From:	Shauna Ginger
To:	wayneww@earthlink.net
Subject:	RE: Final Sage Grouse Range Wide Mitigation SUmmary document
Date:	Wednesday, August 14, 2013 3:44:58 PM
Attachments:	GSG Rangewide Mitigation White Paper_FWS_22July2013.pdf

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Sure thing!

Was really great to have you here. I think it was a huge benefit for all around the table to hear your perspective.

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Learn more about USFWS & Ecosystem Services here

From: Wayne Walker [mailto:wayneww@earthlink.net]
Sent: Wednesday, August 14, 2013 3:13 PM
To: 'Shauna Ginger'
Subject: Final Sage Grouse Range Wide Mitigation SUmmary document

Shauna,
Great to see you in Oregon a few weeks ago. Could you please re-send me the final document again. I have time to read it now.
Thanks,

Wayne

MITIGATION AND GREATER SAGE-GROUSE

A White Paper Summarizing Compensatory Mitigation Efforts (*to July 2013*)
With a Focus on Energy and other Natural Resources Development

Shauna Ginger, USFWS Oregon Fish and Wildlife Office
Pat Deibert, USFWS National Sage-Grouse Coordinator

PURPOSE AND NEED

Greater sage-grouse (*Centrocercus urophasianus*) occur in 11 western States and 2 Canadian provinces; although widely distributed, their numbers have been declining due to loss and fragmentation of sagebrush habitat. In 2010, the U.S. Fish and Wildlife Service (Service) determined that protection of the species under the Endangered Species Act (ESA) was warranted but precluded[i]. A litigation settlement requires that a listing decision be made by September 2015[ii].

There is great interest and a variety of efforts underway to conserve the species, driven in part by a goal to preclude the need to list under the ESA. Sagebrush habitat often intersects with lands ideal for rangeland agriculture and more recently, natural resource and energy development. Invasive species, catastrophic fires, and increasing pressure for natural resource and other development in the western states are indicators that impacts to sage-grouse habitat will continue to occur. Mitigating for development impacts in a way that demonstrates measureable conservation benefits is of increasing interest. Combining landscape-level conservation planning with mitigation hierarchy principles (first *avoid*, then *minimize*, *restore*, and if impacts are still unavoidable, *offset*) is one way to balance conservation with development impacts. Such "pre-listing mitigation," set within an overarching conservation strategy, could provide effective conservation and incentivize voluntary offset actions.

This white paper summarizes known mitigation efforts to date for greater sage-grouse (hereafter, sage-grouse). It focuses primarily on resource development and the "offset" or "compensatory mitigation" portion of the mitigation hierarchy. The report is intended to provide baseline information about these issues as state and federal natural resource managers assess ways to proactively address concerns about the impacts to sage-grouse from development. The energy development realm is highlighted because it is predicted to grow, effects a majority of the species range, a wealth of information exists to inform programs, and there has already been some strategic mitigation planning and implementation across a variety of regulatory frameworks. Secondarily, this report is intended to inform efforts looking at various habitat credit trading programs as tools to address compensatory mitigation needs.

INTRODUCTION

Sage-grouse are native to sagebrush steppe, and their distribution closely follows that of sagebrush. Sage-grouse populations have declined in response to a pattern of land use changes that have reduced and degraded sagebrush ecosystems. Development pressures plus the compounding effects of historical land use, high intensity grazing regimes, invasive species, and altered fire regimes present significant and complicated landscape-level challenges for conservation of sage-grouse. However, it is the combination of increased energy and natural resource development and a lack of local regulatory mechanisms to adequately mitigate for those impacts that have emerged as an eminent pro-active conservation issue for both precluding the need to list and for the long term survival of the species.

The Service's 2010 assessment of the implementation of regulations and associated stipulations guiding energy development indicated that current measures do not adequately ameliorate impacts to the species. Further, because energy development is expected to continue to expand in the foreseeable future, the finding suggests that "unless protective measures consistent with new research findings are widely implemented via a regulatory process, those measures cannot be considered an adequate regulatory mechanism." Discretionary measures by the Service, federal land managers such as the Bureau of Land Management (BLM), and state conservation agencies are likely to have a significant impact on energy development in sage-grouse habitat.

States hold the primary responsibilities for protection and management of sage-grouse. State laws and regulations impact sage-grouse conservation by providing specific authority for sage-grouse conservation over lands which are directly owned by the state, broad authority to regulate and protect wildlife on all lands within their borders, and a mechanism for indirect conservation through regulation of threats to the species (e.g. noxious weeds). All state wildlife agencies across the range of the species manage sage-grouse as resident native game birds except for Washington, where it is state listed as threatened; all 11 states within the species range have a state-wide sage-grouse conservation plan. While sage-grouse states have similar conservation plans, they vary widely in how, or if, they address mitigation. In addition, states vary in their authorities to site and environmentally review development projects and employ mitigation measures for development impacts.

While states hold primary responsibility over the bird's conservation, federal agencies manage almost two-thirds of sagebrush habitats in the west. The Bureau of Land Management (BLM) manages just over half of sage-grouse habitats, while the U.S. Forest Service (USFS) is responsible for management of approximately eight percent of the species' habitat. Other federal agencies in the Departments of Defense, Energy and Interior (including the Bureau of Indian Affairs, the Service, and National Park Service) are responsible for managing less than 5 percent of sagebrush lands. Federal agencies have the regulatory authority to address many of the threats to sage-grouse, including energy development, but have varied widely in application.

The government agencies with primary jurisdiction over sage-grouse *and* siting of energy development play a major role in the ability to avoid and/or mitigate impacts, and thus ultimately are a key component for conservation of the species. Including conservation measures in state conservation plans and federal land use plans can serve as principal regulatory mechanisms to assure adequate conservation of the sage-grouse and its habitat on public lands.

For wide ranging species like sage-grouse, there is inherent difficulty in developing detailed landscape level conservation plans that also include robust mitigation strategies where pre-listing mitigation can be effective. In response to increasing development pressure and the need to demonstrate adequate regulatory mechanisms to avoid a species listing, states and federal land management agencies are developing strategies and management plans that fit within their current legal parameters. These strategies are one way to both incentivize and define frameworks for pre-listing mitigation.

In the mixed land ownership pattern of the western United States, jurisdictions often overlap. The BLM, working jointly with USFS, is revising regional resource management plans (RMPs) to address threats to the species from the inadequacy of existing regulatory mechanisms through their range-wide National Greater Sage-Grouse Planning effort[iii]. State and local plans, some in place and others still in development, vary in scope and regulatory strength from utilizing existing laws to issuing executive orders. This document focuses on those non-federal efforts and is intended to raise awareness of possible conservation and mitigation mechanisms for sage-grouse in light of continued development pressures.

SUMMARY OF FINDINGS

Information in this document was summarized from reviewing state conservation plans, final and draft guidance documents on sage-grouse conservation and mitigation, and development project documentation. Interviews of Service and state agency biologists involved in sage-grouse conservation and project review were also conducted in 2011 and 2012 with document reviews through early 2013. Inquiry was concentrated on state level mitigation plans and actions for greater sage-grouse, with specific focus on compensatory mitigation (offsets).

Results are presented in brief by state in table format (Appendix A) and in more detail in the "State Summaries" section. Several energy development projects have resulted in compensatory mitigation for sage-grouse and some proposed projects have proposed offsets for the species. A sampling of permitted and proposed projects is noted in each state summary, summarized in a table in Appendix B, and a few of the projects are explored in more detail in Appendix C.

Results can be grouped in to three main categories:

I. Mitigation Framework = whether a state has a mitigation plan or framework and how that framework is implemented,
II. Siting Process = how (energy) projects are sited and permitted though existing state or local processes, and
III. Environmental Review = to what extent wildlife agencies are involved in the project review process.

I. Mitigation Framework

A *mitigation framework* (or mitigation strategy) is a set of tools for the identification, planning and implementation of mitigation measures to avoid, minimize, restore, and if necessary, offset impacts to species occurring from various development activities. The framework should include methodologies for quantifying impacts and offsets as well as a methodology for selecting the actions necessary to satisfy a project's mitigation obligations such that there is, at minimum, no net loss to the species.

Nearly all 11 states within the range of the sage-grouse (except North Dakota) have either completed or are working through mitigation measures for sage-grouse on projects. While all 11 states have a species-specific conservation plan and nearly all of those plans mention mitigation, only one (Utah's 2013 revised plan) contains an embedded mitigation framework. Two of the states (California, Washington) have general mitigation strategies through their state regulations that cover sage-grouse through species or habitat protections. Three other states (Nevada, Oregon, and Wyoming) have created a separate mitigation framework for sage-grouse. Many of these mitigation documents are specific to energy development, rather than a general mitigation strategy for any potential development impacts to the species. Idaho is finalizing a mitigation framework and Montana is considering incorporating a mitigation program in future revisions to their state-wide conservation plan for sage-grouse. It is notable that none of the plans summarized here fully address all aspects of a mitigation framework, as defined in this paper (i.e. siting, avoidance, minimization, offsets, impact assessment, guidelines for offset actions, and a robust metric - all of which can cover various development activities).

II. Siting Process

The siting process (review and permitting) for energy or other development projects is important to consider as it is the first step in avoiding or minimizing impacts to the species altogether, typically

through pre-identified siting plans that consider conservation to habitat and species and/or an environmental review. The energy development realm is highlighted because it is predicted to grow, effects a majority of the species range, and in most states provides an existing regulatory framework from which to operate.

States vary widely in their approach to the siting and permitting process for energy development. The two most common approaches are through a state's public utilities commission or the local counties that may or may not have zoning requirements. All states but one (Idaho) have some form of a state siting and permit process for the majority of energy projects, though that process may vary by size and type of project. (For very large scale energy development in Idaho, however, a state energy office would coordinate state comments, though this is not a formal siting process).

For most states, small projects do not have to go through a state permit but may be subject to a county permit. Two states (North Dakota and Utah) do not have a county siting and permit process. In many states, permitting varies county by county. Regulations at the county level have the potential to protect sage-grouse habitat. In the Service's 2010 assessment, only one county (Washington County in Idaho) had a regulation that specifically addressed sage-grouse although many other county and local plans across the states mentioned the species and some gave general recommendations regarding effects to sage-grouse associated with land uses (e.g. Washington).

Wind energy is a relatively new type of resource development. In many states there is no specific siting process for wind. However, because of growing interest in renewable energy, wind power siting processes are developing rapidly and legislative or regulatory changes are occurring across the country. Typically, if a development exceeds a certain size it falls under the jurisdiction of the utilities commission; however the threshold for this varies widely. For example, in Nevada the threshold to obtain a state permit is a project >150 kilowatts (kW) while in Oregon the threshold is one thousand times higher at >105 megawatts (MW). Currently, four states (Colorado, Oregon, North Dakota, and South Dakota) have siting authorities and a regulatory review process specific to wind projects that differ from other energy projects.

III. Environmental Review

For the purposes of this document, *environmental review* is defined as the opportunity for state or federal agencies to review and comment on projects with potential impacts to sage-grouse. This process is the primary way, especially in absence of conservation oriented siting plans, that impacts to species or habitat can be avoided, minimized, rectified, and/or offset.

In all cases, state comments are never mandatory, though the range of weight they have on a permit process varies from compliance to completely voluntary. Four states (California, Montana, South Dakota, and Washington) have a state environmental policy law or processes, similar to the National Environmental Protection Act (NEPA) process, that require state coordination and some form of environmental assessment for certain projects. This assessment can be either related to or independent of any state or county siting permits. Nevada also has a state environmental policy law specific to utilities. These laws vary as to what types of projects trigger environmental impact analysis - some only require review for state agency or state funded projects, others also require review for any project that requires a state permit, license, or certificate and some laws also impact local government projects. The degree to which this review results in mitigation recommendations being implemented varies as well.

For five states (Colorado, Montana, Oregon, Utah, and Washington), the state siting process itself triggers an environmental review (though in Montana this only applies to transmission projects). In three states

(Montana, Oregon, and Washington), the opportunity for review may also come at a county's request if they are the siting entity, though this varies by county.

For two of the states (Idaho and North Dakota), unless the project is occurring on state lands, review by the state agency responsible for sage-grouse is opportunistic, i.e. only through a NEPA process (because of a federal nexus) or by voluntary consultation of the county or project proponent. For very large energy developments, however, Idaho and Nevada do have a state agency that will collate state comments, which may include those from their respective wildlife agencies. In Idaho, state law does not require mitigation. North Dakota has a state energy siting process but there is no requirement for review from the state wildlife agency and there is not a county siting process. However, the state wildlife agency in North Dakota is working with the state public utilities commission to develop a flagging method to identify when projects should be reviewed for wildlife impacts.

For the Service, half of the state's field offices in 2012 reported that they had reviewed and provided comments on projects, though all were by opportunistic means (e.g. NEPA, working groups, voluntary request from the state or project proponent, or through review because of another trust resource). The other half of the states had not reviewed projects with potential impacts to sage-grouse either because they were not aware of any projects or they were aware but deferred to the state for review for sage-grouse since the species was state managed. When asked about the interest of project proponents in receiving regulatory assurance from the Service that their offsets would be sufficient in the event of a listing, about half of the states indicated that developers were beginning to ask these types of questions of the Service.

IV. Projects with Mitigation (see also Appendices B and C)

Several energy and mining projects with impacts to sage-grouse have been permitted and or are in the process of being permitted and include compensatory mitigation. A summary of several known projects is in table form in Appendix B. Appendix C offers written details for a subset of those projects, including specific on impacts to sage-grouse and offset measures to mitigate for impacts. Projects with impacts to sage-grouse that were mitigated solely through avoidance and minimization measures (e.g., construction timing restrictions, buffers around leks) were not included. However, it is important to note that this has been both a historic and current method of sage-grouse mitigation in most areas. Whether these measures are adequate in avoiding or minimizing impacts to the species is difficult to assess.

For past permitted projects that were assessed for this paper, the most popular form of compensatory mitigation was in lieu fund arrangements whereby impacts are converted to a dollar amount which is paid to an entity, typically a third party. The third party in turn implements the mitigation, typically habitat restoration and/or research. For many of the projects currently undergoing permitting and review processes, proposed compensatory mitigation is shifting toward more on-the-ground habitat restoration measures, though proposals for in lieu funds and research are still present.

