to these conservative strategies, providing hunting opportunities, when appropriate and sustainable, provides an avenue to better help support the use of Pittman-Robertson wildlife restoration grant funding. In turn, this supports a multitude of conservation efforts related to GRSG, including inventory and monitoring, local conservation planning and project implementation, and research, among other endeavors, that provides States with much needed information on the status of the species.

Appendix C provides a summary of potential next steps for wildlife management.

d. Data Management and the Use of Science (Addressing Section 4a of the Order and Other Requests by the DOI Team

Addressing priority science needs of managers and sharing high-quality science and information, including locally collected monitoring and assessment data, among all entities can further the application of a data-driven approach to the conservation and management of GRSG and the sagebrush ecosystem. Continued development and integration of local data and information, peer-reviewed science, and other high-quality information forms the

foundation for management decisions and identifies the need for new science and information. Attributes to assess the quality and reliability of new science and information include peer review, repeatability of methods and analyses, strength of evidence, and relevance to local conditions.

Increasing opportunities and reducing barriers for sharing science, information, and data can help facilitate ongoing GRSG and sagebrush management efforts. Data sharing currently is conducted through multiple mechanisms including one-on-one communication, agency-to-agency agreements, and online data catalogs (both public and private). Updating information sharing processes and procedures across organizations can improve the use of new information, increase the use of shared information during decision-making processes, reduce the potential for conflicting decisions for similar issues, and provide opportunities for inclusion of local and traditional ecological knowledge.

Following a review of submitted input and ongoing conversations with States, the DOI Team makes the following recommendations to increase the use of science and reduce barriers to data sharing (see also Appendix D):

- Implement the "IRFMS Actionable Science Plan."
- Coordinate research efforts among agencies and organizations, including science needs related to human dimensions and economics.
- Develop processes to use data from a variety of sources including peer-reviewed journals, agency data, and locally collected partner information.
- Work to provide policymakers and managers with science and data in a form most useful to decision-making.
- Continue to emphasize the need for locally relevant science and data to inform implementation of management actions.
- Establish data standards and data sharing agreements, resolve barriers to data sharing, and improve procedures for maintaining and updating data.
- Develop methods to gather and use local and traditional ecological knowledge.

V. NEXT STEPS

In addition to recommendations on specific actions, the DOI Team recommends the following next steps:

- Reaffirm DOI and State commitments to the SGTF to assist in coordination of State and Federal sagebrush conservation activities. Review and update the SGTF's charter as needed. Coordinate with individual States to determine the need for and, as appropriate, develop MOUs for plan implementation and mitigation.
- Work with the USFS to fully engage and evaluate the proposed recommendations in this report, considering the USFS's unique plans and associated decisions, laws, and regulations. Work to align recommendations and future actions to the maximum extent possible.
- Continue to work with the States to further refine the options in this report and identify multistate or State-specific solutions as needed.
- In coordination with the SGTF, initiate additional discussions with Congressional delegations, counties, local governments, and tribes, as well as ranchers, landowners, industries, conservation organizations, and other interested parties, to review the issues

and recommendations included in this report, and identify any additional issues or recommendations for consideration. The DOI Team recommends that this outreach begin as soon as practicable after the report is submitted, continuing for approximately 2 months.

- Develop the evaluations, policies, and clarifications identified as short term options in this report to address improvements that can be quickly implemented. Continue to work with the States and other partners to identify other clarifications or policy approaches that could address and resolve issues. This work is recommended to follow the public outreach phase.
- Further evaluate whether clarification and policy actions sufficiently address the issues identified by the States and other partners or if additional actions should be considered. For longer term options that include potential plan amendments, further refine the issues and potential solutions, including evaluating State-specific solutions and assessing potential additive effects of the proposed changes and the continued ability to achieve conservation of GRSG. This work is recommended to follow the public outreach phase.
- Review input from other partners, and make any further adjustments to recommendations at the SGTF meeting scheduled after the public outreach phase (estimated October or November 2017).
- Review short term actions and evaluate the need for additional short or long term actions, including potential plan amendments as appropriate, in collaboration with the SGTF (estimated in January 2018).

APPENDIX A – 2015 GREATER SAGE-GROUSE PLANS AND STATE PLAN CONSISTENCY REVIEW

TOPIC AREA: OIL AND GAS STIPULATIONS, LEASING IM, DENSITY AND DISTURBANCE				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Sagebrush focal areas (SFAs) and no surface occupancy (NSO) stipulations	Determine if SFA designations are required through further work with each State to evaluate whether general habitat management area (GHMA) and priority habitat management area (PHMA) stipulations already provide for the durable and effective conservation of the species.	Complete a crosswalk analysis with the States.	If PHMA/GHMA provide needed durability, potential plan amendment to consider eliminating or reducing the SFAs and changes to stipulations. May be State-specific outcome.	Multistate
General habitat management area (GHMA) stipulations (vary by State)	On a State-by-State basis, complete an evaluation of the GHMA stipulation to determine if a stipulation provides for the conservation of the species, incentive to develop outside of priority habitat management area (PHMA), and informs industry of expectations.	Clarify management flexibility in applying stipulations, and issue State-specific policy as needed; determine if a controlled surface use (CSU) stipulation could be changed without a plan amendment action.	Depending on outcome of short term recommendation, a potential plan amendment to consider changing the CSU may be appropriate.	Multistate (Utah in particular)
Priority habitat management area (PHMA) no surface occupancy (NSO) and waiver, exception, and modification (WEM) language	Work with the States to develop new WEM language for PHMAs, which recognizes the State's mitigation hierarchy, maintains collaborative approach, and removes U.S. Fish and Wildlife Service (FWS) role in approving WEMs. Short term option to clarify which mechanism to modify WEMs is identified as an immediate action item. Then work with the States to engage with partners and stakeholders on the short term evaluation or potential adjustment process.	Determine if the modification of WEMs are plan maintenance or a plan amendment. Evaluate the efficacy of existing WEMs, and work with the States to adjust or add as necessary.	Depending on outcome of short term recommendation, a potential plan amendment to consider changing the WEMs may be appropriate.	Multistate

TOPIC AREA: OIL AND GAS STIPULATIONS, LEASING IM, DENSITY AND DISTURBANCE - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Lease prioritization instruction memorandum (IM)	Clarify to BLM staff that the plans currently allow leasing in all Greater Sage-Grouse habitat categories using GRSG plan lease stipulations. Short term option to clarify to staff leasing is not restricted in GRSG habitat. Identified as an immediate action item by some States.	Clarify that all habitat types are open for leasing. Modify and reissue IM to address other concerns	None at this time	Multistate
	Rescind the national IM. Then issue State-level IMs to address recommended changes to national IM and include State-specific solutions. Short term option identified as an immediate action item by some States.	Rescind the National IM, and develop BLM State-specific IMs that include all habitat types are open for leasing and other State-specific concerns.	If the BLM State-level IMs do not address the issues, then consider a potential plan amendment to address concerns.	Multistate
Density and disturbance	There is variation between the States on what counts as a disturbance and towards a density cap, the level of disturbance that is allowed, and the scales the caps apply to (project or biologically significant unit - BSU). There is a need for a consolidated (BLM/State) process so industry knows where to start and the steps to follow. On a State-by-State basis, develop a crosswalk to explore the potential to develop a density and disturbance process that recognizes State-specific issues and needed flexibilities. ● Include recommendations based on science for the difference in calculation of the cap, or what counts for disturbance and density, and the appropriate scale (e.g., project or BSU).	If no inconsistencies, then solidify through BLM State-level IMs and MOUs to share disturbance data. Clarify/train staff and partners on what types of disturbances are included in the calculation. In cooperation with the State, investigate opportunity to accelerate restoration and recovery efforts in areas in which the caps are being approached.	If inconsistencies, then resolve through using best available science and/or initiate new research to further clarify disturbance and density requirements for different types of uses, which may require future consideration of a plan amendment process.	Multistate

TOPIC AREA: MITIGATION AND NET CONSERVATION GAIN				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Inconsistent mitigation standards	BLM plans have a net conservation gain standard while the State mechanisms have adopted differing standards. There is confusion on the definition of net conservation gain. The States wish to use the State mitigation approach to achieve a seamless mitigation standard and approach across State, private, and Federal lands. States have various definitions for their mitigation standard including net gain, habitat assurance, no net loss, no net loss with conservation benefit, and others. Many of the State standards also account for the risk of the action to achieve the desired environmental benefit. Removing the net conservation gain language creates issues for some States as they have adopted that language as the standard for their State mitigation mechanism. States want to apply mitigation actions on Federal lands while meeting the mitigation principles in the Sage-Grouse Task Force (SGTF) GRSG compensatory mitigation report. Recognize that Federal land users must also comply with State requirements, when applicable. Recognize that the DOI is currently reviewing its mitigation policies, including the compensatory mitigation standards and may issue revised policy, including consideration of a 1:1 ratio, equivalent value, no net loss, or other standard.	Define net conservation gain for the BLM plans. Evaluate and document each State's mitigation approach to determine if it meets the intent of net conservation gain. Consider policy on options to use the State's mitigation standard if it meets the intent of the mitigation standard in the GRSG plans.	If policy does not address the concern, then consider a potential plan amendment to change the net conservation gain standard. Options to further evaluate could include using each State's standard (may vary by State), setting a minimum standard for public lands and using the State standard if it is higher, or setting a standard for public lands while the State standard applies to State and private lands. Evaluate need for plan modifications to comply with DOI policy on mitigation.	Multistate

TOPIC AREA: MITIGATION AND NET CONSERVATION GAIN - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
State mitigation plans	Use the State mechanisms that conform to the SGTF, Sage-Grouse Mitigation Report to ensure consistency and application of mitigation requirements including the use of debit and credit calculations.	Complete an MOU with each State on application of the State mitigation approach if it is consistent with the BLM plans and meets the principles in the SGTF Mitigation Report and DOI policy If MOUs do not address the issues, develop policy providing direction on how to use each State's mitigation approach.	None at this time	Multistate
Regional mitigation strategies	In coordination with the States, determine where mitigation should occur based on what would be most beneficial for the species.	Include in the State Mitigation Plan MOU.	None at this time	Multistate