FUTURE ACTIONS

This document only provides basic information on current programs and a subset of projects. Starting with this information, useful next steps may include investigating the following:

- Service response to state conservation and mitigation plans in relation to adequacy of regulatory mechanisms in precluding the need to list
- Effectiveness of actions where avoidance and minimization were the sole mitigation actions
- Effectiveness of past compensatory mitigation actions

STATE SUMMARIES

NOTE: Where available, website information with document references are given as end notes.

California

Mitigation plan

The California Department of Fish and Wildlife (CDFW) considers sage-grouse a Species of Special Concern and an Upland Game Bird. California has two distinct and geographically separated population zones, the northern population and the bi-state population in eastern California, identified as a distinct population segment and shared with Nevada. California shares a 2012 local area working group conservation plan[iv] with Nevada which identifies strategies to improve habitat quality and quantity. Population management units (PMUs) are used as a basic unit for risk assessment and mitigation planning. Working groups based on PMUs implement local conservation plans. Plans state that mitigation may be needed and that mitigation strategies should be developed for certain activities but do not offer a framework for that process. The plan for the Buffalo-Skedaddle PMU does outline specific avoidance/minimization measures to take before compensatory mitigation measures are needed. Generally, projects, and thus minimization/mitigation measures, are handled on a case by case basis.

Siting Process and Environmental Review

California Environmental Quality Act (CEQA) requires state and local agencies to assess environmental impacts of proposed actions they undertake or permit. For energy projects subject to CEQA, lead agencies are required to consult with CDFW. In addition to CDFW's responsibility and trustee roles in the CEQA process, direct consultation with CDFW is required to ensure that a proposed project will meet the intent of Fish and Game Code statutes for protection of wildlife species, including the California's Fully Protected Species Act and the California Endangered Species Act. CDFW cannot approve or disapprove a project. Protection of listed species through CEQA is dependent upon the discretion of the agency involved.

Projects

<u>Northern Population</u>:

About 2,200 acres in Lassen County were acquired in 2000 to provide sites for restoration, enhancement and protection of sage/steppe plant communities and associated wildlife species for impacts of the Sierra Pacific Power Company Alturas Project (365kv power line) and the Tuscarora Gas Transmission Company Project (natural gas pipeline). Target species included sage-grouse and pronghorn antelope. Sites were chosen within important sage-grouse seasonal use areas and provide significant opportunities for enhancing sagebrush habitats.

<u>Bi-State Population (Mono and Inyo County)</u>:

Development threats to this population are low. Only one project with impacts to sage-grouse has been permitted (Cougar Gold Paramount Exploration, permitted through BLM) and avoidance and minimization measures (e.g. timing restrictions) were employed until the agencies deemed there were no

adverse effects to sage-grouse. For discretionary projects involving BLM managed lands, the district land use plan indicates that the projects that will adversely impact to sage-grouse will be unlikely to go forward.

Colorado[v]

Mitigation Plan

Colorado Parks and Wildlife (CPW) considers sage-grouse a state Species of Concern. The goal of the 2008 state conservation plan[vi] is to maintain, enhance, and/or restore sage-grouse populations and their habitats. Specifically, the plans calls to protect and improve sufficient habitat and implement other measures across the range to ensure that the species has minimal (<1%) modeled risk of extinction over a 50-year time frame. Population strategies include habitat protection, habitat improvement, and population management. It supplements and builds upon several local plans.

In regards to energy development, potential mitigation scenarios (avoid, minimize, mitigate) are considered and analyzed in the plan. A mitigation accounting system is explored but the plan is careful to not recommend any particular approach or provide a mitigation framework. Conservation/mitigation banks and grass (grazing) banks are also mentioned as potential tools to explore. The state can negotiate avoidance and mitigation for impacts to wildlife as part of wildlife mitigation plans for oil and gas development. To date, compensatory mitigation for sage-grouse has been obtained in the form of funding for research projects.

Siting Process and Environmental Review

The Colorado Public Utilities Commission (PUC) regulates "eligible investor-owned electric utilities" with renewable resource projects larger than 2 MW, not net-metered, and with a structure exceeding 50 feet in height. Counties have addressed siting through County Master Plans. Included in this are master planning statutes for "location and extent" of public utilities, access to alternate energy facilities and location of "areas containing…..endangered or threatened species."

Colorado Oil and Gas Conservation Commission (COGCC) 2009 rules require that permittees and operators determine whether their proposed development location overlaps with ''sensitive wildlife habitat,'' or is within a restricted surface occupancy (RSO) area. For sage-grouse, areas within 1 km (0.6 mi) of an active lek are designated as RSOs, and surface area occupancy is to be avoided except in cases of economic or technical infeasibility. Areas within approximately 6.4 km (4 mi) of an active lek are considered sensitive wildlife habitat and the development proponent is required to consult with CPW to identify measures to avoid impacts on wildlife resources, including sage-grouse; minimize the extent and severity of those impacts that cannot be avoided; and mitigate effects from the impact that cannot be avoided or minimized. The COGCC will consider CPW's recommendations in the permitting decision, although the final permitting and conditioning authority remains with COGCC.

For wind developments, mandatory guidelines in the PUC rules require consultation with CPW and the Service. Developers must provide certification of site-specific avian surveys. In addition, surveys for state or federally listed species and local bird migration pathways, critical habitat, or areas where birds or other

wildlife are highly concentrated and are considered at risk must be verified and used in design, placement, and management of facilities.

Projects

The state has been receiving compensatory mitigation for sage-grouse on energy development projects, namely oil and gas, in some form for at least a decade but with more consistency since 2009. The rules of the COGCC require operators to either consult with CPW on individual applications for permits or enter into a wildlife mitigation plan covering the area in which the proposed activities are to occur. For most of the larger oil and gas developments (from companies such as Encana, Exxon Mobile, PDC, Questar Gas, and Williams-WPX) programmatic assessments have been conducted (using spatial modeling to assess impacts) and mitigation plans are in place. A mitigation plan outlines best management practices (BMPs) to avoid and minimize adverse impacts as well as specific compensatory mitigation measures. Mitigation plans sometimes cover multiple species. Compensatory mitigation for sage-grouse can include funding specific research projects, which have in the past incorporated population monitoring, juniper removal, habitat enhancement, and efficacy of BMPs.

Acquisitions, easements, or land exchanges with long-term management have not been used to date specifically for mitigation, but are a potential mitigation tool and have been used by CPW on other species.

There are four pipeline projects (including the multi-state Western Expansion Project II of the Mid-America Pipeline) and three multi-state transmission projects (Energy Gateway South, TransWest Express, and Zephyr) in the early review process that may impact sage-grouse habitat. Habitat Equivalency Analysis (HEA) is being used to determine mitigation requirements for the first two transmission line projects. One transmission line maintenance project is also in review. Current trends indicate oil and gas projects, pipelines, and transmission line projects with high potential to impact sage-grouse habitat will continue.

Idaho[vii]

Mitigation Plan

The Idaho Department of Fish and Game (IDFG) considers sage-grouse a state Species of Greatest Conservation Need. Population objectives identified in the 2006 state conservation plan[viii] include measures to reduce, eliminate, or mitigate adverse impacts. Specifically, the plan states that "off-site mitigation should be employed to offset unavoidable alteration and losses of sage-grouse habitat" and should "focus on acquiring, restoring, or improving habitat within or adjacent to occupied habitats and ideally should be designed to complement local sage-grouse conservation priorities."

The state plan does not offer a framework for mitigation; however the sage-grouse Mitigation Subcommittee of the Idaho Sage-Grouse State Advisory Committee has drafted a *Framework for Mitigation of Impacts from Infrastructure Projects on Sage-grouse and Their Habitats* (2010 internal draft Mitigation Framework). This report presents the Subcommittee's consensus recommendations for the creation of a science-based module that project developers and government regulators could use to achieve compensatory mitigation objectives called for in project plans and permits. The draft offers a

general outline of policies and procedures for an in lieu fee approach to compensatory mitigation. Governor Otter's Sage-grouse Conservation Alternative[ix] incorporates by reference the draft Mitigation Framework. Currently, the mitigation sub-committee is expanding the Mitigation Framework to a fully detailed program for consideration by the Governor's office.

Siting Process and Environmental Review

Idaho does not have a state siting process for energy projects. Counties do have siting authority for private land and provide conditional use permits.

Except in the case of state land or large-scale energy projects (which are coordinated through the state's Office of Energy Resources), project review by the wildlife agencies is opportunistic (i.e. through the NEPA process or if a county or project proponent requests consultation). For the Service, many energy project proponents request consultation for eagles, which has allowed for comments on sage-grouse and other species. Also, IDFG and the Service participate on teams for larger energy projects (e.g. Gateway West Transmission) and contribute to the overall planning process.

Projects

At least three proposed projects with impacts to sage-grouse in Idaho are in various stages of the planning and permitting process. Two are multi-state transmission projects – Gateway West Transmission and the Mountain State Transmission Intertie (MSTI). The MSTI project does not currently have an interconnect agreement, therefore the BLM has recommended that they withdraw the project. China Mountain is a local wind development project. BLM has deferred a final decision and suspended work on the Final Environmental Impact Statement (EIS) until completion of two BLM RMPs due to widespread concern of the scope of impacts to sage-grouse and other species.

Montana[x]

Mitigation Plan

Montana Department of Fish, Wildlife and Parks' (FWP) 2005 sage-grouse plan establishes a process to achieve sage-grouse management objectives and provide a framework to guide local management efforts and coordinated management across jurisdictional boundaries. Off-site mitigation and the development of mitigation strategies are mentioned as potential conservation actions for unavoidable impacts from energy development. The state does not currently have a mitigation framework. However, formation of a State of Montana advisory council tasked with creating a statewide plan to conserve the sage-brush grasslands that support Montana's sage-grouse population is underway. Compensatory mitigation would likely be included in the advisory council recommendations.

Siting Process and Environmental Review

Under the Montana Major Facility Siting Act (MFSA) a certificate of compliance may be required from the Montana Department of Environmental Quality (MDEQ) for certain major pipelines and electric transmission lines. Exploration for geothermal resources is also regulated. Associated facilities such as transportation links, pump stations, and other facilities associated with the delivery of energy are

included. Wind power development is unregulated at any level of government when occurring on private land. The exception is the authority of each county to control the zoning requirements for commercial or industrial development. Likewise, some components of the development may be regulated by MDEQ, for instance if it impacts wetlands, water quality, etc. If new transmission lines are greater than 69 kilovolts (kV) a Certificate of Environmental Compatibility might be necessary. County siting and permitting processes vary by county.

FWP is a consulting agency by law when environmental reviews are required (such as those required through MDEQ). FWP does work to encourage the voluntary use of fish and wildlife information through utilization of the FWP Crucial Area Planning System.

Projects

There have been no projects completed to date that involve compensatory mitigation for sage-grouse. One multi-state pipeline project, Keystone Pipeline, is in the review process and compensatory mitigation measures, primarily involving establishment of a compensatory mitigation fund to offset impacts to core and other important sage-grouse habitat, have been proposed. A mitigation bank on private land was discussed between a private conservation banker, FWP, and the project proponent as one potential option for offsite compensatory mitigation of impacts to sage-grouse associated with a multi-state transmission project. However, the transmission project proposal itself has since been withdrawn by the proponent.

Nevada[xi]

Mitigation Plan

Nevada has populations of both greater sage-grouse and a distinct population segment of the species known as the "bi-state population," shared with eastern California. Sage-grouse are state listed and considered a species of conservation priority. Nevada shares a 2004 state conservation plan[xii] with California which identifies strategies to improve habitat quality and quantity. Population management units (PMUs) are used as a basic unit for risk assessment and mitigation planning. A 2012 Bi-State Sage-Grouse Action Plan[xiii] identifies conservation actions by PMU related to specific threats. Local Area Working Groups based on PMUs implement this and local conservation plans. Plans state that mitigation may be needed and that mitigation strategies should be developed for certain activities but do not offer a framework for that process. In 2008 Nevada Governor Jim Gibbons issued an Executive Order declaring it state policy to "preserve and protect sage-grouse habitat whenever possible." The order identified the loss of key habitats due to wildfire, human disturbance, and development as major factors resulting in the decline of the species across the state.

In 2010 the Nevada State Governor's Sage Grouse Conservation Team produced the *"Nevada Energy and Infrastructure Development Standards to Conserve Greater Sage-Grouse Populations and Their Habitats"* which provides direction for energy development consistent with goals aimed at protecting sage-grouse and its habitat. The Standards document outlines site selection criteria and BMPs for energy development and associated infrastructure and a mitigation framework based on five habitat categories (from "irreplaceable" to "low potential"). An updated map and associated white paper depicting and explaining the habitat categorizations was produced in early 2012[xiv]. The recommendations differ for migratory (individuals travel > 10 km one way between seasonal ranges) and non-migratory populations

of sage-grouse. The document discusses how research focusing on sage-grouse populations and their habitat in response to development are important components in a mitigation process. It also recommends that each energy development project support a monitoring program.

Currently, projects that are proposed within BLM-designated Preliminary Preferred (PPH) or general (PGH) habitat must undergo a review by the BLM before they can proceed. That review may recommend project approval, project denial, or deference until the EIS is complete and RMPs are amended. A set of Instructional Memorandums identify adequate compensations for impacts using the model developed for the energy industry. For compensatory mitigation in higher quality habitats (Categories 1 and 2), recommendations are for a 3:1 offset ratio to include restoration or enhancement of habitat either adjacent to the project, within the project's PMU, or within lower quality habitat (Category 3) adjacent to the project. If adjacent habitat is not available, payment into an in lieu fund is suggested. Approximate cost to restore a degraded acre of habitat is listed as $600. Project proponents are offered the option to conduct the mitigation work themselves. Success criteria and monitoring protocols ensure that goals are met. The amount of funding requested to offset development impacts within Category 1 and 2 habitats is 3 times the impacted habitat area and zone of influence. The same scenario applies to projects in Category 3 habitats except the ratio is 2:1. Additional mitigation may be requested if the project also indirectly impacts higher habitat categories. For Category 4, mitigation would be based on the restoration potential of the site and current value to sage-grouse and would only be required for the actual number of acres disturbed. Project proponents may elect to pay a mitigation fee that is placed in to the Nevada Partners in Resource Conservation and Development (PRCD) program.

Compensatory mitigation in the form of habitat restoration could occur on land of any ownership. The Standards document states, "Proponents should consider mitigation opportunities on private lands in proximity to project areas that have value as sage-grouse habitat. Some of these options could include conservation easements, candidate conservation agreements with assurances, habitat enhancement projects, etc., but depend on willing landowners."

Siting Process and Environmental Review

Nevada's geography, geology and climate are favorable in many locations for renewable energy ranking Nevada a top state for development of these resources. Approximately 87% of Nevada is public land managed by federal agencies (BLM, DOD, USFS and others). Many energy developments, transmission corridors, geothermal, mineral, and oil and gas leases are located on public lands within the range of sage-grouse. As of 2009, the Nevada State Office of the BLM had received and processed 41 separate wind energy applications, 68 solar applications and 361 geothermal leases. Wind resource areas in western Nevada include large portions of sagebrush steppe. Non-renewable energy development is not as prominent as in other sage-grouse states (due to lack of water) although there are a growing number of oil and gas leases concentrated in the central and eastern parts of the state.

Nevada does not have a state siting process for energy projects, however the Public Utilities Commission (PUC) of Nevada does issue permits for construction of electrical facilities, including renewable energy generating facilities >150 kW. The PUC manages the Utility Environmental Protection Act (UEPA) process which is an environmental review for energy projects. Counties and major cities have siting authority for privately-owned land.

Nevada Department of Wildlife (NDOW) has responsibility for wildlife within the state and participates as a "Cooperative Agency" under NEPA and as an integrated resource for the joint environmental review of projects within the state clearinghouse. Also, NDOW and the Service participate on teams for larger energy projects and contribute to the planning process. Overall, review of energy projects by wildlife

agencies is opportunistic, relying upon state and federal laws such as NEPA and UEPA for the opportunity to provide comment. NDOW does not have authority to require mitigation though requirement for mitigation is a Nevada Board of Wildlife Commission policy. The state relies upon comments provided to the NEPA lead agencies to express views on impact identification and suitable mitigation.

In 2013, Governor Sandoval created the Sagebrush Ecosystem Council and Technical Team[xv] through Executive Order. The group's establishment, organization and direction were reaffirmed through passage of a bill (AB461). The Council, composed of industry and conservation representatives and ex-officio agency representatives, provides direction to the Technical Team. The Technical Team, composed of representatives from state agencies, provides technical assistance to the Council, participates in development of the state's alternative for the BLM sage-grouse EIS, and works on developing components of the State's Strategic Plan for sage-grouse.

Projects

Starting in 1991, several mining projects in Elko County performed a variety of off-site compensatory mitigation actions that ranged from habitat enhancement/restoration to in lieu funds. Several mineral development projects have been permitted that impact sage-grouse habitat but environmental review documents indicate impacts were mitigated through avoidance and minimization measures (e.g. timing restrictions). A vast majority of recent projects with sage-grouse impacts in Nevada have provided offsets in the form of payments to NDOW or the BLM which in turn fund or oversee the funding of restoration projects, land acquisitions, or research. At least four energy projects have been permitted that include compensatory mitigation (in the form of in lieu funds) for sage-grouse impacts: Ruby Pipeline, McGinness Hills Geothermal, Ormat/Tuscarora Geothermal and Spring Valley Wind. Multiple projects with potential to impact sage-grouse habitat are in various stages of review, including TransWest Express Transmission, Bald Mountain Mine Expansion, Pan Mine, Midas Mine, Hollister Mine and Noble Oil Exploration.

North Dakota[xvi]

Mitigation plan

North Dakota has a relatively small population of sage-grouse occupying the southwestern portion of the state that is contiguous with populations in Montana and South Dakota. The North Dakota Game and Fish Department (NDGFD) operates under a series of legal mandates that dictates responsibilities and authorities in carrying out its mission to "protect, conserve and enhance fish and wildlife populations and their habitats for sustained public consumptive and appreciative use." The 2005 *Management Plan and Conservation Strategies for Sage-grouse in North Dakota* was developed to fulfill the mission statement as it relates to sage-grouse and is being updated to include BMPs to ameliorate current threats in the state.

The state plan identifies avoidance and minimization measures for a variety of impact types. Mitigation, specifically offsite mitigation, was listed as a potential conservation measure for impacts from energy development in the state plan. The state does not currently have a mitigation framework.

Siting Process and Environmental Review

The North Dakota Siting Act governs siting activities. Its primary purpose is to ensure minimal adverse effects on the environment and on the welfare of its citizens. Siting Certificates are required for construction of any electric generating facility ≥ 50 MW of capacity. The North Dakota Public Service Commission (PSC) requires a Certificate of Site Compatibility and a Route Permit for electric transmission lines >115 kV. Environmental assessment and alternative routes are considered in the application approval process. For wind facilities < 80 MW, review by PSC is voluntary. The PSC can require mitigation as part of the permitting process (for wind, this applies to facilities > 100 MW). There is no county siting process.

NDGFD is not required to review these projects but is one of 21 designated state agencies entitled to receive notice on energy facility siting reviewed by PSC. NDGFD is working with the PSC to develop a process to flag projects that may impact sage-grouse so that a review can be conducted. The framework would have avoidance and minimization measures and would be used as a guide for proposed projects on private, state and federal lands. Currently any state owned land that is offered for mineral lease within sage-grouse priority habitat is flagged and NDGFD is allowed to comment on stipulations associated with the lease.

Projects

A 2011 report[xvii] on oil and gas development in North Dakota noted that in 2010, oil and gas development impacted 25% of the primary range of sage-grouse and 72% of the overall population respectively. Mitigation for these project impacts are unknown. Issues considered to be of current or future importance to sage-grouse in North Dakota include mining and energy development, power lines and generation facilities, and roads and motorized vehicles. In localized areas, over grazing has also been identified as a threat.

Oregon[xviii]

Mitigation plan

Oregon sage-grouse populations and sagebrush habitats comprise nearly 20% of the North American range wide distribution. The southeast corner of Oregon and adjoining portions of Nevada and southwest Idaho contain some of the most intact, high-quality sage-grouse habitat in the species range. Thus, management actions in Oregon have implications on a range wide scale. In the State of Oregon, BLM manages 70% of currently occupied sage-grouse habitat; 21% is privately-owned, and the remainder (8%) occurs on lands owned by the State, USFS or the Service.

The goal of the Oregon Department of Fish and Wildlife (ODFW) 2011 conservation plan, *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat*, is to promote the conservation of sage-grouse and intact functioning sagebrush communities in Oregon. The 2012 ODFW sage-grouse *Mitigation Framework*[xix] identifies guidelines for mitigating impacts to sage-grouse resulting from energy projects and other landscape scale industrial-commercial developments in areas identified as “core” or “low density” under a Core Area approach described in the state’s Plan. Generally, ODFW staff recommends avoidance of impacts to sage-grouse habitat that occur in core areas and mitigation at no net loss with net benefit for impacts to sage-grouse habitat that occur in low density areas.

Siting Process and Environmental Review

The regulatory environment in Oregon for the siting of wind and other renewable energy projects is governed by multiple agencies at the federal, state and local levels. Energy projects of any size located on or needing access through federal lands are reviewed and approved via federal land management right-of-way (ROW) permitting processes. Wind and other energy projects ≥105 MW are reviewed and approved through a formal state process that leads to a site certificate issued by the Oregon Energy Facility Siting Council (EFSC). Projects <105 MW are approved through a local (county) land use procedure requiring a conditional use permit. To date, all proposed wind projects in counties in Oregon with sage-grouse have been under 105 MW in capacity.

EFSC Siting Standards require that the proposed facility comply with the habitat mitigation goals and standards of the ODFW Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0025), including the associated Oregon sage-grouse mitigation framework– or go through the "balancing" review process if non-compliant. Through NEPA, projects on federal land also seek input from ODFW and the Service on impacts to species and habitat. Through either or both channels, wildlife agencies provide appropriate recommendations about whether avoidance is necessary and, in some cases, what type of mitigation is needed.

Given the need for more renewable energy producing facilities and the realization that land use goal should be in alignment, Oregon is considering changes to its siting statutes and rules. Governor Kitzhaber's 10-year energy action plan[xx], released December 2012, includes recommendations for actions the state can take in the next 10 years to facilitate better agency coordination and public participation; update standards and minimize conflicts between existing federal, state and local standards; and advance landscape-level planning and mitigation policies. Many recognize the potential value of offering an alternative approach to conservation with ecosystem market-based options that could be applied to a landscape scale; however, the state does not possess the clear priorities needed to target mitigation actions for the greatest conservation benefit or a policy framework to support this approach.

Landscape-level planning is also a key element in Oregon's efforts to develop a comprehensive "all-lands, all-threats" approach to sage-grouse conservation. Launched by the governor's office in June 2012, this initiative – known as *SageCon*[xxi] – is intended to help head off a potential ESA listing, or at least minimize the impacts of a listing if it occurs. The state's plan would build on Oregon's existing sage-grouse conservation strategy and revised BLM RMPs, supplemented by additional local land use measures and other state commitments and pre-listing tools such as candidate conservation agreements covering both public and private managed lands.

Projects

One pipeline (Ruby Pipeline), two wind projects (West Butte and Echanis), and at least two mine expansions (Celatom and Tucker Hill) have been permitted in the state or Oregon and have provided compensatory mitigation to benefit sage-grouse. One proposed transmission line project (B2H) and mine (Pine Creek Placer Mine) have draft mitigation frameworks. In addition, several proposed geothermal exploration projects (including Glass Buttes Geothermal) are in the early stages of assessing impacts to sage-grouse, but will most likely have some form of compensatory mitigation.

Compensatory mitigation for the Ruby Pipeline, a project that has been constructed, was handled through an in lieu type fund designed for habitat restoration projects. The area impacted was historic but

unoccupied habitat thus mitigation focused on sage-brush habitat to include actions that would benefit sage-grouse.

Two permitted but as yet constructed wind projects, West Butte and Echanis, both contain frameworks for more specific habitat mitigation plans that are designed to identify property upon which to conduct habitat management actions to benefit sage-grouse. For West Butte, these actions are to occur mainly on BLM with some private lands that would be acquired and managed. For Echanis, a combination of private and public (BLM) lands is proposed. Neither projects' mitigation plans have been fully developed or implemented.

At least two currently proposed projects, B2H and Pine Creek Placer Mine, will have impacts to sage-grouse that necessitate some form of compensatory mitigation. For B2H, a sage-grouse mitigation "blueprint" has been drafted. Per ODFW's sage-grouse mitigation framework, the blueprint is intended to guide transmission line siting outside of core habitat; assess and quantify direct and indirect impacts of transmission line, roads, and other project features; define mitigation ratios; and identify potential mitigation actions. Similarly for Pine Creek Mine, a draft habitat mitigation plan identifies direct and indirect impacts to sage-grouse habitat and describes actions and priority locations for compensatory mitigation as well as a general timeline and funding of mitigation work.

South Dakota[xxii]

Mitigation Plan

South Dakota is considered the most easterly fringe of the range of sage-grouse in the United States. Although formerly found throughout the western quarter of South Dakota, the majority of the birds are now restricted to two counties (Butte & Harding) in the northwest corner of the state.

The mission of the South Dakota Department of Game, Fish and Parks (SDGFP) is to manage the state's "wildlife and fisheries resources and their associated habitats for their sustained and equitable use, and for the benefit, welfare, and enjoyment of the citizens of this state and its visitors." The 2008 *Greater Sage-grouse Management Plan of South Dakota* was developed to fulfill the division's mission statement pertaining to sage-grouse in South Dakota. The plan does not mention mitigation and there is no state mitigation framework. A revision of this plan is underway.

Siting Process and Environmental Review

South Dakota Public Utility Commission (SDPUC) has permitting authority for energy conversion (i.e. conversion of natural gas or fuel oil to an alternate fuel or power source) and transmission facilities and has regulatory authority over wind power projects >100 MW. The SDPUC issues a Permit to Construct for all electric transmission lines > 115 kV. The SDPUC also has jurisdiction over certain hydrocarbon pipelines. Smaller projects are subject to local government review and some counties have regulations specific to wind power.

After facilities file a notice of intent, the SDPUC appoints a local review committee, which submits a report of its findings within seven months of the date the application was filed. Upon the receipt of a complete application, the Commission must determine if an environmental impact statement is required.

If required, applicants must demonstrate that all applicable state water and air quality standards and regulations are met. Review by SDGFP is opportunistic, and most often only through projects that fall under NEPA. The state does not have the authority to require mitigation and recommendations are voluntary.

South Dakota has voluntary sighting guidelines for wind power projects (*Sighting Guidelines for Wind Power Projects in South Dakota*[xxiii]). The guidelines recommend pre-construction biological reconnaissance, design measures to minimize impacts to wildlife, and to consult early and frequently with SDGFP and the Service. Developers are encouraged to mitigate for habitat loss in areas where there is ecological damage in the siting of a wind power facility and to consider possible cumulative regional impacts from multiple wind energy projects when conducting environmental assessments and making mitigation decisions. Appropriate mitigation actions include but are not limited to ecological restoration, long-term management agreements, conservation easements, or fee title acquisitions to protect lands with similar or higher ecological quality as that of the wind power site.

Projects

There have not been any projects with compensatory mitigation for sage-grouse to date. One multi-state pipeline project, Keystone Pipeline, is in the review process and mitigation measures for impacts to sage-grouse have been proposed.

Within South Dakota's sage-grouse range, little gas and oil drilling has occurred, however with new technologies and the demand for energy, increased exploration is rapidly growing. Although most wind power development has occurred in the eastern half of the state, expansion of wind power and associated infrastructure is also a concern for its potential to impact sage-grouse populations.

Utah[xxiv]

Mitigation plan

Utah is home to both the greater sage-grouse and Gunnison sage-grouse species. The goal of the 2013 state management plan (for greater sage-grouse) is to protect, enhance, and restore habitat to support, in Utah, a portion of the range-wide population of greater sage-grouse necessary to eliminate threats to the species and negate the need for listing. The plan is designed to eliminate threats while balancing the economic and social needs of Utah residents though a coordinated program which provides for, 1) an incentive-based program for private, local government and School and Institution Trust Lands Administration (SITLA) lands, and 2) reasonable and cooperative regulatory programs on other state and federally managed lands.