TOPIC AREA: HABITAT ASSESSMENT FRAMEWORK, HABITAT OBJECTIVE TABLE EFFECTIVENESS MONITORING				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
How are habitat objectives; plan effectiveness reporting; Assessment, Inventory, and Monitoring (AIM) data; and Habitat Assessment Framework (HAF) assessments related?	Clarify how to integrate habitat objectives, land health standards, and land use plan effectiveness. Clarify how to use existing data, legacy data, and other monitoring efforts, specifically AIM and HAF during the land health standards evaluation and management decisions. Clarification on scales and the appropriate data for use at each scale. HAF and AIM are one piece of the puzzle; money and effort needs to be allotted to other monitoring as well. Issuance of policy identified as an immediate action item by some States.	Issue IMs to provide additional clarification and training on using habitat objectives to inform evaluation of land health standards; use habitat objectives at the land use plan scale to evaluate plan effectiveness. Continue outreach and training on use of AIM data in conjunction with other data and monitoring information.	None at this time	Multistate
Implementation of the Habitat Assessment Framework (HAF)	Clarify how the field should prioritize HAF assessments (e.g., areas that have hit soft or hard triggers, lesser quality habitat). Clarify how to integrate relevant studies and supplemental data with AIM and HAF into land health standards. Clearly articulate the use of HAF for all resource decisions, not just grazing. Integrate training, including how to determine if adequate data is available, with the BLM, other agencies, and States, including the Department of Agriculture.	Issue new HAF IM to clarify the purpose of the HAF and the relationship between AIM and HAF, as well as how these relate to the habitat objectives table. Internal and external training once this relationship has been clarified.	None at this time	Multistate

TOPIC AREA : HABITAT ASSESSMENT FRAMEWORK, HABITAT OBJECTIVE TABLE EFFECTIVENESS MONITORING - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Implementation of the Habitat Assessment Framework (HAF) - Continued	Explore use of and continue the development of tools to streamline habitat assessments (e.g., remote sensing) for rapid assessment of habitat conditions. Issuance of new HAF IM identified as an immediate action item by some States.	Continue to learn from the pilot studies (e.g., Oregon State and Transition Model) and other tools to streamline habitat assessments, and advance or integrate outcomes into BLM's approach to HAF and related work through IM or other policy clarification and training.	None at this time	Multistate
Proper use of land use plan effectiveness data (AIM)	Provide transparency and ensure understanding of the intended use of AIM data. Review plan effectiveness policy to ensure that lessons learned are incorporated. Clarify that additional funding is set aside for AIM data collection so it is not taking money away from other monitoring efforts. Improve coordination between the National Operations Center (NOC) and field offices. Clarification was identified as an immediate action item by some States.	Issue clarification that addresses concerns; provide training.	None at this time	Multistate

TOPIC AREA : HABITAT ASSESSMENT FRAMEWORK, HABITAT OBJECTIVE TABLE EFFECTIVENESS MONITORING - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Adjusting the habitat objectives tables	Codify guidance issued on habitat objectives tables in an IM which clarifies the appropriate use, scale, and importance of the ecological site and the current ecological state of the monitoring site. Define a process to allow updates to habitat objectives tables as new information becomes available. Ensure objectives in habitat objectives tables are consistent with unique landscapes and habitat conditions (e.g., Utah captures variations through various delineations). Explore an option to match the habitat objectives with the States' plan, where available (not all States have quantitative objectives). Explore the possibility to remove the habitat objectives tables from the plans, and determine what would be required to address the habitat requirement, as described in 43 CFR 4180. Clarification was identified as an immediate action item by some States.	Policy and clarification on the intent, purpose, and use of habitat objectives tables, and flexibility provided in the plan and BLM processes to adjust the habitat objectives based on ecological site potential. Investigate opportunity for plan maintenance to further explain flexibility in plans.	Continue research on habitat requirements for GRSG, if new science warrants changes in habitat objectives beyond flexibility currently provided in plan. An amendment to consider updating habitat objectives may be appropriate.	Multistate

TOPIC AREA: ADAPATIVE MANAGEMENT				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Causal factor analysis	Work with States to identify a causal factor analysis process for both hard and soft triggers.	Work with each State to complete a process for causal factor analysis. Clarify in IM that causal factor analysis is required for hard and soft triggers.	None at this time	Multistate
Reversion of trigger responses when conditions improve	Work with States on process to revert to previous management, or change the response based on positive habitat/population response.	Evaluate plans to determine which do not have a "reversion" clause and whether each plan provides any flexibility to address through policy.	Potential plan amendment to consider allowing reversion to less restrictive decisions when habitat/population recovers to above original trigger.	Multistate
Implementation of hard trigger responses	Work with States to develop a process to ensure responses to hard triggers are pertinent to the cause of the population or habitat decline. Short term option was identified as an immediate action item by some States.	Work with States on development of the process in the recommendation.	Potential plan amendment to consider options for alternative approaches to hitting a hard trigger, such as a temporary suspension of authorizations while causal analysis occurs and responses are developed, or implement hard trigger responses while causal analysis occurs and release those not needed to address the threat.	Multistate
Adaptive management policy (IM 2016-140):	Modify IM 2016-140 or issue BLM State-specific IM to address advance coordination with the States and partners beginning with Step 1 in the IM.	Modify the current IM.	None at this time	Multistate

TOPIC AREA: ADAPATIVE MANAGEMENT - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Research and data collection needs	Emphasize working with States and Federal partners to identify a rapid assessment process that could identify when a population or habitat trigger is being approached. Identify appropriate management actions to be taken immediately to address the decline in population or habitat and avoid the need to implement predefined plan adaptive management responses. Research could help identify multiprong impacts to populations. Clarify the requirements data. Must meet in order to be used to inform the causal factor analysis.	*Defer to "Data Management and the Use of Science" topic in the report for recommendation.*		
Sagebrush focal areas (SFAs) are inconsistent with the state plan	Clarify that adaptive management triggers should not be tied to SFAs in any way, and reiterate the habitat management hierarchy set forth in the Idaho State Plan.	Clarify triggers are not related to SFA boundaries.	Potential plan amendment to consider removing SFAs, as needed.	Idaho

TOPIC AREA: GRAZING				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Need to clearly articulate that proper livestock grazing is compatible with enhancing or maintaining Greater Sage-Grouse (GRSG) habitat.	Modify language to communicate that properly managed grazing is compatible with GRSG habitat. Focus on identified threats (fire and invasive species/fragmentation). Should not be spending a lot of time monitoring and inspecting allotments that are providing good quality sagebrush habitat. Incorporate guidance for potential use of livestock grazing as a tool. Incentivize stewardship and grazing practices that result in improved conditions for GRSG.	Revise and clarify IMs related to grazing. Clearly articulate that proper livestock grazing is compatible with and can be beneficial to manage for quality GRSG habitat. Revise prioritization IM to develop methods to quickly assess and report conditions on areas where proper grazing is occurring and supporting quality habitat, and focus on problem areas. Continue to move forward with targeted grazing and outcome-based grazing pilots to further demonstrate methods to use grazing to control fuels and improve habitat condition. Clarify existing policy and regulations that allow animal unit months (AUMs) to increase based on forage availability.	None at this time	Multistate

TOPIC AREA: GRAZING - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Causal factor analysis must be completed and grazing determined to be a causal factor prior to making changes to grazing permits.	Follow current process to complete a causal factor analysis prior to modifying grazing permit.	Reinforce/offer training on how to modify a permit as described in current guidance.	None at this time	Multistate
Sagebrush focal area (SFA) prioritization strategy	Incorporate flexibility in the allotment prioritization process.	Revise allotment prioritization IM. Develop a strategy to use existing data for a rapid assessment in SFAs.	None at this time	Multistate
Removal of livestock grazing from research natural areas (RNAs)	The Oregon Approved Resource Management Plans and Amendments (ARMPA) identifies key RNAs that will be unavailable to livestock grazing. While the general issue of research within RNAs, including with varying levels of livestock use, is not something Oregon opposes, the State Action Plan does not include having RNAs unavailable for grazing. The State is concerned about potential loss of animal unit months (AUMs), economic losses, potential effects to habitat, and impacts to livestock operators on allotments containing RNAs that are subject to being unavailable for grazing, especially if unsupported by indications of adverse habitat impacts caused by livestock grazing management.	Work with Oregon to evaluate RNAs and grazing closures.	To be determined based on outcome of short term option.	Single State (Oregon)

TOPIC AREA: GRAZING - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Voluntary grazing permit relinquishment and relationship to future grazing, grass banks, or other uses.	When grazing permits or leases are voluntarily relinquished or where allotments otherwise become vacant, current Oregon ARMPA language would make retirement of permits an option under these circumstances. The steps BLM takes pursuant to current and ARMPA-adopted language at the point in time following voluntary relinquishment or vacancy should not run counter to State interests in working lands and habitat health.	Ensure LG/RM 15 language in the Oregon ARMPA is consistent with regulation and as needed develop State-specific policy on its use.	To be determined based on outcome of short term option.	Single State (Oregon)
Habitat objectives table is too rigid and prescriptive to cover the broad range of landscapes in the West.	*See "Habitat Assessment, Habitat Objectives Tables, and Effectiveness Monitoring" section in the report.*			
Lek buffers for range improvements may be inconsistent with State plans.	*See the "Other Minerals, Energy, and Lands" section in the report.*			

TOPIC AREA: EXCLUSION/AVOIDANCE LAND USE PLAN DESIGNATIONS				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Designation of exclusion areas may sometimes differ from the State's approach.	States take various approaches to what activities to exclude from certain habitat types and in their exemption processes. Working with State partners, evaluate if the States' plans would provide durable and effective conservation while providing exceptions to activities.	On a State-by-State basis, complete an evaluation of State approaches and plan flexibilities.	If short term flexibilities do not resolve concerns, evaluate a potential plan amendment to consider adjusting exclusion boundaries and/or evaluate different restrictions for different uses based on threats and impacts.	Multistate
Maintenance and production activities	Need to provide clarification that maintenance and production activities for already authorized uses are allowed in the plans.	Provide IM to allow for maintenance of existing development.	None at this time.	Multistate
Mineral materials sales (sand and gravel)	Allow mineral material sales in priority habitat management areas (PHMAs) under the use of the State's stipulations.	Conduct an evaluation of mechanisms to provide conservation while accommodating need for mineral material sales.	Based upon the evaluation, a plan amendment may be necessary.	Multistate
Valid existing rights	Need to clarify under what circumstances or how the plans recognize valid existing rights.	Provide clarification to staff, partners, and industry so there is a clear and consistent understanding of application of plan actions to valid existing rights and existing authorizations.	None at this time.	Multistate

TOPIC AREA: EXCLUSION/AVOIDANCE LAND USE PLAN DESIGNATIONS - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Misinterpretation of "avoidance" in the field	Need to develop training and policy to ensure consistent interpretation and approval of activities in an avoidance area (see Colorado and Nevada for examples) that allows activities with the application of the mitigation hierarchy.	Provide clarification for the definition of avoidance area including resources that use different terminology. Issue State-specific policy as needed to explain avoidance criteria and how to evaluate the need to provide exceptions to allow uses. Provide training for staff and partners for how to implement avoidance areas.	Determine if existing management flexibility on avoidance areas are adequate without a potential plan amendment.	Multistate
Plans do not recognize the State's guidance that some activities are "de minimus" (negligible or no impact to GRSG).	Need to develop an approach that streamlines approvals for projects with negligible or no impact to GRSG. Long term option was identified as an immediate action item by some States.	Evaluate "de minimus" activities as defined in State plans, and evaluate against Federal plans, laws, and regulations. Determine if any tools are available for use in Federal processes to streamline approval of these activities. Possible development of templates and streamlined processes to standardize the evaluation of projects.	Development of programmatic National Environmental Policy Act (NEPA) documents to analyze the impacts for tiering of future projects. Identification of categorical exclusions for "de minimus" activities.	Multistate

TOIPIC AREA: REQUIRED DESIGN FEATURES (e.g., TIMING AND TALL STRUCTURES)				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Need greater flexibility in using State-developed required design features (RDFs).	Need to streamline the process so that known and effective design features, outside those identified in the current plans, can be used without further analysis by the BLM. Design features selected should help to encourage development in lower quality habitat (e.g., in general habitat management areas instead of priority habitat management areas).	Clarify that the plans provide flexibility to select RDFs appropriate to project and to use other RDFs, including State RDFs, if they achieve equal or better conservation purpose.	None at this time	Multistate
Requirement to include discussion on all required design features (RDFs) in the project-level NEPA document	Need to allow the flexibility to only apply those design features that are appropriate to a project without having to justify why other design features were not used.	Evaluate need for templates and streamlined processes to standardize the evaluation of design features.	None at this time	Multistate
Lack of consistent application of required design features (RDFs) in the field.	Provide clarification to staff and external partners when and how to use RDFs (including timing and tall structures).	Provide guidance that RDFs are not a "one size fits all" and do not apply to all activities.	As evaluation of RDFs continues, a plan amendment may be considered to reflect which RDFs are commonly used, to align with measures in State plans, and avoid repeated consideration of RDFs that are never used.	Multistate

TOPIC AREA: LEK BUFFERS				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Lek buffer distances are incompatible with State buffer distances for some types of development (e.g., range improvements).	Use the best available information to inform decisions in habitat, which could include using the lek buffer science as well as adjusting the size of the buffer based on local data and information. Suggest a two-step process of clarifying justifiable departures and then streamline the process using local information. Need to revisit the scientific literature pertaining to lek buffers ahead of initiating new science for buffers.	Provide clarification to staff and external partners regarding the use of lek buffers and justifiable departures. Evaluate each plan to ensure adequate flexibility to address project-specific information is available. Revisit the scientific literature pertaining to lek buffers.	If needed, initiate additional research to evaluate lek buffer distance requirements for applicable uses, and identify any potential changes to plans. If the developed policy does not provide the mechanism to address the issue, then evaluate a potential plan amendment or maintenance action to consider adjusting lek buffers based on new science and high quality information.	Multistate
Clarify how to apply lek buffers (e.g., distance for National Environmental Policy Act analysis vs. distance to restrict activities).	Provide clarification to staff and external partners for how the lek buffer appendix and record of decision (ROD) description should be used and to potentially adjust lek buffers noted in the plan based on project-specific information.	Develop policy to ensure consistent application and interpretation, and clarify language in ROD and plan. Evaluate need for templates, streamlined processes, and programmatic analysis to standardize the evaluation of lek buffers, including justifiable departures, in project-level analysis.	None at this time	Multistate

TOPIC AREA: HABITAT MANAGEMENT BOUNDARIES (INCLUDING SAGEBRUSH FOCAL AREAS)				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Sagebrush focal area (SFA) designations	Remove all SFAs and the management actions tied to SFAs. Short term option was identified as an immediate action item by some States.	Determine the habitat type and associated management actions that would be applicable to the area to ensure durable and effective conservation of the species.	Potential plan amendment to consider removing SFA designation and either replace SFA management actions with the underlying habitat type (e.g., PHMA, IHMA, GHMA) and associated management actions, or change those SFA management actions as described elsewhere in this table.	Multistate
Need flexibility to change priority habitat management area (PHMA)/general habitat management area (GHMA) boundaries.	Habitat is being updated regularly based on additional on-the-ground surveys and improved understanding of GRSG habitat needs. Plans do not provide the flexibility to adopt these new habitat areas and apply the appropriate management actions to those habitats. Add flexibility for future updates when new science would cause changes, such as during the 5-year plan review cycle. Short term option was identified as an immediate action item by some States.	Evaluate the ability to adjust PHMA/GHMA boundaries and associated management decisions to match revised habitat maps without a plan amendment. Develop policy on how to apply management decisions, such as stipulations, waivers, exceptions, modifications, exclusion and avoidance, etc., in areas where PHMA or GHMA plan allocations do not match habitat maps.	Potential plan amendment to consider aligning PHMA, GHMA, IHMA, etc., and associated management actions to revised habitat maps and develop criteria for making future adjustments (e.g., when habitat maps have been adjusted through on-the-ground surveys, improved understanding of habitat needs, etc.) to habitat management area boundaries.	Multistate

TOPIC AREA: HABITAT MANAGEMENT BOUNDARIES (INCLUDING SAGEBRUSH FOCAL AREAS) - CONTINUED				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
General habitat management area (GHMA) is inconsistent with Utah's plan.	GHMA is unnecessary in Utah because the areas have few birds and leks and are already heavily impacted by development.	Evaluate the Federal plan to determine if durability and conservation of the species can be achieved without GHMA designations and associated GHMA management actions or with revised GHMA boundaries. Also, consider the application of the State mitigation plan to address concerns with habitat impacts in areas currently allocated as GHMA.	Based upon the short term outcome, may need to pursue a potential State-specific plan amendment.	Utah specific

APPENDIX B – WILDLAND FIRE AND INVASIVE SPECIES ISSUES

TOPIC: WILDLAND FIRE AND INVASIVE SPECIES	
Issue/Comment	**Recommended Additional Steps**
Not all affected States provided feedback.	Incorporate additional information received from States and other stakeholders.
Continue to address challenges and barriers to wildfire and/or invasive species management, and provide recommendations to improve management.	Continue work on unfinished/incomplete/ongoing "Integrated Rangeland Fire Management Strategy" (IRFMS) action items. Complete the Western Association of Fish and Wildlife Agencies (WAFWA) "Sagebrush Conservation Strategy."
Continue engaging other organizations in support of the "Integrated Rangeland Fire Management Strategy."	Support Intermountain West Joint Venture and others to implement the "Sagebrush Ecosystem Communications Framework" (SageWest). Support development and implementation of WAFWA's "Sagebrush Conservation Strategy." Support the development and implementation of Western Association of State Departments of Agriculture's (WASDA) "Western Invasive Weed Action Plan." Support implementation of the "National Seed Strategy for Rehabilitation and Restoration." Support the memorandum of understanding between the BLM, USFS, and NRCS to improve coordination with private landowners, and promote cross-boundary projects that address invasive species and wildland fire.
Increase support to wildland fire cooperators.	Reinstate grant authority and authority to surplus excess equipment to cooperators. Address the General Services Administration policy that prevents excess Federal firefighting equipment (e.g., engines, radios) from going directly to partners, such as rangeland fire protection associations (RFPAs) and rural fire departments (RFDs). Explore options for shared funded positions to enhance cooperative efforts (e.g., RFPA support). Continue to support and develop additional RFPAs.