The plan outlines population (lek) and habitat objectives, including acreage goals for protection and enhancement of defined habitat and restoration of non-habitat "opportunity areas" within 11 defined sage-grouse management areas (SGMA). SGMAs encompass the highest sage-grouse breeding density areas, which support more than 90% of the Utah aggregate population of greater sage-grouse. Most existing land uses are excluded from these management areas (i.e. considered non-habitat) and are mapped according to surface ownership only. SGMA boundaries are reviewed annually and adjustments to these boundaries and habitat designations are reviewed every five years.

Management of activities on state and federally managed lands within SGMAs are based on a hierarchal protocol of avoidance, minimization, and compensatory mitigation measures related to disturbance. Disturbance is defined as ground disturbing activities that eliminate or render sage-grouse habitat unusable for the life-cycle of the bird or human activities which cause a negative response from birds. The protocol does not apply to private, SITLA, or local government lands unless an agreement is reached with the landowner. A disturbance that lasts < 5 years is defined as temporary; > 5 years is considered permanent. Temporary disturbances do not require mitigation if restoration work is effective within the five year period.

A mitigation program, coordinated through the state, is being developed to provide offsite mitigation opportunities for impacts to state and federally managed lands (and for other lands on a voluntary basis). If avoidance and minimization measures are not sufficient, mitigation at a 4:1 ratio of mitigated to disturbed acres of lek areas, nesting and brood-rearing areas and winter habitat are recommended. For "other" habitat the ratio is 1:1. For areas defined as non-habitat, including those that have the potential to become habitat, no mitigation measures are needed. In addition, cumulative new permanent disturbance within any SGMA should not exceed 5% of defined habitat on state or federally managed land. Existing disturbances do not count toward the 5% cap. Successful mitigation may include on or off-site management activities (e.g. tree removal) or use of an offsite "bank".

The plan states that if the species becomes federally listed, it shall become optional and may be revoked and rendered ineffective by the Governor.

Siting Process and Environmental Review

Permitting for energy development is handled at the state level; counties do not have a siting or permit process. Utah's Resource Development Coordination Commission (RDCC), an office of the Governor, serves as a clearinghouse for activities affecting state and public lands. The RDCC coordinates the review of technical and policy actions that may affect the physical resources of the state and facilitates the exchange of information on those actions among federal, state, and local government agencies. The Division of Oil, Gas and Mining (under the Department of Natural Resources - DNR) reviews energy projects and provides permits. Wind and other renewable energy projects are handled through the Office of Energy Development.

The Utah Division of Wildlife Resources (UDWR) under the DNR reviews and comments on projects through the RDCC process and/or by working with other state divisions in early planning phases. For oil, gas and mining projects UDWR has staff dedicated to working with project proponents in the early planning process to avoid or minimize impacts to wildlife. Recommendations for avoiding, minimizing and/or mitigating impacts to wildlife are technically voluntary but have been successful in conserving sage-grouse. Coordination with the Service occurs where authorities or interests overlap.

Projects

UDWR claims success in avoiding or minimizing impacts on a number of projects affecting sage-grouse by recommending changes in project design or planning. For unavoidable impacts, compensatory mitigation has been utilized in several projects, including Ruby Pipeline, West Taviputs Oil & Gas, Alton Coal Mine, and numerous projects involving mineral extraction in the last decade. For most of these projects, monetary compensation has been used to carry out habitat restoration activities to meet offsets for impacts to sage-grouse. Several more projects that may impact sage-grouse are in various stages of the planning and review process but either do not or unlikely will not fall under the provisions of the 2013

state plan. These projects include the following: Sufco Green's Hollow Mine, Kinney Mine, Sigurd to Red Butte transmission line, the Narrows Project dam and reservoir, and the multi-state transmission lines Energy Gateway South (with Colorado and Wyoming), Trans West Express (with Colorado and Wyoming) and Zephyr (with Colorado, Nevada and Wyoming).

Washington[xxv]

Mitigation Plan

The sage-grouse was listed as a threatened species by the state of Washington in 1998. Sage-grouse occur on about 8% of their historical range; the population is estimated to have declined 62% from 1970 to 2003 and is restricted to two main breeding populations. Major threats to the Washington populations include fire and continued conversion of shrub-steppe to cropland or development; additional factors affecting sage-grouse include the impacts of military training, transmission line development within or adjacent to remaining core habitat, and past and ongoing grazing practices.

The Washington Department of Fish and Wildlife's (WDFW) 2004 Recovery Plan summarizes the state of knowledge of sage-grouse in Washington and outlines strategies to increase their population size and distribution in order to ensure the existence of a viable population in the state. Mitigation is not mentioned in the plan; however Washington State requires a mitigation sequence be followed for impacts to critical areas such as state listed species. Project proponents must attempt to avoid and minimize impacts prior to compensating for impacts. This mitigation sequence requires thorough review of a project's potential impacts and an assessment of the proposed mitigation when appropriate. The State Environmental Policy Act (SEPA[xxvi]) is a typical vehicle for such a review. Mitigation for impacts to sagebrush habitat have been assessed and received in the past through SEPA.

For wind developments, the 2010 *Wildlife Wind Power Guidelines*[xxvii] outlines habitat mitigation principles which include siting recommendations and a compensatory mitigation framework. While sage-grouse are not addressed specifically in the guidelines, impacts to their sagebrush habitat are included. For permanent habitat impacts, ratios from 1:1 to 2:1 (depending on the quality of habitat lost) of legally protected and like-kind habitat are required. For temporary impacts, ratios range from 0.1:1 to 0.5:1 for acquisition are required (the impacted area may also be restored as part of the mitigation package). A more detailed review and discussion between WDFW and the project proponent is required to assess impacts to state listed species, such as the sage-grouse, and their associated habitats. If an agreement between the parties is secured, standards could be included into the state or local government processes for review and approval. A wind project developer, through consultation with WDFW and the permitting authority, may choose to use "By Fee" mitigation or a combination of habitat acquisition and this by fee/ in lieu mitigation.

Siting Process and Environmental Review

The State Energy Facility Site Evaluation Council (EFSEC[xxviii]) has jurisdiction over all major energy facilities (>350 MW) and any sized renewable energy facility that chooses to participate in the EFSEC review process. WDFW is one of five agencies represented on EFSEC. Counties or local governments permit smaller projects and those projects that choose not to go through the EFSEC review. Projects are subject to SEPA. The Washington Legislature passed HB 2402 in March 2006, which provides for

expedited review for those facilities that pass the SEPA checklist for renewable energy applications. The regulatory authority must consult with WDFW and provide opportunity to comment on a project through SEPA. Additionally, WDFW has the ability to appeal SEPA determinations.

SEPA requires all state and local governments to identify and evaluate probable environmental impacts and develop mitigation measures that will reduce adverse environmental impacts. It also gives agencies, including WDFW, the ability to condition or deny a proposal due to identified likely significant adverse impacts. If the project does not involve an agency action, or there is an action but the project is exempt, environmental review is not required; however if it does involve agency action, a preliminary assessment and proposal is initiated. After review, the lead agency issues either a determination of nonsignificance, which may include mitigation conditions, or if the proposal is determined to have a likely significant adverse environmental impact, a determination of significance/scoping notice is issued which starts the EIS process. The EIS will analyze alternatives and possible mitigation measures to reduce the environmental impacts of the proposal.

In addition to SEPA, Washington State's Growth Management Act (GMA) provides for the development of city and county Critical Area Ordinances (CAOs) to protect habitat. The GMA provides a framework and requirements for local governments to adopt comprehensive plans, zoning ordinances, regulations to protect critical areas, and coordinate planning efforts with each other, providing for a landscape-scale strategy for managing growth and protecting habitat. Development proposals and infrastructure projects must first pass review for compliance with the local comprehensive plan and zoning ordinances prior to applying for a site specific permit. The development permit process triggers a review specific to the jurisdiction's CAO, which by state law must consider the best available science when adopted. At this stage of the process, a property survey is required and additional Habitat Management Plans (HMPs) are required if a species or habitat included in the suite of CAO protections is present on the parcel of land.

In the case of certain resource or energy development projects, the presence of a state listed species or its habitat triggers a critical areas report or HMP that may require consultation with WDFW or use of WDFWs *Priority Species and Habitat* (PHS[xxix]) recommendations. WDFW produces PHS documents that include specific recommendations for the sage-grouse protection and restoration of shrub-steppe habitat, as well as *Landscape Planning for Washington's Wildlife: Managing for Biodiversity in Developing Areas*. PHS management recommendations are not regulatory, but through their adoption into regulations of counties and cities they become regulatory. These recommendations are considered to be best available science, as upheld in a number of legal cases.

WDFW has state gross misdemeanor authority to enforce the taking of a state listed species such as sage-grouse. Most local governments also have dedicated code enforcement officers who inspect site developments relative to permit requirements, including HMPs, and process citations and stop work orders through the local prosecutor or hearing examiner as necessary.

Projects

While a handful of projects have impacted and subsequently required mitigation for shrub steppe habitat, most of these were not near sage-grouse populations. For those that were close to sage-grouse, project proponents have worked with the agencies (e.g. in accordance with the *Wildlife Wind Power Guidelines)* to avoid impacts to sage-grouse. One proposed project was modified to reduce impacts to sage-grouse and though there may still be some impacts, the project is on hold and it set a precedent for future projects not to impact sage-grouse habitat. Only one project has been permitted that had potential impacts to the species, the Wild Horse Wind Farm. The habitat within the project area was primarily dispersal habitat

and unoccupied at the time of project development. Mitigation for impacts to sage steppe habitat includes designation of a 600 acre on-site habitat parcel.

Wyoming[xxx]

Mitigation plan

Wyoming is home to approximately 35-40 percent of the range-wide population of sage-grouse. Of all states in the eastern half of the species range (Colorado, Montana, Utah, Wyoming, North Dakota and South Dakota); Wyoming contains the majority of the breeding population and also has the highest energy development risk.

Established by governor's executive order in 2008 and renewed by executive order in 2011, Wyoming's "core area strategy" (WCAS) defines and limits development in important habitat areas. The Wyoming Governor's "Sage-Grouse Implementation Team", composed of industry representatives, private landowners, conservation interests, and government officials, identified core population areas as important breeding areas for sage-grouse in Wyoming. These mapped areas encompass high-density breeding, brood rearing and wintering habitats. Although this designation represents 35% of all sage-grouse habitats in Wyoming and less than a quarter of the state as a whole, the core areas account for about 80 percent of the total estimated breeding population and cover approximately 15 million acres in the state.

The WCAS plan is spatially explicit and built on avoidance and protection of current populations. The success of the plan in reducing declines in sage-grouse population rests heavily on the definition of core areas and in assuring those areas are not impacted. Impacts to non-core habitat (or on-going impacts to core areas from land use practices in existence before the strategy) are essentially considered mitigated for by avoidance of core habitat. If implemented fully, demand for mitigation in the form of compensatory offsets is greatly reduced. However, because there are exceptions and some activities may be permitted in core habitat, compensatory mitigation may be needed. The plan does not outline in detail what any potential offsets should look like (in terms of stewardship) or where the supply would come from (private or federal land).

Siting Process and Environmental Review

The state of Wyoming's Industrial Siting Commission (ISC) reviews and permits energy development projects, including wind. The ISC takes into consideration recommendations or comments from the Wyoming Game and Fish Department (WGFD). A 2010 WGFD document *Recommendations for Development of Oil and Gas Resources Within Important Wildlife Habitats*, serves as a planning guide designed to ameliorate conflicts between oil and gas development and wildlife resources.

For wind projects, legislation passed in 2010 (Wyo. Stat. Sec. 18-5-501 through 513) requires the developer of any wind facility ≥0.5 MW to obtain a permit from the board of commissioners of the county where the facility is located. A county permit is also required to expand any wind facility that was originally built after July 1, 2010. In 2010, WGFD published the *Wildlife Protection Recommendations for Wind Energy Development in Wyoming* to address the need to protect wildlife resources while wind energy is developed in the state.

Specifically for sage-grouse (under the WCAS), any new state or federally permitted development that contains core area habitat cannot disturb more than 5 percent of the total surface area (per an average of 640 acres) within the analysis area defined by the executive order. Projects must also not have any surface facilities within 0.6 miles of occupied leks. Additionally, only an average of one new or existing oil and gas well pad per 640 acres is allowed. These restrictions apply to several activities including drilling, agriculture, and mining - to the extent the state has regulatory authority. Wind development is not currently permitted in core areas. In non-core areas, minimization measures are designed to maintain habitat conditions such that there is a 50 percent likelihood that leks will persist over time. Current management and existing land uses in core or non-core areas will not have these restrictions.

Projects

At least one project has been permitted with compensatory mitigation for impacts to sage-grouse – Ruby Pipeline. Mitigation funds were collected to perform conservation projects designed to enhance sagebrush habitat crossed by the Ruby Pipeline Project, add to the state of knowledge of these species, or provide protection of high-quality habitat by acquisition. Two proposed projects, the Gateway West and Energy Gateway South transmission lines, will have impacts to sage-grouse. The mitigation measures for these projects are being proposed but are finalized.

For general habitat and other impacts, the Jonah Interagency Mitigation and Reclamation Office (JIO) manages a $24.5 million monitoring and mitigation fund committed by EnCana Oil & Gas (USA), Inc. ($21.5 million) and BP America Production Company ($3 million).

APPENDIX A. State Summary

Summary of state mitigation programs, siting processes, and types of compensatory mitigation for resource development projects impacting sage-grouse (GSG).