TOPIC: WILDLAND FIRE AND INVASIVE SPECIES	
Issue/Comment	**Recommended Additional Steps**
Consider related Western Governors' Association (WGA) efforts that enhance implementation of the "Integrated Rangeland Fire Management Strategy."	Further action items in the WGA's National Forest and Rangeland Management Initiative, such as: expanding good neighbor authority use; developing comprehensive (wildland fire) protection agreements; applying consistent fire operations best management practices; coordinating Federal, State, and local partners fire response in sagebrush rangelands; and flexibilities in grazing management.
Improve coordination with States on fuel/vegetation treatments, wildfire response, and post-fire recovery.	Promote increased coordination and collaboration, including through the framework in the "National Cohesive Wildland Fire Management Strategy."
Ensure funding for fire, fuels, and restoration projects.	Explore options for multijurisdictional funding, multiyear funding, and shared funding across jurisdictional boundaries, including private and public lands for fuels/vegetation and post-fire recovery projects. Continue to move to a risk-based funding approach in the DOI. The risk-based funding modeling shows that the BLM receives substantially less funding in fuels and fire preparedness than its fire risk warrants. The BLM should be receiving between 65-75% of fuels and fire preparedness funding but is currently receiving only about 50%.
Streamline and improve restoration success.	Conduct research, testing, and implementation, particularly restoration projects (e.g., biopesticides and herbicides, seed coating technology, prescribed fire use). Continue investigating the use of targeted grazing and other tools to manage fuels and create fuels breaks.
Expedite use of emerging weed treatment technologies.	Work with appropriate Departments, agencies, offices, and companies to gain approval of concurrent Environmental Protection Agency (EPA) registration and field-testing of biopesticides and chemical herbicides to incorporate DOI-specific field testing needs into the early experimental testing conducted prior to registration. This would reduce the amount of time to use a pesticide or herbicide after receiving EPA registration

APPENDIX C – WILDLIFE MANAGEMENT

TOPIC: WILDLIFE MANAGEMENT	
Issue or Need	**Recommended Additional Steps**
Captive breeding and population augmentation	If captive rearing is pursued, efforts should use experimental design to build on already-available information and data, including addressing knowledge and data gaps, to effectively rear Greater Sage-Grouse (GRSG) in captivity for successful release or reintroduction into the wild. Adhere to all relevant State laws and other authorities for potential releases/reintroductions.
Predator control	Continue to communicate outcomes of past predator control efforts, including methods, species controlled, and the short- and long term results. Conduct additional research into both lethal and non-lethal predator control techniques.
Population targets and species management	Continue to support collaborative efforts with the States to develop rangewide, state-level, and local population estimates. Support development of a framework to assess GRSG population trends, determine biological effectiveness of management actions, and identify emerging issues to adaptively conserve the species and its habitat. Work collaboratively with the States and Federal partners to develop new or improve existing processes to evaluate GRSG population information, habitat conditions, and conservation efforts.

APPENDIX D – SCIENCE AND DATA ISSUES

TOPIC: SCIENCE AND DATA ISSUES	
Issue/Comment	**Recommended Additional Steps**
Address priority science needs, and increase opportunities for coordination and sharing of science and research efforts.	Implement the "Integrated Rangeland Fire Management Strategy Actionable Science Plan." Actions include: coordination of research efforts (prioritization, funding, implementation, and analysis) among State and Federal agencies and other organizations; implementation of research efforts, as funding allows; and development of a tracking mechanism for publications and products. In collaboration with the Western Association of Fish and Wildlife Agencies (WAFWA) Sagebrush Science Initiative and other similar efforts, identify and prioritize science needs related to human dimensions and economics in the sagebrush ecosystem, and address prioritized science needs, as funding allows. Develop processes to receive, aggregate, and review monitoring data and other information from entities other than Federal or State agencies to ensure it meets quality, reliability, and relevance standards for use. Develop processes to receive, aggregate, and review monitoring data to identify new potential science needs that can be addressed using formal experimental or other scientific investigations. Work to increase development of information products that translate and synthesize peer-reviewed science into more accessible formats for decision-makers, and improve access to peer-reviewed science journals for those who need that level of information. Continue to emphasize the need for locally relevant peer-reviewed science, high-quality information, and local on-the-ground data that is pertinent to implementation of management actions. Evaluate use of the Sage-Grouse Task Force (SGTF) as the coordinating body for the intersection of science with policy and management and to identify priority science and data needs to inform management and policy.

TOPIC: SCIENCE AND DATA ISSUES	
Issue/Comment	**Recommended Additional Steps**
Increase opportunities and reduce barriers to data sharing.	Establish data sharing agreements between Federal and State agencies, tribes, and other entities. Develop and maintain a multiagency directory of data stewards and technical experts to improve coordination and collaboration between Federal and State agencies, tribes, and other entities. Improve procedures for maintaining and updating data/information in a mutually developed data catalog(s), ensuring that nonproprietary/sensitive tabular or geospatial data can be shared and accessed. Increase use of common communications tools, such as SageWest and Great Basin Fire Science Exchange, to increase awareness of new information. Establish and communicate minimum data standards and information requirements for information included in shared data catalogs and information gathered by third party sources for potential inclusion in agency databases or use in decision-making. Identify multiscale spatial units that could be used to aggregate data to increase opportunities for use of information when raw data contains sensitive or proprietary information, when appropriate. Continue to work with the States and other partners to identify barriers to data sharing and options to remove those barriers. Work with the States and tribes to explore options to improve or develop data sharing mechanisms for capturing observations of species, as well as local and traditional ecological knowledge.

APPENDIX E – OTHER ISSUES IDENTIFIED NOT SPECIFICALLY RELATED TO THE 2015 SAGE-GROUSE PLANS

OTHER ISSUES IDENTIFIED NOT SPECIFICALLY RELATED TO THE 2105 SAGE-GROUSE PLANS				
Issue	**Discussion**	**Short-Term Option**	**Long-Term Option**	**Scale**
Reserve common allotments	Reserve common allotments are a tool available on public lands that could be used to provide alternative locations for grazing permittees/leases when their allotment is unavailable due to fire, restoration activities, or other reasons. However, there are concerns that designation of allotments as reserve common allotments could take those allotments out of regular use and result in economic loss. Further investigation with the BLM, Sage-Grouse Task Force (SGTF), ranchers, and other stakeholders is warranted to determine if and how reserve common allotments should be considered.	Engage with the SGTF, counties, Public Lands Council, ranchers, and other stakeholders to determine if and how reserve common allotments should be used.		Multistate
Water rights	There is concern that the BLM may be managing water rights they do not own by limiting new water development projects and modifications to existing developments. This may be a result of conflict between State water laws and BLM policy, but this issue is not expressed in the 2015 Sage-Grouse Plans.	Provide further investigation and clarification, as needed.		Multistate: Utah, Idaho, Nevada
Changes in grazing management following natural events	Clarify options for changes in grazing management following natural events if continuation of grazing would result in loss of habitat. Provide flexibility at the state, district, or field level.	Provide further investigation and clarification, as needed.		Multistate
Wild horse and burro: appropriate management level (AML) achievement	Verify that the BLM has the tools and funding to achieve AML across the West. Evaluate priorities (e.g., Priority given to sagebrush focal areas (SFAs) potentially limits funding and staff to initiate gathers in priority habitat management areas (PHMAs)).	BLM state offices reassess their 3-5 year gather plans to validate AML will be met. Collaborate with States. Elevate unresolved issue to management.	Legislative solution and additional increased funding is necessary for long term resolution.	Multistate
Herd management areas and associated appropriate management level (AML) may need to be analyzed for adjustments	Implement solutions for reaching current AML prior to reevaluating herd management areas and AML.	Implement solutions to reach current AML.	Analyze boundaries and AML adjustments in the future once current AML is reached.	Multistate

APPENDIX F: TECHNICAL WHITE PAPERS FROM THE WESTERN ASSOCIATION OF FISH AND WILDLIFE AGENCIES

White Paper Titles

1. Augmenting Sage-Grouse Populations through Captive Breeding and Other Means (3 pages)

2. Population and Habitat-Based Approaches to Management of Sage-Grouse (2 pages)

3. Predator Control as a Conservation Measure for Sage-Grouse (2 pages)

4. Hunting Sage-Grouse, Impacts and Management (2 pages)

5. Literature Cited in WAFWA Tech. Committee White Papers on Predator Control, Captive Breeding and Population and Habitat Management

AUGMENTING SAGE-GROUSE POPULATIONS THROUGH CAPTIVE BREEDING AND OTHER MEANS

WESTERN ASSOCIATION OF FISH AND WILDLIFE AGENCIES

Augmentation of sage-grouse populations has been a management strategy used by state wildlife agencies in limited circumstances since the 1930s. Augmentation has been employed to bolster small and isolated populations, to re-establish populations in historic habitats, or to establish new populations. Augmentation for these purposes has been conducted through transplants of adult and yearling birds, usually trapped on or near leks. Reese and Connelly (1997) reviewed published literature and unpublished reports describing 56 transplants of 7,200 individual sage-grouse conducted in seven states and one Canadian province prior to 1997. They concluded only transplants in Colorado, Idaho, and Utah appeared successful, and populations remained small. More recently, Colorado Parks and Wildlife (CPW) has demonstrated some success enhancing genetic diversity of small populations by translocating Gunnison sage-grouse from a source population in the Gunnison Basin to smaller satellite populations. The Utah Division of Wildlife Resources coupled predator control with a transplant of sage-grouse into a population near Strawberry Reservoir with some success (Baxter et al. 2007).

Reasons for relatively low success rates for transplants are complex and not well documented or necessarily understood. Commonly, large post-release movements can lead to high mortality, and hens may not breed or attempt to nest in the spring following release. In general, if environmental conditions that precipitated sage-grouse declines have not been mitigated, transplants of additional and locally naïve birds is not likely to succeed. Refinements to transplant protocols to address these issues, such as supportive predator control (Baxter et al. 2007), artificial insemination prior to release (Mathews et al. 2016), and transplants of juveniles or yearlings are being incorporated in augmentations and will likely increase success rates.

Sage-grouse have been maintained, hatched and bred in captivity successfully, but only in research settings (Pyrah 1961; Johnson and Boyce 1990, 1991; Spurrier and Boyce 1994, Huwer 2004; Oesterle et al. 2005; Huwer et al. 2008; Thompson et al. 2015; Apa and Wiechman 2015, 2016). Sage-grouse captured in the wild do not adapt well to captive conditions (Ligon 1946, Pyrah 1961, Oesterle et al. 2005). Many adult, and to a lesser degree juvenile, sage-grouse brought into captivity are flighty and stressed, which leads to high mortality rates (Remington and Braun 1988, Oesterle et al. 2005, Apa and Wiechman 2015). Consequently, the most effective approach to establishing a captive breeding flock would start with collection and incubation of eggs from wild nests. Large-scale, programmatic captive breeding efforts have never been attempted for sage-grouse. Attwater's prairie-chicken, listed as endangered since 1967, are sustained through a captive breeding (at seven facilities) and release program facilitated by the U.S. Fish and Wildlife Service. They have effectively been extirpated from almost all of their former range and persist on about 200,000 fragmented acres.

There has only been one published study that evaluated survival of sage-grouse chicks produced in captivity and released to the wild (Thompson et al. 2015). In this study, 1-10 day-old sage-grouse chicks produced in captivity from wild-collected eggs were released to radio-marked hens with an existing brood. Adoption rates overall were 89%; releases in the evening and of chicks younger than 5 days were the most likely to result in successful adoption. Survival of adopted chicks was comparable to that of wild chicks. Although successful, this technique is limited to situations where surrogate hens with broods are available and locatable at short notice (i.e., radio-marked). A more generally applicable approach would be to raise chicks to 12-16 weeks old and release them when they are capable of surviving without a brood hen. There has been no research conducted on survival rates of juvenile (12-16 week old) sage-grouse raised in captivity and released to the wild. Colorado Division of Wildlife did successfully rear Gunnison sage-grouse chicks in captivity to 5- and 7- weeks post-hatch when they were released to the wild,

however, none survived (T. Apa, pers. comm.). Survival of male and female wild juvenile sage-grouse in two study areas in Colorado was only 61% from 1 September to 31 March (calculated from Apa et al. 2017). Based on literature related to survival of juvenile ring-necked pheasant over-winter, survival of captive-bred juvenile sage-grouse is likely to be much lower than that of wild juveniles.

The number of sage-grouse or sage-grouse eggs needed to provide 50 sage-grouse for augmentation purposes (a relatively small number) at the beginning of the breeding season from translocation and captive rearing, and the number of birds or eggs required from source populations for each method can be estimated for illustrative and comparative purposes using published estimates of survival, hatchability, and re-nesting rates of wild hens (Table 1). A captive flock of 50 to 150 hens would be required to produce the 429-1,286 eggs needed to produce enough juveniles for release at 12 weeks of age that would result in 50 birds alive and able to breed in March. This estimate assumes post-release survival rates between 10% (based on experiences with game farm pheasants) and 30% (best case; based on Attwater's prairie-chicken long-term average survival given extended soft release protocol and supportive predator control). Establishing a captive flock of this size would require collecting 123 to 369 eggs from the wild, under the simplifying assumption that all birds surviving to 12 weeks survive to lay clutches (this likely greatly overestimates contribution of captive-reared birds to reproduction as Leif (1994) found that captive-reared hen pheasants contributed less than 10% of the reproductive output that wild hens did given much lower survival during the nesting and brood-rearing period and lower nest initiation/incubation rates. There is potential for impacts to source populations in the establishment of a captive flock large enough to provide the number of eggs needed (Table 1). This would be an initial impact that would not recur, although additional removals from source populations would be expected to offset inbreeding depression and loss of genetic diversity in captive flocks.

Number of Sage-grouse or sage-grouse eggs needed to result in 50 sage-grouse at start of breeding season (31 Mar)

Method	Hatchability	Survival to release	Post-release survival to 31 Mar.	Number of birds or eggs needed	Net Removal from source population
Spring transplant	NA	0.95	0.50	105 birds	105 birds
Collect wild eggs, release progeny ≤ 10 days old	0.745	0.792	0.22	378 eggs	239 eggs
Collect wild eggs, release progeny ~ 12 weeks old	0.745	0.52	0.1-0.3	429-1,286 eggs	272-816 eggs
Eggs from captive flock, release progeny ≤ 10 days old	0.565	0.792	0.22	498 eggs	443 eggs
Eggs from captive flock, release progeny ≥ 12 weeks old	0.565	0.52	0.1-0.3	565-1696 eggs	503-1508 eggs

It is likely that with experience, hatchability and chick survival in captive-rearing facilities could be improved, which would reduce the number of eggs needed somewhat. Sage-grouse are determinate layers, meaning each individual female will contribute only about 7-10 eggs per year. That, along with relatively high chick mortality and juvenile mortality following release suggests relatively large breeding flocks would need to be maintained and periodically augmented.

Other Considerations. Collection of eggs and/or adult sage-grouse would require permits from state wildlife agencies and, if taken from Federal land, from land management agencies. State regulations, laws and attitudes about private possession of wildlife vary, so this may or may not require regulatory change or legislative approval based on the state. Sage-grouse of all ages are very susceptible to West Nile Virus (WNv), so if a captive flock is established precautions should be taken to prevent exposure of birds to mosquitoes that may carry the WNv by physical exclosures or placement of the facility in areas where WNv is not prevalent. Captive sage-grouse also seem susceptible to salmonella, aspergillosis, and other bacterial, fungal, and viral diseases, so precautions should be taken to prevent introduction of these diseases into wild populations if captive birds are released. Captive breeding facilities for Attwater's prairie-chicken have experienced outbreaks of Reticulendotheliosis viruses (REV), which has resulted in transmission to wild birds upon release (Morrow 2017).

Conclusions

- Sage-grouse can be artificially incubated, hatched, reared, maintained, and bred, and will produce viable eggs in captivity.
- Relatively low hatchability and survival rates in captivity suggest egg collections from wild clutches could be substantial to produce a sizable captive flock for captive egg production.
- Release of 1-5-day old captive-reared chicks to existing brood hens is effective, but is not likely to be a strategy that could be scaled up. Survival of sage-grouse juveniles released at 8-12 weeks has not been evaluated but should be evaluated if releases at this age are contemplated.
- Techniques for captive rearing of sage-grouse are still in their infancy although significant strides have been made in the last 10 years. Methods associated with artificial insemination, controlling bacterial disease, disease prevention and control, and other aspects of husbandry need additional research. Zoos or other conservation partners with a similar mission, in collaboration with state or provincial wildlife agencies, may be in the best position to fund and staff this kind of research.
- Pending refinement and demonstration of the effectiveness of captive breeding and release of sage-grouse, other approaches to augmentation appear to be more certain and likely to be less costly and impactful to source populations.
- Sage-grouse population size varies substantially over time in response to environmental stochasticity. Augmentations by any means are not necessary for recovery from declines in relatively large contiguous habitats in good conditions. Augmentations are unlikely to have any success in small and isolated populations until and unless the environmental conditions that precipitated sage-grouse declines have been mitigated.

Literature cited can be found under the Sagebrush Ecosystem Initiative tab at wafwa.org

WAFWA
Western Association of Fish & Wildlife Agencies

Delivering conservation through information exchange and working partnerships

Interest in establishment of population goals, and use of population-based approaches for management of sage-grouse is high, but raises questions about feasibility, efficacy, and authorities. Sage-grouse are uniquely adapted to, and dependent on sagebrush habitats (Strategy 2006). Management approaches must include conservation of seasonal sagebrush habitats to be successful, a point emphasized in the Range-wide Sage-Grouse Conservation Strategy developed by the Western Association of Fish and Wildlife Agencies: "The overall goal of the range-wide Strategy is to maintain and enhance populations and distribution of sage-grouse *by protecting and improving sagebrush habitats and ecosystems that sustain these populations* (emphasis added).

When managing State or Federal trust species, a mix of habitat- and population-based approaches is typically employed. Population-based approaches are used in several situations. First, for species of economic importance where harvest is the predominant impact on populations: deer, elk, pronghorn, etc. Population objectives are typically set through some sort of public process and attempt to balance hunter demand with concerns relative to habitat or game damage. Population-based approaches are also used for many conservation reliant species, particularly endangered species with recovery plans. Typically, population and habitat goals are established, and potentially the full suite of habitat and population tools may be employed to overcome threats, including predator control and captive breeding. Attwater's prairie chicken are a good example of this. Finally, population-based tools are employed by states when recreational demand exceeds or creates demand, for example state (or private) game farm production and release of native or non-native species such as pheasants, rainbow trout, walleyes, etc.

Sage-grouse have become a conservation reliant species, at least to deter listing under the Endangered Species Act. Setting and monitoring progress towards state-level (or other) population goals (if technically feasible) could be an effective way to:

1. Ensure (through state public processes) public participation in setting population objectives and a transparent view of real and opportunity costs these goals represent
2. Prioritize investment of conservation dollars (to areas below population goals)
3. Explicitly define when conservation goals will be met, quantitatively assess progress towards goals, and inform adaptive management constructs so course corrections can be made

If population goals are set, they should recognize state and federal authorities in management of state public trust species. The Fish and Wildlife Conservation Act: (16 U.S.C. §§ 2901-2911, September 29, 1980, as amended 1986, 1988, 1990 and 1992) states "Nothing in the Act should be construed as affecting: the authority, jurisdiction or responsibility of the states to manage, control or regulate fish and resident wildlife under state law…" (WAFWA 2011). Establishment of population goals for sage-grouse are the responsibility of states. However, realization of these goals cannot be achieved without habitat management and restoration on private lands and on Federal lands, so collaboration with local working groups and Federal land management agencies in goal setting is paramount.

Setting and managing to population goals is not realistic unless we have the capability to estimate sage-grouse population size. Breeding population size and trends have been modeled for the bi-state population of greater sage-grouse from lek count data and estimates of survival, nest success and other demographic parameters from telemetry data (Coates et al. 2015). Data for this type of model are not presently available range-wide, but McCaffery et al.