	CA	CO	ID	MT	NV	ND	OR	SD	UT	WA	WY
GSG Mitigation Framework	No[1]	No	Draft	No	Yes[2]	No	Yes[2]	No	Yes[3]	No[1]	Yes[2,4]
State Energy Siting Process	Yes	Yes (Wind Separate)	No	Yes (Except Wind)	Yes (>150 kW Electric or Renewables)	Yes (≥50 MW; Except Wind <80 MW)	Yes (Except <105 MW; Wind Separate)	Yes (Except Wind <100 MW; Wind Separate)	Yes	Yes	Yes
County or Local Siting Permit	Yes	Yes	Yes	Variable	Yes	No	Variable	Variable	No	Yes	Yes
State Wildlife Agency Review[5] (Primary Mechanism)	Yes (SEPA[6])	Yes (Siting)	Opportunistic (NEPA; Voluntary)	Yes (Siting; SEPA)	Variable (Siting; Opportunistic)	Opportunistic (NEPA)	Variable (Siting; Opportunistic)	Yes (SEPA)	Yes (Siting; NEPA)	Yes (SEPA; County)	Yes (Siting)
Offsets for GSG[7] - Permitted Projects	n/a	In Lieu[8] (Research)	n/a	n/a	In Lieu (Restoration[9]), Restoration	n/a	In Lieu, Restoration	n/a	In Lieu, Research, Restoration	On-site Restoration	In Lieu, Monitoring
Offsets for GSG - Proposed Projects	n/a	Restoration	In Lieu (Restoration *to* Land Protections)	In Lieu, Research	n/a	n/a	Restoration, Land Protections	In Lieu, Research	Restoration, Land Protections	n/a	In Lieu (Restoration *to* Land Protections)

[1] However, state law (e.g. SEPA) often provides for GSG or sagebrush mitigation.
[2] Nevada's framework is specific to energy development; the Oregon and Wyoming frameworks are energy-centric.
[3] Only state where the mitigation plan is embedded in the state sage-grouse conservation plan.
[4] By executive order and does not outline compensatory mitigation.
[5] Opportunistic = review and comment on projects through the NEPA process, working groups, or by voluntary request of local government or project proponent.
[6] SEPA = generic acronym for a state environmental protection act, similar to NEPA process; California also has CEQA.
[7] Primary mechanism whereby compensatory mitigation was received or is proposed to offset unavoidable impacts to sage-grouse.
[8] In Lieu = refers generally to some form of payment "in lieu" of site specific mitigation. Funds may be used for land acquisitions, habitat restoration, research, etc.
[9] Restoration – refers generally to habitat restoration measures (juniper removal, seeding, etc).

APPENDIX B. Sample Projects Summary Tables

Table 1: Examples of permitted energy and mining projects with compensatory mitigation measures for greater sage-grouse (GSG).

Project Permit Date	**Land Tenure**	**Development Type**	**States**	**GSG Impacts**	**Compensatory Mitigation**
Echanis/North Steens 2012	Private *also* BLM	Wind	OR	No leks within 3 miles of proposed turbine locations but using a noise buffer analysis displacement effects on ~10,800 acres habitat from transmission line and road impacts.	10,885 acres of mitigation; Two Habitat Management Plans (HMPs) will identify sites (on private and public land) and management measures to take.
Celatom Mine Expansion 2012	Private/BLM	Diatomaceous Earth Mine	OR	Impacts to 1,260 acres of core and non-core sage-grouse habitat from mining activities (up to 50 years), roads, and exploration drilling	4.4:1 acres mitigation for new mine disturbance = 5,568 acres mitigation needed. Mitigation includes juniper, medusahead rye control focused on areas outside and adjacent to project. 2,220 acres on BLM land has been identified as potential juniper control area
McGinness Hills 2011	BLM	Geothermal	NV	51,800 acres habitat (14,530 acres of core-breeding habitat), 4 active leks, 3 unknown status leks within 2-mile project buffer (3 leks <1 mile from proposed structures and construction); 217 acres of direct and/or long-term surface disturbance to foraging/nesting habitat including Category 1; 34 acres surface disturbance to brood-rearing habitat	4:1 offsite habitat restoration (1,004 acres) on BLM/USFS lands in project vicinity but outside 2-mile buffer, preference for core-breeding habitat areas. Treatments may include burn restoration, brush thinning, weed treatment, riparian/meadow fencing, and tree removal. Measures monitored and effective for life of project unless monitoring deems them inadequate. If population/lek attendance decreases, additional mitigation measures (i.e. noise reduction and timing measures) must be taken.
Tuscarora Facility 2011	BLM	Geothermal Plant, Road & Transmission Line	NV	Direst removal 84 acres and Indirect effects to 8,091 acres category 1 habitat, including 5,725 acres for the new transmission line 10 active leks within 3 miles of power plant & access road (3 leks <1 mi and 1 lek <0.25 mi) 13 lek sites near transmission line	6:1 acres habitat conservation (507 acres) and $600/acre restoration for surface disturbed in GSG habitat ($622,500 went in Voluntary Conservation Fund for GSG). Restoration work on BLM land in vicinity of project. Treatments may include burn restoration, brush thinning, weed treatment, fence marking, retrofit power poles, easements, and rancher compensation for grazing modifications. Monitoring leks and birds for 10 years. If leks decline then may trigger $1.9 million bond for burying 8,500 ft of transmission line and further noise reduction.

Project Permit Date	**Land Tenure**	**Development Type**	**States**	**GSG Impacts**	**Compensatory Mitigation**
West Butte 2011	BLM	Wind	OR	Approximately 16,335 acres of sagebrush habitat located within 3-mile buffer of known leks near/within project area. GSG documented use of area for many years, habitat includes breeding/nesting, summering (brood rearing), and wintering. Using a noise buffer analysis determined 9,000 acres of impacts to GSG.	9,000 acres of restoration on mostly BLM land; details to be determined in HMP
Ruby Pipeline 2010	FERC	Gas Pipeline	NV, OR, UT, WY	8,775 acres sagebrush 143 miles quality GSG habitat 357 miles medium quality GSG habitat	In Lieu Funds (based on land value per acre) $8,826,411 for Nevada, $4,863,450 for Oregon, $1,266,377 for Utah, $909,543 for Wyoming Project is constructed and mitigation is being implemented or complete.
West Tavaputs 2010	BLM *also* State/Private	Oil & Gas	UT	22,951 acres sagebrush that includes core winter GSG habitat 685 acres total long term surface disturbance	4:1 ratio for long term disturbance acreage; 30% to be done in first 3 years; 70% to be done within 1 year of drilling completion. Includes habitat enhancement projects on federal, state or private land and contributing funds to state for GSG monitoring. Conservation easements may be used. Supervised by mitigation oversight committee.
Alton Coal 2010	Private	Coal Mine	UT	Alton population (southernmost in U.S.) resides in area. Loss of habitat and possible displacement of the lek.	Yearly fees and research funding; 72-acre on-site conservation area; habitat restoration in 1,700 acre corridor to link to a nearby population.
Spring Valley 2010	BLM	Wind	NV	No leks in 8,565 acre project area but 3 leks <1 mile from boundary and 2 leks <5 miles from boundary. Direct disturbance to 140 acres habitat. Project area contains 3,643 acres winter and summer habitat.	$500,000 fund for sagebrush restoration
Wild Horse & Expansion 2005, 2009	Private	Wind	WA	Not occupied by GSG but historic habitat and a corridor area; impacts to sagebrush assessed on 8,600 acres of shrub-steppe; 165 acres permanently lost and 401 acres temporarily disturbed	600 acre on-site mitigation parcel for original and part of expansion project impacts

Project Permit Date	**Land Tenure**	**Development Type**	**States**	**GSG Impacts**	**Compensatory Mitigation**
Multiple Oil & Gas Projects	Mostly Private	Oil & Gas	CO	Varies. Large companies with large projects have programmatic assessments for their impacts with the state.	Programmatic mitigation plans by company. A mitigation plan outlines BMPs to avoid and minimize adverse impacts as well as specific compensatory mitigation measures. Mitigation plans sometimes cover multiple species. Compensatory mitigation for GSG involves funding specific research projects, which have included population monitoring, juniper removal, habitat enhancement, and efficacy of BMPs. Acquisitions, easements, or land exchanges with long-term management have not been used to date for GSG.

Table 2: Examples of proposed projects with proposed compensatory mitigation measures for greater sage-grouse (GSG). As these projects are in the review process, the proposed project and/or mitigation measures may change.

Project Draft Review Date	**Land Tenure**	**Development Type**	**States**	**GSG Impacts**	**Compensatory Mitigation**
Gateway West 2013	BLM	Transmission	ID, WY	Unknown acres of key/core habitat may be disturbed and multiple leks located with 0.25 and 0.6 miles of the project area.	Framework for impact and offset assessment being developed based on HEA. In lieu fund proposed with mitigation project oversight committee. Measures could include fence marking, juniper removal, seeding, sagebrush restoration, and easements.
Keystone XL 2013	BLM, Dept. State, Private, others	Pipeline	MT, SD	35 active leks within 3 miles of facilities. Multiple leks within 4 miles of roads & pump stations 40 historic lek locations in South Dakota within 4 miles of facilities 190 miles of pipeline through habitat in Montana (20 miles core, 94 miles moderate to high quality, 96 miles marginal) 2.75-mile-long permanent access road and 1 pump station in GSG habitat in Montana	Establish compensatory mitigation funds in each state for states and/or BLM to enhance and preserve sagebrush communities Fund research in both states to determine if presence of facility has effects on GSG Implement reclamation measures for disturbed areas, include working with landowners to manage livestock grazing of reclaimed areas
B2H **2013**	BLM, Private	Transmission	ID, OR	Specific acres/effects unknown as this time but likely to affect both core and low density habitats in Oregon.	Draft mitigation framework proposed. Specific HMP to be developed consistent with project's mitigation framework and state's mitigation plan.
China Mountain 2011	BLM	Wind	ID, NV	22,500 acres key GSG habitat 8,150 acres moderate GSG habitat	On- and off-site restoration; site specific monitoring plans with performance standards; research and monitoring; real estate and financial protections mentioned
Alton Coal 2011	BLM	Coal Mine	UT	1,290-1,402 acres of crucial sage-grouse brooding habitat potentially disturbed by mine Occupied sage-grouse habitats occur adjacent to 44.5 miles of the road route, consisting of brooding habitat adjacent to 43.8 miles and wintering habitat adjacent to 0.7 miles	Short-, medium- and long-term habitat reclamation measures would be required to enhance nesting and brooding habitats. Offsite mitigation and conservation activities could include habitat enhancement and the development of migration corridors between habitat areas and creating or enhancing habitat on public lands in the tract in the no-coal zone. Project does not fall under the mitigation provisions of the Utah 2013 state plan.

APPENDIX C – PROJECT SUMMARIES

The following information summarizes a subset of known projects that have been permitted or are in the process of being permitted and have impacts to sage-grouse where compensatory mitigation is being implemented or is being proposed. It is not an exhaustive list but meant to provide real world examples and details.

Information was obtained from publicly available documents (such as Final EISs or RODs). For those projects still in the review process, information was obtained from Draft EISs or other draft documents. Therefore, the information on specific impacts to sage-grouse and proposed mitigation could change. This material is presented in order to show the variety of compensatory mitigation strategies that are being considered for impacts to sage-grouse.

Projects with impacts to sage-grouse that were mitigated solely through avoidance and minimization measures (e.g., construction timing restrictions, buffers around leks) were not included here. However, it is important to note that this has been both a historic and current method of sage-grouse mitigation in most areas. Whether these measures are adequate in avoiding or minimizing impacts to the species is difficult to assess. The multi-state TransColorado Pipeline (Rockies Western Phase Project), presented first below, is a representative example of this form of impact assessment and mitigation.

PERMITTED PROJECTS

Rockies Western Phase Project – Gas Pipeline (CO, WY)[xxxi]

Information from FERC Final EIS 2007

Note: This project does not have a compensatory mitigation piece for impacts to sage-grouse. It was included to represent the way a majority of mitigation for sage-grouse is accomplished – via "avoidance and minimization" measures.

Background

The Federal Energy Regulatory Commission (FERC) issued a final EIS in 2007 on the natural gas pipeline facilities proposed by Rockies Express Pipeline LLC (Rockies Express), TransColorado Gas Transmission Company (TransColorado), and Questar Overthrust Pipeline Company (Overthrust). The Rockies Western Phase Project (project) consists of construction and operation of ~795 miles of natural gas pipeline and a total of 237,320 horsepower of new compression. FERC approved the project. Following completion of the proposed facilities, the project would transport up to 1.5 billion cubic feet of natural gas per day. Facilities would be located in Colorado, Wyoming, Nebraska, Kansas, Missouri, and New Mexico.

The project involved three separate applicants with three interconnected projects that were rolled into one system. The BLM and Service had lands affected by the proposal and were cooperating agencies for the development of the EIS. Now fully operational, the pipeline provides natural gas transportation service from supply basins in the Rocky Mountains to demand-intensive markets in the Midwest.

Impacts to Sage-grouse

Three sections of this multi-state project (identified by sub-project name, company and geography) were identified as having potential impacts to sage-grouse:

- REX-West Project - Rockies Express (includes WY, CO): Potential direct impacts of construction on the gas pipeline and associated compressor stations on sage-grouse may include the loss of lekking grounds and other sage-grouse habitat. Depending on the timing of construction, the REX-West Project could impact sage-grouse during lekking activities or brood rearing, and could cause displacement, injury, or direct mortality of individuals.

- Blanco to Meeker Project - TransColorado (CO): One sage-grouse lek, part of the Piceance population, was documented in 2004 approximately 1.25 miles from one of the compressor station sites. The Piceance population possesses limited habitat and a low number of remnant grouse and is particularly sensitive to disturbance and habitat loss. Sage-grouse could be affedted by further constricting the amount of habitat available for southwest-to-northeast movements, impacting nearby birds due to compressor station noise, and creating additional perches from which raptors could prey on birds. Direct impacts of construction on sage-grouse may include the loss of 0.75 acres of habitat. Depending on the timing of construction, the Blanco to Meeker Project could disturb sage-grouse during lekking activities or brood rearing.

- Wamsutter Expansion Project - Overthrust (WY): Sage-grouse have the potential to occur in the project areas but WGFD and BLM noted that no leks or breeding or brood rearing habitat occurs within 2 miles of the proposed pipeline or compressor stations.

Mitigation

- REX-West Project (WY, CO): "Although the REX-West Project would not result in a permanent loss of habitat along the pipeline right-of-way, we expect that the regeneration of sagebrush would be slow, taking up to several decades. However, potential impacts on sage-grouse habitat would be minimized through the collocation of the proposed right-of-way with existing pipeline corridors. Given the suitable habitat in the general area, it is not likely that the minor, yet long-term loss of habitat along the pipeline right-of-way would affect sage-grouse populations in the vicinity of the proposed project."

  Rockies Express stated that it would conduct field surveys during the spring of 2007 in accordance with standard agency protocols to determine the status and proximity of lek sites from two of the facilities. Rockies Express identified possible mitigation measures if an active lek was documented within 0.25 mile of the construction ROW including, (1) beginning construction after June 30, or as otherwise permitted by the appropriate resource agency; and (2) reducing the width of the ROW through the lek and avoiding permanent surface development within the lek. Following construction, the company proposes to restore areas of suitable habitat by grading the areas to pre-construction contours and seeding disturbed habitats with a seed mix that includes native species and is acceptable to the landowner, local NRCS office, and the BLM (if on federal land).

- Blanco to Meeker Project (CO): "Impacts on sage-grouse habitat would be minimized by siting the proposed facility at a location already in natural gas industrial use. Given other suitable habitat in the general area, it is not likely that the minor, yet permanent loss of habitat from the new facility would affect sage-grouse populations in the vicinity of the proposed project." In regards to the noise issue, the Final EIS states that the noise "level is well below studies that suggest a noise level

of approximately 47dBA to be the threshold effect for bird species in grassland and woodland habitat… Accordingly, we do not believe that this species would be affected by the project."

In addition, CPW has recommended: "(1) that no construction activity should occur within 2 miles of sage-grouse leks between March 1 and July 15; (2) that sage-grouse habitat should be restored with the planting of an appropriate subspecies of big sagebrush and a high amount and diversity of forbs; (3) weed control should be limited to spot spraying to avoid killing desirable shrubs and forbs; and (4) rock produced by construction should be buried on-site or removed from habitat areas."

- Wamsutter Expansion Project (WY): Overthrust has committed to several BLM-approved mitigation measures, which include conducting a one-pass aerial lek survey in spring 2007. If a lek is identified within the project area, Overthrust has agreed that no construction activities would occur within 2 miles of occupied leks or identified sage-grouse nesting and early brood-rearing habitat during the breeding and nesting season (March 15 through July 15). No noise-emitting or tall surface facilities would be installed within 0.25 mile of the perimeter of leks to help minimize increased raptor presence and predation of sage-grouse.

  According to the Final EIS, "Given the abundant suitable habitat in the general area, it is not likely that the minor, yet long term loss of habitat along the pipeline ROW would significantly affect sage-grouse populations in the vicinity of the project. Because the pipeline would be co-located with existing pipeline rights-of-way and previously disturbed areas and no known leks or breeding habitat occur within the proposed project area, we conclude the Wamsutter Expansion Project would not cause population-level impacts or reduced species viability, nor cause a trend toward federal listing."

Echanis/Steens Wind (OR) [xxxii]

Information from BLM Final EIS and ROD 2012

Background

The Echanis Wind Energy Project (Echanis Project) is a 104-megawatt (MW) wind energy facility that will be constructed on a 10,500-acre privately-owned tract near Diamond, Oregon. The project includes 44 miles of transmission line. Because development of the Echanis Project is dependent upon federal approval of the ROW grant for the transmission line, the Echanis Project qualifies as a connected non-Federal action for the BLM. The BLM conditional ROD was signed in 2012. The project has been tied up in litigation and has not moved forward (as of July 2013).

Impacts to Sage-grouse

ODFW's *Mitigation Framework* establishes a methodology for computing habitat disturbance and a mitigation ratio based upon the level of disturbance up to the 40 dbA threshold. Output from the noise propagation model is binned into 5 dbA contours from highest to lowest potentially affecting sage-grouse (40 dbA). Habitat disturbance and mitigation ratios are then calculated for areas falling within contours greater than 50 dbA (at a ratio of 2:1 acres) and 40 to 50 dbA (at a ratio of 1:1).

Using the noise propagation model method to estimate area of impact from the wind farm and disturbance bands to calculate the impact of the transmission line, the project would facilitate impacts to approximately 7,500 acres of low density sage-grouse habitat at a mitigation value of 10,800 acres total.

Mitigation

The ODFW *Mitigation Framework* provides direction to: (a) calculate the recommended mitigation acreage requirement; (b) select a mitigation area (the "Mitigation Area"); (c) develop a baseline assessment and conservation actions to be implemented in the Mitigation Area; and (d) monitor and preserve the Mitigation Area.

BLM will require 2,412 acres of mitigation as a condition of the ROW due to effects to sagebrush and sage-grouse habitat resulting from the Transmission Project, a portion of the main access road on public land, and noise effects on public lands adjacent to the project. Harney County will impose an additional estimated 8,473 acres of mitigation as a required by the county use permit. Habitat Management Plans (HMPs) have been drafted for each of the areas.

McGinness Hills Geothermal (NV)

Information from BLM Final EA and FONSI 2011

Background

In 2011 the BLM and USFS approved the McGinness Hills Geothermal project. Ormat Nevada, Inc. proposed to construct and operate two power generating facilities, a geothermal production and injection well field and pipelines, access roads, communications towers, a 9 mile electrical transmission line through BLM and USFS managed lands, and ancillary support facilities. A net total of 66 MW of electricity will be produced in compliance with the Nevada State mandated Renewable Portfolio Standard. Ormat needs to be able to produce geothermal resources in commercial quantities from the Unit or the federal geothermal leases will terminate.

The components of the proposed Project directly related to the geothermal resource would all be located within the McGinness Hills Geothermal Unit. This Unit is comprised of federal geothermal leases and a lease on private land. The Unit Area encompasses approximately 7,680 acres of public lands managed by the BLM.

Impacts to Sage-grouse

The entire Unit Area occurs in sage-grouse summer and winter range, with a majority of the proposed development activities occurring in core-breeding habitat. Using a 2-mile buffer around project components, four active leks, three leks with unknown status, and 51,800 acres of sage-grouse habitat (22,467 acres core-breeding habitat) may be affected by Project development activities. Actual surface disturbance and direct habitat loss is 217 acres of foraging and nesting habitat, including some Category 1 habitat, and 34 acres of brood-rearing habitat. Three of the four active leks occur less than 1 mile from proposed structures or construction activities. Impacts to sage-grouse include reduction and fragmentation of foraging and nesting habitat, possible disruption of sage-grouse movement corridors between metapopulations, increases in sage-grouse mortality risks and predation to nests from increased occurrence of ravens (corvids), and seasonal displacement of sage-grouse due to effects from Project

noise, construction, and human activities. Effects from habitat fragmentation from this habitat loss would be concentrated around the plants, production and injection pipelines, and wells.

Mitigation

To reduce potential impacts to sage-grouse, a suite of project-specific mitigation measures are required and were developed in coordination with NDOW. A primary component of the mitigation is habitat restoration/enhancement and improvement at a 4: 1 ratio (equating to 868 acres foraging/nesting habitat, 136 acres brood rearing habitat) to compensate for disturbance to sage-grouse habitat in the vicinity of the Project. Likely treatments areas include BLM/USFS lands in the vicinity of the Project area. Preference is given to areas close to the Project but outside of the 2-mile project buffer and in NDOW-designated core-breeding habitat. Treatments may include burn restoration, brush thinning, weed treatment, fencing of riparian and meadow areas, and tree removal.

Several minimization measures will also be used. To address mortality and predation risks, Ormat will use a single-pole design and anti-perching devices along the entirety of the transmission line in accordance with recommended environmental protection measures to minimize corvid occurrence. In addition, corvid occurrence and attraction will be minimized by implementing a Common Raven Monitoring, Mitigation, and Management Plan. To address indirect effects from noise, visual intrusion, and human activity during lekking seasoning noise levels will be kept <49 dBa at active leks during the lekking period (March-15 May, 1 hour before sunrise-10:00 AM), construction activities will not be permitted within 2 miles of active leks during this period, and other disturbances (shift changes, deliveries, venting steam) will also be scheduled outside the lekking period. During March 15-June 30, nest surveys will be conducted. Any active nests will have a 0.5 mile radius buffer placed around it and no surface-disturbing activities will occur until the nest is vacated.

All minimization and mitigation measures are effective for the life of the project unless monitoring deems them inadequate. Monitoring includes sound pressure level (to ensure levels are <49 dBA), annual sage-grouse population (lek), and raven population monitoring. All monitoring will be conducted for a minimum of 10 years, commencing with construction activities. If population monitoring detects either a >50% decrease in the average three-year lek attendance compared to the long-term average or >50% decrease in male lek attendance in two consecutive years, Ormat must take additional mitigation measures related to noise reductions.

Tuscarora Geothermal Facility & Transmission Line (NV)

Information from DOE Final EA, FONSI, and ROD 2011

Background

Ormat Nevada Inc. (Ormat), through its subsidiaries, proposes to construct and operate three geothermal power production facilities (Tuscarora, Jersey Valley, and McGinness Hills) and associated power transmission lines (e.g. Hot Sulpher Springs line) in northern Nevada. The Transmission Line is a 24.5-mile, 120 kilovolt (kV) electric power transmission line with related access road and would be located on private lands and BLM managed lands in sagebrush and grassland dominated high desert. The three geothermal power facilities are expected to produce 122 MW.

The Department of Energy's 2011 EA covers the development of these three facilities and related transmission capacity. Prior EAs for the Jersey Valley and McGinness Hills projects and the transmission line are incorporated by reference. However, the BLM required additional analysis on the transmission line and impacts from the Tuscarora facility had not been assessed, thus this DOE EA includes specific environmental assessment information for these two projects.

Impacts to Sage-grouse

Habitat for the sage-grouse is present throughout the Tuscarora Facility area, and sage-grouse are present near the power plant site. A total of 10 active leks are <3 miles of the power plant and access road and an ~13 additional sites are in the vicinity of the Transmission Line. Three leks are <1 mile of the plant site. The Tuscarora Facility, in combination with the Transmission Line, is expected to indirectly affect approximately 8,091 acres of intact Category 1 sage-grouse habitat. This includes 5,725 acres (approx. 12 miles X 1,200 meter corridor) where the proposed transmission line route does not coincide with existing roads or power lines. An additional 2,366 acres of indirect effects are due to the zone of influence of the Tuscarora Facility site. Over 84 acres will be subject to surface disturbance.

Mitigation

In addition to several minimization measures similar to the McGinness Hills project (e.g. timing restrictions, perch deterrents, 0.5 mile nest buffers), Ormat will voluntarily fund, at a 6:1 ratio at $600 per acre (as supplied in the 2010 Nevada Energy and Infrastructure Standards) terrestrial habitat enhancements and rehabilitation to compensate for 84.5 acres of surface disturbance in sage-grouse habitat in the vicinity of the Tuscarora Facility. A Conservation Trust Fund will be established by Ormat in cooperation with the BLM and be dedicated to the Tuscarora Geothermal Project within 30 days of the signing of the ROW for the associated Transmission Line. The trust fund is to be in an interest bearing account to buffer the devaluation of the 2011 conservation dollars being utilized into the future.

At a 6:1 ratio, this equates to 507 acres of habitat conservation, improvement or protection. The potential or likely treatment areas to be restored include BLM managed lands in vicinity of the project area. Treatment areas will be identified on a case-by-case basis based on field inventory of habitats, conditions, and potential value to sage-grouse based on monitoring results. Implementation of measures would be a requirement of BLM's ROW grant for the facility.

Ormat will monitor lek attendance at certain active and unknown status leks for ten years. The results of that monitoring may trigger specific environmental protection measures, including installation of 8,500 feet of underground transmission line and additional measures for noise reduction. ORMAT will be responsible for a telemetry program to track both male and female sage-grouse for the purpose of determining sage-grouse activities in relation to the power plant and transmission line.

A Wildlife Working Group (WWG) will be made up of representatives from Ormat, BLM, the Service, and NDOW with other pertinent members being invited as needed. This oversight group will evaluate monitoring, confirm thresholds, develop habitat enhancement projects and evaluate any adaptive management that may be necessary in the implementation of the conservation plan.

West Butte Wind (OR) [xxxiii]

Information from BLM Final EIS 2010 and ROD 2011

Background

The West Butte Wind Power Project in Oregon would consist of up to 52 wind turbines, access roads, a substation, an Operations and Maintenance (O&M) facility, collector lines to transmit the generated energy to the substation, and a transmission line to transmit the energy from the project substation to the point of interconnection at an existing Bonneville Power Authority (BPA) transmission line. The type of turbine would be 2.0 to 3.0 MW in size, providing a maximum of 104 MW of generating capacity for the entire project. A majority of the project would be located on private lands. However, a portion of the project access road and transmission line would cross approximately 3.8 miles of public lands administered by the BLM. Because development of the project is dependent upon federal approval of the ROW grant, the West Butte Project qualified as a "connected non-Federal action" for the BLM.

Impacts to Sage-grouse

ODFW's *Mitigation Framework* establishes a methodology for computing habitat disturbance and a mitigation ratio based upon the level of disturbance up to the 40 dbA threshold. Output from the noise propagation model is binned into 5 dbA contours from highest to lowest potentially affecting sage-grouse (40 dbA). Habitat disturbance and mitigation ratios are then calculated for areas falling within contours greater than 50 dbA (at a ratio of 2:1 acres) and 40 to 50 dbA (at a ratio of 1:1).

Approximately 16,335 acres of sagebrush habitat are located within a 3-mile buffer of known leks near or within the Project Area. BLM and ODFW have documented sage-grouse use of the Project Area for many years and habitat includes breeding/nesting, summering (brood rearing), and wintering. Grouse can be found in the Project Area throughout all seasons of the year with 1 lek on the project area. Using a noise propagation model where turbine noise, the access road, powerlines, and road were buffered to measure project effects, it was determined that 9,000 acres of sage-grouse habitat would require mitigation. None of these sage-grouse leks or habitat are within core habitat but "low density" habitat.

Mitigation

Mitigation is planned in the form of 9,000 acres of restoration and enhancement to meet a "no net loss, net benefit" objective (ODFW's Mitigation Policy for low density sage-grouse areas). Mitigation, including habitat restoration and monitoring of impacted leks, would be implemented on BLM land as well as a small amount on private lands via the Crook County mitigation plan. Crook County permitted this non-jurisdictional wind project and put this into the applicant's mitigation requirements.