(2016) have developed a modeling approach to correct for males not detected during peak counts and estimate total number of male sage-grouse, and an integrated population model (IPM) to estimate total population (of males and females) using available data (McCaffery and Lukacs 2016). WAFWA is working with researchers from the University of Montana, USGS, FWS, and state agencies to develop a secure platform where state agencies can estimate sage-grouse population size and trends using the best available data. Initial estimates of minimum population size and trend at state and range-wide scales are feasible within the next year or two, but additional work will likely be needed to estimate total population size, refine demographic estimates that are input to models, and account for leks that are currently unknown and therefore not counted.

Other Considerations. While setting and working towards specific sage-grouse population goals has utility, the value of population-level strategies such as captive breeding, predator control, and eliminating hunting is less certain (see companion WAFWA white papers on these topics). Population-based management strategies employed to benefit sage-grouse would also fall under state, and not federal authority. Any, or all of these strategies can only be effective if sufficient quantity and quality of habitat is maintained.

Conservation efforts for sage-grouse, a large-landscape obligate of sagebrush habitats, also provide habitat for many of the 350 species that depend on sagebrush habitats (Rowland et al. 2006, Hanser and Knick 2011, Copeland et al. 2014). Sagebrush is a critical component of migration corridors and winter range for big game populations (Copeland et al. 2014) in much of the west. Population level management actions to benefit sage-grouse don't provide benefits to other sagebrush dependent species, particularly if they are used to mitigate for loss or degradation of habitat. For this reason, any significant retraction of habitat-based protections afforded in BLM Land Use Plan Amendments or Forest Plan Revisions may lead to additional petitions on sagebrush species of conservation concern such as pygmy rabbits. Effects of lethal control of sage-grouse predators on other sagebrush dependent species would be highly variable, uncertain, and potentially negative.

Conclusions:

- Establishment of sage-grouse population goals through a collaborative process led by states has utility to clearly delineate what success looks like and to aid in prioritization of investments in conservation. This will be technically feasible in the next year or two. Goals should be population ranges that recognize and account for the large population fluctuations (cycles) typical for this species.
- Efforts to enhance, restore, and protect habitats from conversion and degradation will be necessary to achieve population goals that are in aggregate sufficient to deter listing. Habitat efforts will benefit other sagebrush obligates and make petitions and listing of these species less likely.

Literature cited can be found under the Sagebrush Ecosystem Initiative tab at wafwa.org

WAFWA

Delivering conservation through information exchange and working partnerships

Predator control is a technique that has been applied in research settings and on a limited basis at local scales as a tool to benefit sage-grouse populations. The cause of mortality for most sage-grouse is predation (Bergerud 1988), whether as an egg, chick, juvenile or adult. What is relevant to the long-term sustainability of sage-grouse populations is not how birds die, but rather the rate at which mortality including predation occurs and whether recruitment exceeds mortality.

Sage-grouse are not the primary prey for any predator, but instead predators that typically prey on rodents, rabbits, and hares also take sage-grouse (Schroeder et al. 1999, Hagen 2011). Eggs, chicks, and males on leks are most vulnerable to predation (Hagen 2011). Females have their highest mortality during the breeding season (Davis et al. 2014). Predators of chicks and adult sage-grouse include coyotes, red fox, badgers, bobcats, and several species of raptors, while egg depredation is frequently attributed to weasels, raccoon, common ravens, black-billed magpies, coyotes, badgers, bobcats, and snakes (Baxter et al. 2007, Coates et al. 2008, Coates and Delehanty 2010, Hagen 2011, Lockyer et al. 2013, Orning 2014).

Sage-grouse have co-evolved with the normal complement of predators in sagebrush habitats. However, populations that are isolated due to habitat fragmentation or those in degraded habitats (Baxter et al. 2007) may be more vulnerable to predation. Predation on nests and chicks can be high where habitat is depleted or where predators are over abundant (Gregg et al. 1994, Aldridge and Brigham 2001, Schroeder and Baydack 2001, Coates 2007, Coates et al. 2008, Lockyer et al. 2013). Altered habitats influence distribution and abundance of predator populations in the following ways:

- Predators benefit from human-supplied food and water, such as road-killed carrion, artificial water sources, landfills, livestock carcasses, and cereal crops (Boarman et al. 2006, Baxter et al 2007, Bui et al. 2010, Esque et al. 2010, Newsome et al. 2013, Coates et al. 2016).
- Human structures provide denning, roosting, nesting, and perching sites that did not previously exist for predators in sagebrush landscapes (Coates et al. 2014a;b, Howe et al. 2014).
- Predators achieve greater hunting efficiency in fragmented or degraded landscapes (Vander Haegen et al. 2002, Coates et al. 2014a;b, Howe et al. 2014).
- Human subsidies are linked to increased raven populations which have increased an estimated $\geq$ 4-fold in the western U.S. over the last 40 years (Boarman et al. 2006, Sauer et al. 2011, Howe et al. 2014).
- Increases in red fox and raccoon have also been attributed to human-induced landscape changes and subsidies (Fichter and Williams 1967, Bunnell 2000, Connelly et al. 2000, Baxter et al. 2007).

Predator control activities to benefit sage-grouse have been implemented and evaluated on a limited basis by management agencies, usually in a small-scale research setting or to support a reintroduction or augmentation effort. Some significant sage-grouse predators are protected by Federal law and cannot be (easily) lethally controlled, such as great horned owls, golden eagles, and other raptors. Results of predator control efforts have varied. Coyote removal in Wyoming improved hen survival during the nesting period; however, annual hen survival remained unchanged and nest success was higher in untreated sites (Orning 2014). In another study in southwest Wyoming, there was no measurable effects on nest and chick survival between coyote removal and non-removal areas (Slater 2003). Sage-grouse reproductive success and survival improved during an 8-year study which removed both terrestrial (primarily red fox) and avian (corvid) predators in Strawberry Valley, Utah (Baxter et al. 2007). Several studies have evaluated raven control because of concern over increasing raven populations in sage-grouse habitats. Increased sage-grouse nest success has been documented after raven removal in some studies, but they lacked a comparison to control areas (Batterson and Morse 1948, Coates and Delehanty 2004, Baxter et al. 2007). In Wyoming, sage-grouse nest success was higher in areas of raven removal than in non-treatment areas, but raven numbers rebounded once control efforts ceased (Dinkins et al. 2014). A separate Wyoming study found that

sustained raven removal at high levels increased nest success and may increase sage-grouse populations (Peebles 2015).

Other Considerations. Lethal removal of predators is controversial and likely to engender local and broader opposition. Non-lethal control efforts such as aversive conditioning (Conover and Lyons 2003), hazing, or contraception are likely to have greater public acceptance but we are not aware of any studies that evaluated efficacy of any of these methods in reducing depredation on sage-grouse. Lethal removal of predators in large landscapes is not likely to be practical or cost effective (Willis et al. 1993), and complete removal of the target predator is unlikely. Predator populations are capable of rebounding quickly once removal stops (Gregg et al. 1994, Witmer et al. 1996, Côté and Sutherland 1997, Crooks and Soule 1999, Mezquita et al. 2006, Baxter et al. 2007, Clark 2014, Orning 2014, Dinkins et al. 2014, Dinkins et al. 2016), so control efforts must be sustained if benefits are to persist. Lethal removal may result in unintended consequences such as increases in other, potentially more effective predator species (Mezquida et al. 2006) which may shift predation to other predators or life stages rather than reducing it.

A predator management approach that could achieve long-term conservation goals would include; 1) addressing habitat conditions that ultimately limit sage-grouse production (e.g. hiding cover, food resources) and that provide advantages to predators (e.g. fragmented habitat, non-native vegetation); and 2) eliminating human subsides that artificially support predator populations. Predator removal, in conjunction with habitat improvement and elimination of predator subsidies could be an appropriate short-term management action to address localized and critical population declines or during sage-grouse translocation programs.

Conclusions:

- Large-scale, sustained lethal predator control programs for sage-grouse are likely to engender significant public opposition (Messmer et al. 1999), will be very expensive, and unlikely to be effective unless habitat deficiencies are corrected. In areas where seasonal habitats are in good condition, predator control is not likely to be needed to sustain desirable densities of sage-grouse.
- Predator removal programs can achieve short-term benefits, but their ultimate utility as a long-term conservation tool to increase sage-grouse populations is less well established (Côté and Sutherland 1997, Dinkins et al. 2014, Orning 2014, Conover and Roberts 2017).
- Predator removal may be useful as a short-term management tool to increase nest success and survival when localized sage-grouse populations are declining and have reached a critically low level (Baxter et al. 2007, Conover and Roberts 2017).
- In degraded habitats, sustained predator control and removal of predator subsidies may increase nest success and chick survival to prevent further population declines allowing time for habitat improvement (USFWS 2013).
- Lethal predator control prior to and after releases of sage-grouse may increase survival of translocated sage-grouse in reintroductions or augmentations of local populations. Translocated birds are more vulnerable to predation (Musil et al. 1993, Stephenson et al. 2011).

Literature Cited is available under the Sagebrush Ecosystem Initiative tab at the WAFWA website.

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HUNTING SAGE-GROUSE, IMPACTS AND MANAGEMENT

Ten of 11 states where Greater Sage-grouse occur allow hunting of sage-grouse. Sage-grouse have been state-listed as Threatened in Washington since 1998, and have not been hunted since 1990. Although sage-grouse were found not warranted for listing under the Endangered Species Act in 2015 (FR 80:59858-59942), concern over the potential consequences of a Federal listing have raised questions about the potential impact of hunting on sage-grouse populations. It is important to note that the Fish and Wildlife Service, in their assessment of threats in the 2015 not-warranted listing decision, did not view regulated hunting as a significant threat to the species, but described the need for continued close attention by state wildlife agencies to monitor population trends and adjust seasons if needed (FR 80:59924). This paper reviews scientific information pertaining to impacts of regulated hunting on sage-grouse populations and describes measures states have taken to minimize potential impacts of sage-grouse hunting.