Ruby Pipeline (NV, OR, UT, WY)[xxxiv]

Information from BLM Final EIS and ROD 2010

Background

In April 2010, FERC issued a Certificate for the Ruby Pipeline Project to Ruby Pipeline, LLC (Ruby) authorizing construction of approximately 672 miles of 42-inch-diameter mainline natural gas pipeline, 2.6 miles of 42-inch-diameter lateral pipeline, and related aboveground facilities (e.g. four new compressor stations and above ground electric lines). The project crosses four states and transports up to 1.5 billion cubic feet per day of natural gas from southwestern Wyoming to customers in Nevada and on the West Coast. The pipeline went into Service in 2011.

The environmental protection measures Ruby incorporated into its 2010 Plan of Development and the additional terms and conditions stipulated in the ROD are designed to minimize resource impacts from the project. Implementation of an environmental monitoring and compliance plan during construction will ensure that all environmental protection measures are completed in accordance with the Final EIS, Plan of Development, ROD, Biological Opinion, and FERC's authorizing Order, which also includes all of the conservation plans: *Letter of Commitment Regarding the Endangered Species Act Conservation Action Plan, the Cooperative Conservation Agreement and an Associated Conservation Plan for Greater Sage-Grouse and Pygmy Rabbit*, the *Voluntary Conservation Plan for Migratory Birds*, and the *Conservation Agreement for Ruby Pipeline Project Limited Operating Period Encroachments in Nevada*.

Impacts to Sage-grouse

Construction of the pipeline was estimated to possibly affect ~8,775 acres of sagebrush steppe habitat. About 143 miles of high-quality sage-grouse habitat is crossed by the project (33.8 in Wyoming, 42.6 in Utah, and 66.5 in Nevada). In addition, 357 miles of moderate- to low-quality habitat is crossed (14.4 in Wyoming, 142.2 in Utah, 174.8 in Nevada, and 25.5 in Oregon).

Mitigation

In addition to the avoidance, minimization, and mitigation requirements to protect sage-grouse noted in the development plan, Ruby committed to providing additional habitat compensation in all four states with the intent of creating a net conservation benefit. Ruby, BLM, and the wildlife management agencies in Nevada, Utah, and Wyoming, with the USFWS supporting the conservation effort, executed a Cooperative Conservation Agreement (Agreement) and an Associated Conservation Plan for Greater Sage-Grouse (Plan). The Agreement is for at least five years following the date that Ruby deposits funds into the specified accounts. The Plan identifies appropriate compensation ratios and acreages to offset the residual impacts associated with pipeline construction and to compensate for the spatial and temporal loss of habitat that will occur as a result of project construction activities.

Funds for the conservation of sagebrush-dependent species (which includes sage-grouse and pygmy rabbit) are managed by either the state wildlife agency or a third-party nongovernmental, nonprofit conservation organization in each state affected by the project. The amounts were developed based on an approximate average land value per acre as determined through a state-specific independent assessment of project impacts and habitat valuations utilizing a Habitat Characterization Matrix approach in Nevada and a Habitat Equivalency Analysis (HEA) for Utah and Wyoming. For Oregon, a ROW buffer (300 feet) was used to calculate impacts.

Based on these processes, Ruby provided funds in the amounts of $8,826,411 for Nevada, $4,863,450 for Oregon, $1,266,377 for Utah, and $909,543 Wyoming. Sage-grouse mitigation or conservation funds provided by Ruby include:

- Nevada - All funds received from Ruby for conservation projects in the State of Nevada in the Cooperative Conservation Agreement are deposited in a NDOW account for joint use by the BLM and NDOW for projects designed to enhance sagebrush habitat crossed by the pipeline, add to the state of knowledge of these species, or provide protection of high-quality habitat by acquisition. This account is interest-bearing and the funds are available for appropriate matching to enhance project capabilities. Use of the funds would be tied directly to offset impacts to sagebrush steppe communities, sage-grouse, pygmy rabbit, and related wildlife issues generated by the Ruby Pipeline Project.
- Oregon – A multi-agency Ruby Pipeline Habitat Mitigation Team governed distribution of just over half of Oregon's mitigation funds. The group approves proposals for mitigation projects that meet the upland, riparian, and aquatic needs for mitigation from impacts of the pipeline. Portions of the funds have been used to restore sagebrush habitats that historically contained sage-grouse. The other portion of the funds was provided to ODFW to acquire and manage land in the high desert region. Current sage-grouse populations were not impacted by the pipeline though restoration efforts in the historic range could benefit future populations.
- Utah – All funds received from Ruby for conservation projects in the state of Utah in the Agreement were deposited in a UDWR account for joint use by the BLM and UDWR for projects designed to enhance sagebrush habitat crossed by the Ruby Pipeline Project, add to the state of knowledge of the two species, or provide protection of high-quality habitat by acquisition. UDWR coordinates cooperatively within the framework of the Utah Watershed Initiative, which includes partnerships with BLM, USFS, Utah School and Institutional Trust Lands Administration, NRCS, and other state and local governmental entities. The Initiative has identified high-priority areas in need of restoration in sage-grouse and pygmy rabbit habitats across the state of Utah. The UDWR Director and Utah BLM West Desert District Manager jointly approve conservation projects to be funded and the disbursement of any funds. The funds may be available for appropriate matching to enhance project capabilities
- Wyoming - All funds received from Ruby for conservation projects in the State of Wyoming in the Agreement are deposited in a Wildlife Heritage Foundation restricted account for use by the Wyoming Landscape Conservation Initiative (WLCI) for projects designed to enhance sagebrush habitat crossed by the Ruby Pipeline Project, add to the state of knowledge of these species, or provide protection of high-quality habitat by acquisition. This account is interest-bearing and funds are available for appropriate matching to enhance project capabilities. WGFD coordinates cooperatively within the framework of the WLCI, which includes partnerships with WGFD, BLM, USFS, USGS, Wyoming Department of Agriculture, USFWS, county conservation districts, and local counties in southwest Wyoming. The WLCI Executive Committee approves conservation projects to be funded through the Agreement and the disbursement of any funds.

Note on Regulatory Certainty: In the Agreement, it states "This Agreement is designed to (1) incorporate by reference avoidance, minimization, and restoration measures that Ruby will implement during the construction of the Project to minimize Project impacts on the sage-grouse and pygmy rabbit, and (2) fund additional conservation measures that will provide conservation benefits to these species." Specifically in regards to listing: "If the USFWS lists either species prior to the termination of this Agreement, the signatories anticipate that the avoidance, minimization, restoration, and conservation

measures and funding referenced and described herein will be included in any biological assessment and related ESA consultation that may be required."

Update – SEIS 2013[xxxv]: As directed by the US Ninth District Court of Appeals (Center for Biological Diversity, et al. v. U.S. Bureau of Land Mgmt., et al., Case No. 10-72356 [consolidated]), the BLM is preparing a SEIS for the Ruby Pipeline Project to provide a cumulative effects section that more thoroughly meets the requirements of the NEPA. In a published opinion, the court remanded and vacated the Biological Opinion to the Service, and remanded and vacated the BLM's ROD because it relied on the Biological Opinion. This decision also remanded the July 12, 2010 ROW Grant. The SEIS specifically includes supplemental information about the original and present condition of the sagebrush steppe habitat and analyzes related cumulative impacts of the Ruby Pipeline Project based on the supplemental information. The SEIS will serve as the foundation for the BLM's decision on whether to amend the BLM ROW. Comments on the SEIS are due August 2013. The draft SEIS contains a list of all present and reasonably foreseeable actions within the four-state cumulative impact area, including energy and mineral projects.

West Tavaputs Plateau Oil & Gas (UT)[xxxvi]

Information from BLM Final EIS and ROD 2010

Background

Bill Barrett Corporation (BBC) and other oil and gas operators are developing the oil and gas resources of the West Tavaputs Plateau (WTP) Project Area in Utah. Surface ownership in the 137,930-acre Project Area is approximately 87 percent federal (managed by BLM), 8 percent State of Utah (managed by State Institutional Trust Lands Administration [SITLA]), and approximately 5 percent private. The EPA, Service, State of Utah, and several counties participated as Cooperating Agencies throughout the EIS process. A Final EIS and ROD were issued in 2010. The Selected Alternative in the ROD is a combination of elements selected from the alternatives in the Final EIS, resulting in a contracted development plan (CDP). The CDP provides for natural gas exploration and development while mitigating impacts on key resources.

In the CDP, the BBC proposes to develop approximately 626 natural gas wells from approximately 120 well pads (63 new well pads and 57 re-occupied well pads) on leased federal lands over a 4 to 7 year period. Anticipated short-term surface disturbance associated with the project is approximately 1,603 acres (includes federal, state, and private lands).

While implementation of the Selected Alternative would have less impact on wildlife in the WTP than any of the action alternatives that were considered within the Final EIS, one of the primary resource concerns taken into consideration was impacts to crucial sage-grouse wintering and brooding habitat.

Impacts to Sage-grouse

Approximately 22,951 acres of sagebrush dominated shrublands occur within the Project Area. The Project Area provides important wintering habitat for sage-grouse, which tend to concentrate within two "core winter use areas." The construction of well pads, roads, pipelines, and other facilities would cause loss and fragmentation of habitat and year-round drilling and completion activities could cause displacement of sage-grouse from winter use areas.

A formal habitat fragmentation analysis on existing development structures (well pads, roads and pipelines) revealed that all sage-grouse core winter areas in the Project Area have been fragmented by existing development.

Mitigation

Annual surface disturbance will be limited to approximately 250 acres, and total unreclaimed surface disturbance at any given time will be limited to approximately 1,250 acres.

Under the Agency Wildlife Mitigation Plan (Mitigation Plan) in the ROD, BBC and other operators will be required to implement wildlife mitigation at a 4:1 ratio based on total long-term surface disturbance (685 acres). Under the plan, 30 percent of this total disturbance will be mitigated during the first 3 years of the development phase. As part of this initial effort, the following measures are to be implemented:

- Habitat improvement and connectivity projects designed to remove encroaching pinyon and juniper (e.g., lop and scatter) and increase the sagebrush park size to benefit sage-grouse. (This will be implemented at a 4:1 ratio as indicated above.)
- Wet meadow/summer range enhancement projects designed to increase this type of habitat for sage-grouse brood survival. Up to six projects will be implemented. Acres enhanced will be counted under the habitat improvement tally at an equal or greater acreage value based on the qualitative benefits of the enhancement.
- The operators will contribute to UDWR for monitoring sage-grouse, whether the continued telemetry study or other, more aggressive means of monitoring, if necessary, including experimental designs.

All remaining mitigation commitments (i.e., the remaining 70%) under the Mitigation Plan will be initiated within one year of completion of drilling operations. Mitigation options include, but are not limited to, the following actions:

- Additional habitat improvement and connectivity projects. A variety of methods could be used, targeting a range of vegetative communities and habitats, including wet meadow/summer range;
- Continued or more aggressive monitoring of sage-grouse, including experimental designs;
- Conversion of grazing allotments in and around Nine Mile Canyon from domestic sheep (this could provide for the reintroduction of bighorn sheep into Nine Mile Canyon);
- The purchase of conservation easements on private lands; and
- Management of private lands for the benefit of wildlife.

The Mitigation Plan establishes a mitigation oversight committee (MOC) to be led by the BLM, in coordination with UDWR, and other agencies/organizations. The MOC evaluates the implementation and effectiveness of mitigation measures, provides direction on effective means of mitigating planned development activities, and develops adaptive strategies and projects. The MOC completes evaluations and makes annual recommendations to the authorized officer for mitigation activities in advance of considerations for winter activities. The MOC will recognize, within the 4:1 parameter, mitigation activities on federal, state, and private lands, including those which build upon or complement past commitments by operators to mitigate activities authorized under previous analyses and associated decisions. However, credit for previous project mitigation is not allowed within the 4:1 parameter.

In addition to requiring the aforementioned mitigation, the BLM in coordination with its Cooperating Agencies has developed special protection measures to address the effects of winter development on wildlife. The BLM will evaluate the effectiveness of these measures annually and adaptively adjust their

application to optimize opportunities to mitigate impacts to wildlife resources within the Project Area. Included in the special protection measures for wildlife is a requirement that BBC and other operators realign existing roads to reduce fragmentation within core sage-grouse winter habitat within 1 year of signing the ROD.

Note on Service Consultation: In a Biological Opinion on the WTP, the Service concurred with BLM that potential impacts to all listed species and their habitats are less under the Selected Alternative than those analyzed in the Agency Preferred Alternative in the Final EIS (also considered the Biological Assessment for this project). All of the measures identified by the Service in the Biological Opinion were included in the ROD as committed mitigation.

In regards to sage-grouse, the Biological Opinion states the following: "Although not included in this biological opinion… it is imperative that federal land management agencies design projects to reduce impacts on sage-grouse populations…we recommend no new surface disturbance associated with this EIS be allowed within sage-grouse brooding and wintering habitats. If development in these habitats is allowed to proceed, we recommend the following conservation measures be implemented:

1. Topography and the latest muffling technology should be used to ensure noise levels do not exceed 45dB within 5 km (3.1 miles) of a lek;
2. No surface disturbing activities should occur within identified crucial wintering habitat between December 1 and March 15 (Figure 3.10-2 within EIS);
3. No permanent structures or facilities should be developed within identified crucial wintering habitat; and
4. Well density should not exceed 1 well pad per square mile within sage-grouse brooding habitat."

Alton Coal Hollow Mine (UT)

Information from Utah DOGM Public Documents 2009-2012

Background

The Alton Coal Development, LLC (ACD), Coal Hollow Mine is located on private land in southwestern Utah and was permitted by Utah Division of Oil, Gas and Mining (DOGM) in 2010. The Coal Hollow Mine is a surface coal mining operation. The coal sizing portion of the plant is similar to a sand and gravel operation, with crushing/sizing and stockpiling of material. The coal mining will occur in sequential pits, with backfilling and reclamation following coal removal from each pit.

Alton Coal is proposing to expand the mine onto leased federal land. In 2011 a draft EIS was developed and is under review by the BLM (see "Proposed Projects" section below).