Dinkins and Beck (personal comm.) analyzed sage-grouse lek data and harvest estimates from 1995-2013 provided by states and two Canadian provinces in an attempt to elucidate patterns between relative harvest and lek trends. While analysis of these data continues, they have concluded that discontinuing harvest in smaller populations did not result in positive lek trends; however, discontinuing hunting seasons with relatively higher harvest pressure in the largest population in their analyses resulted in higher population growth rates. They also concluded that State and provincial wildlife agencies were adept in changing harvest regulations to prevent hunting sage-grouse populations facing significant lek trend declines.

Historically, sport harvest of sage-grouse and other upland birds was viewed as compensatory mortality (meaning it replaced natural mortality and was not additive to it), and had little or no impact on subsequent population sizes (Connelly and Reese 2008). Recently the idea that all harvest of sage-grouse or other upland birds is compensatory has been replaced by the idea that low levels of harvest may be compensatory, but higher levels of harvest may be at least partially additive to natural mortality (Connelly et al. 2003, Reese and Connelly 2011). Based on a review of the literature, Connelly et al. (2000) suggested that no more than 10% of the autumn population be removed through harvest, and that populations of fewer than 300 birds (100 males counted on leks) should not be hunted. Sedinger et al. (2010), based on an analysis of 18 years of band recovery data in Colorado, found strong evidence that harvest rates near 10% were compensatory and not additive.

States have responded to concern about sage-grouse status and to declining populations by adopting more conservative approaches to regulating hunting based on the Connelly et al. (2000) guidelines (responses through 2007 reviewed in Reese and Connelly 2008). All states now evaluate sage-grouse seasons annually and make modifications, if needed, based on trends in counts of males on leks. Wyoming, which has more birds over larger areas than any other state, has shifted opening dates later, reduced season length from 31 to 11 days, and reduced bag limits from 3 birds daily and 6 in possession to 2 birds daily and 4 in possession in an effort to reduce potential impacts to sage-grouse. Wyoming also closes areas with fewer than 300 birds, and recommends more conservative seasons ranging from closures to reduced season lengths and bag limits if populations are declining. Colorado evaluates 3-year moving average high male counts (HMC) against triggers in local conservation plans to recommend closure or modifications of hunting seasons and bags, with a maximum season length of 7 days and bag of 2 and 4 compared to historical season lengths of 30 days and bags of 3 daily and 9 in possession. Idaho uses an explicit Adaptive Harvest Management (AHM) approach where season length and bag limits are either: Closed, Restrictive (7-day season, bag of 1 and 2), or Standard (21-day season, bag of 2 and 4) based on how 3-year average trends in HMC within each of 14 management zones relate to a baseline. Montana reduced sage-grouse season length from 62 to 30 days in 2014, and has implemented their conservative bag limit (2 daily,

4 in possession) since 2007. Hunting is closed in any unit where average HMC is 45% or more below the long-term average for 3 or more consecutive years. Oregon establishes a maximum harvest of 5% of a management unit population estimate, then issues limited tags to maintain harvest below the 5% threshold. California has closed hunting in the Bi-State population of sage-grouse, hunting permit numbers in other areas are adjusted based on male counts and fall population estimates. The California Fish and Game Commission responded to low lek counts this Spring and closed seasons for 2017 based on a recommendation from the California Department of Fish and Wildlife. Nevada has also closed hunting to Bi-State sage-grouse, seasons in other areas are adjusted to conform to the Connelly et al. (2000) guidelines. Nevada estimates statewide harvest of sage-grouse has been between 2% and 6% of the estimated fall population annually, and has closed sage-grouse seasons in five counties including 23 separate hunt units since 1997 in response to local, short-term declines. South Dakota issues limited permits with a bag and possession limit of 1, and closes hunting seasons when less than 250 males are counted on leks in the spring. The sage-grouse hunting season will be closed in 2017 in South Dakota. North Dakota has also closed sage-grouse hunting seasons for the past several years because the number of males on leks has fallen below levels that will support hunting.

Other Considerations. Sage-grouse hunters and sportsmen in general represent a constituency of sage-grouse and sagebrush advocates. Hunting license fees and matching Federal aid dollars are used by state wildlife agencies for conservation and restoration activities on sagebrush rangelands that benefit sage-grouse, sagebrush dependent wildlife and grazing interests. Sage-grouse hunting also represents an economic boost to local communities. In addition, sex and age-ratios obtained from hunter-collected wings provide information that will be critical to estimation of sage-grouse population size and trends now and in the future. State wildlife agencies have thresholds and other means to close hunting seasons when necessary to prevent impacts to sage-grouse populations which increases public confidence; widespread closures of hunting when not needed may send a message that populations are far more imperiled than they are, which could lead to further land use restrictions.

Conclusions:

- Sage-grouse hunting is managed conservatively by state wildlife agencies consistent with established and scientifically supported guidelines, including closures when populations decline below levels that can support hunting.
- Sage-grouse hunting, as currently regulated, is likely compensatory in most areas and therefore not likely to increase overall mortality rates.
- State wildlife agencies continue to support research on effects of hunting and will continue to incorporate new information into hunting season recommendations in the future.
- Sage-grouse hunters have been, and remain an important ally in sage-grouse conservation efforts with a vested interest in insuring populations remain not warranted for listing.

Literature Cited is available under the Sagebrush Ecosystem Initiative tab at the WAFWA website

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Literature Cited in WAFWA Tech. Committee White Papers on Predator Control, Captive Breeding and Population and Habitat Management

Aldridge, C. L. and R. M. Brigham. 2001. Nesting and reproductive activities of greater sage-grouse in a declining northern fringe population. The Condor 103:537-543.

Apa, A. D., and L. A. Wiechman. 2015. Captive-rearing of Gunnison sage-grouse from egg collection to adulthood to foster proactive conservation and recovery of a conservation-reliant species. Zoo Biology 34:438-452.

Apa, A. D., and L. A. Wiechman. 2016. Captive-breeding of captive and wild-reared Gunnison sage-grouse. Zoo Biology 35:70-75.

Apa, A. D., T. R. Thompson, and K. P. Reese. 2017. Juvenile greater sage-grouse survival, movements, and recruitment in Colorado. Journal of Wildlife Management 81:652-668.

Baxter, R. J., K. D. Bunnell, J. T. Flinders, and D. L. Mitchell. 2007. Impacts of predation on greater sage-grouse in Strawberry Valley, Utah. Transactions of the 72nd North American Wildlife and Natural Resources Conference 72:258-269

Batterson , W. M., and W. B. Morse. 1948. Oregon sage grouse. Fauna Series Number 1. Oregon State Game Commission, Portland, OR.

Baxter, R. J., K. D. Bunnell, J. T. Flinders, and D. L. Mitchelll 2007. Impacts of predation on Greater Sage-Grouse in Strawberry Valley, Utah. Transactions of the 72nd North American Wildlife and Natural Resources Conference 72:258-269.

Bergerud, A. T. 1988. Mating systems in grouse. in A. T. Bergerud and M. W. Gratson, editors. Adaptive strategies and population ecology of northern grouse. University of Minnesota Press, Minneapolis, MN, USA.

Boarman, W., M. Patten, R. Camp, and S. Collis. 2006. Ecology of a population of subsidized predators: Common ravens in the central Mojave Desert, California. Journal of Arid Environments 67:248-261.

Bui, T.-V. D., J. M. Marzluff, and B. Bedrosian. 2010. Common raven activity in relation to land use in western Wyoming: implications for greater sage-grouse reproductive success. The Condor 112:65-78.

Bump, G., R. W. Darrow, F. C. Edminster, and W. F. Crissey. 1947. The ruffed grouse. Life history-propagation-management. 915 pp. State of New York Conservation Department, New York

Bunnell, K. D. 2000. Ecological factors limiting sage grouse recovery and expansion in Strawberry Valley, Utah. M.S. Thesis, Brigham Young University, Provo, UT

Clark, D. 2014. Implications of cougar prey selection and demography on population dynamics of elk in northeast Oregon. PhD, Oregon State University, Corvallis, Oregon USA.

Coates, P. S., and D. J. Delehanty. 2004. The effects of raven removal on sage-grouse nest success. Proceedings Vertebrate Pest Conference 21:17.

Coates, P. S. 2007. Greater Sage-Grouse (*Centrocercus urophasianus*) nest predation and incubation behavior. Dissertation, Idaho State University, Pocatello, Idaho, USA.

Coates, P. S., J. W. Connelly, and D. J. Delehanty. 2008. Predators of Greater Sage-Grouse nests identified by video monitoring. Journal of Field Ornithology 79:421-428.

Coates, P. S., B. E. Brussee, K. B. Howe, K. B. Gustafson, M. L. Casazza, and D. J. Delehanty. 2016. Landscape characteristics and livestock presence influence common ravens: relevance to greater sage-grouse conservation. Ecosphere 7:1-20.

Coates, P. S. and D. J. Delehanty. 2010. Nest predation of greater sage-grouse in relation to microhabitat factors and predators. Journal of Wildlife Management 74:240-248.

Coates, P. S., B. J. Halstead, E. J. Blomberg, B. Brussee, K. B. Howe, L. Wiechman, J. Tebbenkamp, K. P. Reese, S. C. Gardner, and M. L. Casazza. 2014. A hierarchical integrated population model for Greater Sage-Grouse (*Centrocercus urophasianus*) in the Bi-State Distinct Population Segment, California and Nevada. U.S. Geological Survey Open-File Report 2014-1165, 34 p., http://dx.doi.org/10.3133/ofr20141165..

Coates, P. S., K. B. Howe, M. L. Casazza, and D. J. Delehanty. 2014a. Common raven occurrence in relation to energy transmission line corridors transiting human-altered sagebrush steppe. Journal of Arid Environments 111:68-78.

_____. 2014b. Landscape alterations influence differential habitat use of nesting buteos and ravens within sagebrush ecosystem: implications for transmission line development. The Condor 116:341-356.

Connelly, J. W., A. D. Apa, R. B. Smith, and K. P. Reese. 2000. Effects of predation and hunting on adult sage grouse *Centrocercus urophasianus* in Idaho. Wildlife Biology 6:227-232.

Connelly, J. W., C. A. Hagen, and M. S. Schroeder. 2011. Characteristics and dynamics of greater sage-grouse populations. in Greater Sage-Grouse: ecology and conservation of a landscape species and its habitat. Studies in Avian Biology 38. University of California Press, Berkeley, California, USA.

Conover, M.R., and A.J. Roberts. 2017. Predators, predator removal, and Sage-Grouse: A review. The Journal of Wildlife Management 81:7-15.

Copeland, H. E., H. Sawyer, K. L. Monteith, D. E. Naugle, A. Pocewicz, N. Graf, and M. J. Kauffman. 2014. Conserving migratory mule deer through the umbrella of sage-grouse. Ecosphere 5:117. http://dx.doi.org/10.1890/ES14-00186.1

Côté, I. M. and W. J. Sutherland. 1997. The effectiveness of removing predators to protect bird populations. Conservation Biology 11:395-405.

Crooks, K. R. and M. E. Soule. 1999. Meso-predator release and avifaunal extinctions in a fragmented system. Nature 400:563-566.

Davis, D.M., K. P. Reese, S. C. Gardner. 2014. Demography, reproductive ecology, and variation in survival of greater sage-grouse in Northeastern California. Journal of Wildlife Management. 78:1343-1355.

Dinkins, J.B., M.R. Conover, C.P. Kirol, J.L. Beck, and S.N. Frey. 2014. Effects of common raven removal and temporal variation in weather on greater sage-grouse nesting success. 29th Western Agencies Sage and Columbian Sharp-tailed Grouse Workshop. June 17-19, 2014, Elko, NV.

Dinkins, J. B., M. R. Conover, C. P. Kirol, J. L. Beck, and S. N. Frey. 2016. Effects of common raven and coyote removal and temporal variation in climate on greater sage-grouse nesting success. Biological Conservation 202:50–58.

Esque, T. C., K. E. Nussear, K. Drake, A. D. Walde, K. H. Berry, R. C. Averill-Murray, A. Woodman, W. I. Boarman, P. A. Medica, and J. Mack. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, USA. Endangered Species Research 12:167-177.

Fichter E., and R. Williams. 1967. Distribution and status of the red fox in Idaho. Journal of Mammalogy. 48:219-230.

Gregg, M. A., J. A. Crawford, M. S. Drut, and A. K. DeLong. 1994. Vegetational cover and predation of sage grouse nests in Oregon. The Journal of Wildlife Management:162-166.

Hagen, C. 2011a. Predation on greater sage grouse: facts, process, and effects. in Greater Sage-Grouse: ecology and conservation of a landscape species and its habitat. Studies in Avian Biology 38. University of California Press, Berkeley, California, USA.

Hanser, S. E., and S. T. Knick. 2011. Greater sage-grouse as an umbrella species for shrubland passerine birds: a multiscale assessment. Studies in Avian Biology 38:475-488.

Howe, K. B., P. S. Coates, and D. J. Delehanty. 2014. Selection of anthropogenic features and vegetation characteristics by nesting Common Ravens in the sagebrush ecosystem. The Condor 116:35-49.

Huwer, S. L. 2004. Evaluating greater sage-grouse brood habitat using human-imprinted chicks. Thesis, Colorado State University, Fort Collins, USA.

Huwer, S. L., D. R. Anderson, T. E. Remington and G. C. White. 2008. Using human-imprinted chicks to evaluate the importance of forbs to sage-grouse. Journal of Wildlife Management 72:1622-1627.

Johnson, G. D., and M. S. Boyce. 1990. Feeding trials with insects in the diet of Sage-Grouse chicks. Journal of Wildlife Management 54:89-91.

Johnson, G. D., and M. S. Boyce. 1991. Survival, growth, and reproduction of captive-reared sage-grouse. Wildlife Society Bulletin 19:88-93.

Leif, A. P. 1994. Survival and reproduction or wild and pen-reared ring-necked pheasants. Journal of Wildlife Management 58:501-506.

Ligon J.S. 1946. Upland game bird restoration through transplanting. 108p. N. Mexico Dept. Game and Fish.

Lockyer, Z. B., P. S. Coates, M. L. Casazza, S. Espinosa, and D. J. Delehanty. 2013. Greater Sage-Grouse Nest Predators in the Virginia Mountains of Northwestern Nevada. Journal of Fish and Wildlife Management 4:242-255.

Matthews, S. R., P. S. Coates, M. L. Casazza, and D. J. Delehanty. 2014. Using artificial insemination to promote fertilization of translocated female Columbian sharp-tailed grouse. Transactions of the 29th Sage- and Columbian Sharp-tailed Grouse Workshop. Abstract only.

McCaffery, R., J. J. Nowak, and P. M. Lukacs, P. M. 2016. Improved analysis of lek count data using N-mixture models. Journal of Wildlife Management 80:1011–1021.

McCaffery, R., and P. M. Lukacs. 2016. A generalized integrated population model to estimate greater sage-grouse population dynamics. Ecosphere 7: e01585

Messmer, T. A., M. W. Brunson, D. Reiter, and D. G. Hewitt. 1999. United States public attitudes regarding predators and their management to enhance avian recruitment. Wildlife Society Bulletin 27:75-85.

Mezquida, E. T., S. J. Slater, and C. W. Benkman. 2006. Sage-grouse and indirect interactions: potential implications of coyote control on sage-grouse populations. Condor 108:747-759.

Morrow, M. E. 2017. Attwater's prairie chicken recovery, January 1 to December 31, 2016. Unpublished report, United States Fish and Wildlife Service. 51 pp.

Musil, D. D., J. W. Connelly, and K. P. Reese. 1993. Movements, survival, and reproduction of greater sage-grouse translocated into central Idaho. Journal of Wildlife Management. 57:85-91

Newsome, T. M., J. A. Dellinger, C. R. Pavey, W. J. Ripple, C. R. Shores, A. J. Wirsing, and C. R. Dickman. 2014. The ecological effects of providing resource subsidies to predators. Global Ecology and Biogeography.

Oesterle, P., R. McLean, M. Dunbar, and L. Clark. 2005. Husbandry of wild-caught greater sage-grouse. Wildlife Society Bulletin 33:1055-1061.

Orning, E. K. 2014. Effect of predator removal on greater sage-grouse (*Centrocercus urophasianus*) ecology in the Bighorn Basin Conservation Area of Wyoming. Thesis, Utah State University, Logan, Utah, USA.

Peebles, L.W. 2015. Winter ecology of common ravens in southern Wyoming and the effects of raven removal on greater sage-grouse populations. Thesis Utah State University, Logan Utah, USA.

Pyrah, D. B. 1961. Artificial propagation of sage grouse for experimental purposes. Federal Aid Project 125-R-1, Idaho Department of Fish and Game. 14 pp.

Reese, K. P, and J. W. Connelly. 1997. Translocations of Sage Grouse *Centrocercus urophasianus* in North America. Wildlife Biology 3:235-241.

Remington, T. E., and C. E. Braun. 1988. Carcass composition and energy reserves of sage grouse during winter. Condor: 90:15-19.

Rowland, M. M., M. J. Wisdom, L. H. Suring, and C. W. Meinke. 2006. Greater sage-grouse as an umbrella species for sagebrush-associated vertebrates. Biological Conservation 129:323-335.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski Jr., and W. A. Link. 2011. The North American breeding bird survey, results and analysis 1966-2009. USGS Patuxent Wildlife Research Center, Laurel, MD, USA.

Schroeder, M. A. and R. K. Baydack. 2001. Predation and the management of prairie grouse. Wildlife Society Bulletin 29:24-32.

Schroeder, M. A., J. R. Young, and C. E. Braun. 1999. Sage-grouse (*Centrocercus urophasianus*). in A. Poole and F. Gill, editors. The Birds of North America, Number 425. The Academy of Natural Sciences, Philadelphia, PA, USA.

Slater, S. J. 2003. Sage-grouse (*Centrocercus urophasianus*) use of different-aged burns and the effects of coyote control in southwestern Wyoming. M. S. Thesis, University of Wyoming, Laramie.

Spurrier, M. F., M. S. Boyce, and B. F. J. Manly. 1994. Lek behaviour in captive sage grouse *Centrocercus urophasianus*. Animal Behaviour 47: 303-310.

Stephensen, J., K. P. Reese, P. Zager, P. E. Heekin, P. J. Nelle, and A Martens. 2011. Factors influencing survival of native and translocated mountain quail in Idaho and Washington. Journal of Wildlife Management 75:1315-1323.

Thompson, T. R., A. D. Apa, K. P. Reese, and K. M. Tadvick. 2015. Captive rearing sage-grouse for augmentation of surrogate wild broods: evidence for success. Journal of Wildlife Management 79:998-1013.

U.S. Fish and Wildlife Service. 2013. Greater sage-grouse (*Centrocercus urophasianus*) conservation objectives: final report. U.S. Fish and Wildlife Service, Denver, CO, USA.

Vander Haegen, W. M., M. A. Schroeder, and R. M. DeGraaf. 2002. Predation on real and artificial nests in shrubsteppe landscapes fragmented by agriculture. The Condor 104:496-506.

Willis, M. J., G. P. Keister, Jr., D. A. Immell, D. M. Jones, R. M. Powell, and K. R. Durbin. 1993. Sage grouse in Oregon - Wildlife Research Report No. 15. Oregon Department Fish and Wildlife, Portland, OR, USA.

Witmer, G. W., J. L. Bucknall, T. H. Fritts, and D. G. Moreno. 1996. Predator management to protect endangered avian species. Transactions of the North American Wildlife and Natural Resources Conference 61:102-108.

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