Impacts to Sage-grouse

The Alton sage-grouse population is small (estimated at 30–40 birds) and exclusively uses the Alton–Sink Valley lek and nesting, brood-rearing, and wintering habitats in the Alton–Sink Valley area. Because of its small size, the population is highly susceptible to extirpation. The Alton–Sink Valley lek is the southernmost active sage-grouse lek in North America. A substantially larger lek (Hoyts Ranch lek, with approximately 120 birds) is located approximately 6 miles north of the project area. Sage-grouse are known to move between the two leks. Fragmentation, alteration, degradation, and loss of habitat would

likely occur as a result of mining activity and associated noise and human presence. Mining operations could result in the long-term loss of local sage-grouse habitat and displacement of the lek.

Mitigation

Satisfactory compliance with the Alton Sage-Grouse Habitat Protection plan is required and memorialized in the Mining and Reclamation Plan. DOGM reviews progress reports for compliance with the compensatory mitigation requirements. The plan includes several minimization measures (e.g. predator control plan, removal of trees during mining operations, minimizing disturbance during breeding seasons, using decoys to encourage breeding behavior) and a reclamation plan for after mining is complete. A 72 acre conservation area, northeast of the lek and consisting of intact sagebrush habitat used for roosting during mating season, was set aside and is being enhanced to create a harbor for breeding, nesting, and brood rearing habitat. Connectivity between the Alton and Hoyts Ranch leks could greatly increase chances of survival for the Alton birds, thus ACD has committed to enhancing a 1700 acre corridor between the leks to encourage migration. Restoration includes removing juniper and scrub oak trees from private land. ACD is also funding research for how the lek responds as the mine is developed and paying every year the mine is open ($10,000 per year) for impacts. As of 2012, ACD has been credited for 500 acres of mitigation and preliminary field monitoring data from radio-collared birds suggest that the corridor is beginning to be utilized.

Spring Valley Wind[xxxvii] (NV)

Information from BLM Final EA and ROD 2010

Background

Spring Valley Wind, LLC's Wind Project is a 150-megawatt wind generation farm proposed to be constructed on 8,565 acres of public lands in north Spring Valley in Nevada. The project would consist of 75 wind turbines, an electrical substation, and utilize an existing 230 kV transmission line for distribution and would disturb 448 acres (short and long term). The project was analyzed in a BLM EA which is tiered to the 2005 Programmatic EIS on Wind Energy Development.

Impacts to Sage-grouse

The lek system in Spring Valley consists of 38 leks with a combined breeding count estimate of 256 birds, most situated north of the project area. The 8,565 acre project area contains 3,643 acres of sagebrush and is likely summer and winter habitat. No leks, active or inactive, occur in the project area itself however three leks occur within one mile of the project area boundary and two leks are within five miles of the project boundary. Construction activities would result in the disturbance of 139.7 acres of sage-grouse habitat. Sage-grouse may avoid foraging, breeding behavior, or vacate sites entirely throughout the entire 8,565-acre project area and adjacent habitats during the 9- to 12-month construction phase. Some grouse may permanently abandon the disturbed areas and adjacent habitats. A 2 mile buffer was used to determine potential avoidance area, resulting in 38,289 acres of potential disturbed area.

Mitigation

In addition to minimization measures, such as restricting activities within 2 miles of active leks from March 1-May15 and within winter range from November 1 – March 31, Spring Valley Wind has

volunteered to donate $500,000 to enhance sagebrush habitat that supports species such as sage-grouse. Funds are to be deposited into NDOW's Non-Executive Account and marked specifically for purposes of sagebrush restoration efforts, which could include permitting, equipment and seed purchase, labor, and other necessities for restoration. An effort must first be made to apply the funds to sagebrush restoration within Spring Valley and then outside of the valley if necessary. Donations into this account are eligible for matching federal funding. All decisions of how to utilize the money will require both NDOW and the BLM approval.

Wild Horse Wind (WA)

Information from Washington EFSEC Final Supplemental EIS 2009

Background

The Wild Horse Wind Project site encompasses about 9,560 acres of private open range land in central Washington and includes wind turbines, access roadways, transmission feeder lines, maintenance facilities, and a solar demonstration facility. The project interconnects to the Puget Sound Energy transmission system. The project was approved in 2005 and construction was complete in December 2006. In November 2009 Puget Sound Energy completed an expansion of 22 wind turbines and associated roads on 960 acres. The site has a gross nominal generation capacity not to exceed 312 MW.

The additional electricity generated would help meet growing regional demand for renewable energy. The expansion is also needed to help PSE meet its own goal of supplying 10 percent of its customers' total electricity needs with renewable resources by 2013. This goal exceeds the target established by Washington's renewable portfolio standard, which requires a qualifying utility to generate 3 percent of their total electricity from renewable sources other than hydroelectric facilities by 2012, escalating to 15 percent by 2020.

Impacts to Sage-grouse

Information from the State EIS in 2005 indicates that construction of the Wild Horse project could temporarily disturb up to 401 acres of existing vegetation with 165 acres permanently displaced by project facilities. The site is part of a large and contiguous patch of shrub-steppe habitat, a habitat type that is considered a priority habitat by the WDFW. Approximately 53% of the site consists of shrub-steppe. The project is located within the Colockum Management Unit in the Washington Recovery Plan for sage-grouse although there are no documented active leks within 5 miles of the project area. The site was used historically. This management unit is most important for potential connectivity between the two breeding populations in the state. Approximately 100 acres of shrub-steppe habitat will be permanently impacted by the footprint of the project out of more than 8,600 acres of shrub-steppe habitat within the project area. The 8,600 acres is approximately 7% of the 128,000 acre Colockum Management Unit. The loss of 100 acres of this unit represents a loss of less than 0.08%.

GSG surveys around the whisky ridge project expansion area reported in 2007 and 2008 appendix to the 2008 expansion reported no sage-grouse occupying site. The Whiskey Ridge Project is adjacent to the existing Wild Horse Wind Power Project.

The 2009 entire project area resides in the Greater Sage-Grouse Recovery Area. This expansion area remains important migration corridor between two remnant populations of sage-grouse at approximately 30 miles apart. The construction of the entire project is greater than the extent of the project footprint (permanent impacts) due to disturbance and habitat fragmentation related impacts. The construction degrades nesting/brooding/wintering/migration habitat for sage-grouse and other species requiring large blocks of shrub-steppe habitat through habitat fragmentation in significant adverse environmental effects. The additional disturbed area resulting from the expansion will be approximately 29 acres of permanent and 59 acres of temporary disturbance.

Mitigation

According to the 2005 EIS, an approximately 600 acre on-site Mitigation Parcel was designated for mitigation of all permanent and temporary impacts to habitat caused by construction and operation of the original Project. The parcel exceeds those requirements of the Wind Guidelines for impacts to shrub steppe habitat. Specific to mitigation potential impacts to sage-grouse "The Certificate Holder shall consider the historic presence of sage-grouse at the Project site in the location of rock sources and the location/operation of the concrete batch plant." Also timing restrictions and a post construction management plan were required.

The 2009 draft SEIS proposes either replacing (protecting from development) additional shrub steppe habitat or payment of an annual alternative mitigation fee in accordance with the 2003 WDFW Wind Power Guidelines. An 80 acre parcel is proposed if the replacement habitat option is selected. As detailed in the final SEIS the proposed Facility will have minimal impact on native habitat. The Certificate Holder will implement the same mitigation measures identified in the SCA (Site Cert agreement) for construction and operation of these expansion facilities, along with additional mitigation measure as developed through the SEPA process. The Certificate Holder will also provide a Post- Construction Restoration Plan that will include provisions for restoration relative to the expansion. PSE believes that the increase of permanent and temporary impact acreage caused by this amendment (which would require approximately another 80- 90 acres) has been fully mitigated by the size of the original mitigation parcel, approved for the Wild Horse Project and in accordance with the Washington State Department of Fish & Wildlife Wind Power Guidelines. However, PSE is in discussions with WDFW, and anticipates that additional acreage will likely be proposed as further mitigation. The 2009 final amendment indicates the 600 mitigation parcel is used.

Gateway West Transmission[xxxviii] (ID, WY)

Information from BLM Final EIS 2013

Background

Idaho Power Company and Rocky Mountain Power (the Companies) jointly submitted an application to BLM for a ROW grant and special use permit for the construction and operation of a 230/500 kV transmission system. The transmission line would be approximately 1,000 miles long and go through southern Idaho and southern Wyoming crossing 500 miles of public land. The line would deliver of up to 1,500 MW of additional energy for the Companies larger service areas, principally in Utah and Idaho, and to other interconnected systems. The project includes three proposed substations, an expansion at one planned substation, and expansions at eight existing substations. Other associated facilities include communication systems, optical fiber regeneration stations, and substation distribution supply lines.

The Final EIS, which includes an appendix on impacts analysis for sage-grouse, was released to the public for comment and closed June 28, 2013.

Impacts to Sage-grouse

Based on preliminary analysis, suitable sage-grouse habitat occurs along all segments of the proposed route with direct crossing of the line through key/core areas in both states, the amount of which depends on the alternative selected. The proposed route would pass within 0.6 miles of several leks and 0.25 miles of some leks. Site specific evaluation of disturbance density within key habitats/core areas would be conducted "once the alternative analysis is completed and a preferred alternative has been selected."

Mitigation

Compensatory mitigation will be applied to so that there is no net loss as a result of project construction and operation. The majority of conservation will focus on conservation of habitat, specifically on projects that enhance or maintain quality of habitat and reduce fragmentation. The majority of the mitigation package will consist of habitat conservation easements, sagebrush restoration and enhancement (which includes juniper removal), and fence marking or removal.

The Companies' mitigation goals include:

- identify mitigation opportunities that reduce or remove threats under the five listing factors used by the Service to assess the status of ESA-listed and candidate species,
- compliance with Wyoming Executive Order 2011-5 and other state regulatory mechanisms, and
- address primary and secondary threats identified in Idaho Executive Order 2012-02 and recommendations of the State of Idaho and the Idaho Task Force that may ultimately be adopted through regulatory mechanisms.

The Companies have been working with agency personnel to satisfy the requirements of the Framework for Sage-grouse Impacts Analysis for Interstate Transmission Lines (November 22, 2010, last revised October 22, 2011). The Framework specifies the use of a HEA, an economics model, to scale mitigation

for the loss of habitat services. Habitat services include those ecosystem features (i.e., physical site-specific characteristics of an ecosystem) and ecosystem functions (i.e., biophysical processes that occur within an ecosystem) that support, in this case, sage-grouse populations. The HEA quantified the permanent and interim loss of habitat services resulting from ground-disturbing activities, construction related traffic and noise, and the footprint of the physical structures as defined by a habitat services metric. The HEA produced an estimate of the permanent and interim loss of sage-grouse habitat services as a result of vegetation loss, noise, and human presence anticipated with project construction and operation.

Once BLM has identified a preferred alternative, the HEA can be used to identify the sum total of modeled habitat services lost. The HEA also modeled feasible mitigation project types and incorporated their typical costs. The Companies will use the HEA-generated sum of modeled habitat services lost and develop a proposed set of mitigation projects, whose total habitat services gained can also be summed. The Companies can then use the estimated mitigation project cost for each project type to develop an estimated total cost for the entire Project's compensatory mitigation obligations. The suggested project mix and sum of habitat services provided by the mitigation project types will offset the sum of modeled habitat services lost, as specified in the HEA. An Oversight Committee consisting of agency biologists and other state and federal advisors, will be created to provide guidance to the in-lieu fee administering entity on the utilization of mitigation funds provided by the Companies.

The Service's Wyoming Office provided the Companies with recommendations regarding the development and implementation of a mitigation plan. Within these recommendations, the Service emphasizes the need to consider each mitigation site individually and provide a clear justification regarding the value of the treatment at that site. The Companies will establish mechanisms for receiving, reviewing and selecting proposals for projects through coordinated efforts between the Oversight Committee (that has been assembled for each state or regional area) and in-lieu fee administrator. Each proposed project will meet the intent of the mitigation, which is to protect, enhance, or maintain habitat quality for sage-grouse in order to receive funding. No projects will be funded that do not meet one of those goals.

Compensatory mitigation projects will be sited in the same state where the impact will occur and will be located using the following priorities:

1. Projects will be located in polygons of Key Habitats/Core Areas (i.e., Preliminary Priority Habitats - PPH) that are intersected by the Project. Projects may be located in polygons of PPH that are not intersected by the Project but are within the region (e.g., Western Association of Fish and Wildlife Agencies' management zones) where the Oversight Committee agrees.
2. Projects may be located in areas outside of Key Habitat/Core (i.e., Preliminary Priority Habitats) where the Oversight Committee agrees that habitat connectivity may be restored.

Three factors influence the timing of financing and execution of mitigation projects.

1. The best available estimates of disturbance of known habitat can only be made after the BLM establishes the preferred alternative for the Project and the Companies complete the design engineering for each segment based on that preferred alternative.
2. The Companies can only finance mitigation for a permitted project—that is, the mitigation investment can only be made after a permit is issued. While the Companies are willing to commit to making an appropriate investment if the permit is issued, mitigation funding would occur only after permits are in hand.
3. The Companies cannot know in advance what projects will be available in the timeframe between the issuance of permits and the desired start of construction. Flexibility is therefore required in the identification and financing of mitigation projects.

The HEA used the same habitat services metric to quantify the habitat services to be gained by implementing different types of habitat improvement measures (measured in service-acre-years). The habitat improvement measures include the following:

- fence marking or removal;
- sagebrush restoration and enhancement;
- juniper removal;
- seeding of a forb and bunchgrass understory; and
- purchase of conservation easements.

Each project that is selected for mitigation will require a monitoring and mitigation entity. This role could be filled by agencies, private landowners, NGOs, managers of conservation easements, environmental or reclamation contractors, the entity applying for funding, or other appropriate monitoring entities. The final monitoring and maintenance approach for each mitigation project will be formalized in a monitoring and maintenance strategy that will be reviewed annually, or as necessary, by the Oversight Committee. Monitoring duration will vary for each mitigation project type. Results of monitoring will be provided to the Oversight Committee. The monitoring and maintenance strategy will also include success criteria for each project and project type. Examples of success criteria might include:

- Increase in desired vegetation characteristics in a treated or enhanced area when compared to a suitable control area (trending towards desirable vegetation structure and composition with measurable goals)
- Adherence to conservation easement contract terms
- Removal of stated acreage of encroaching juniper stands, and
- Miles of fence marked

NOTE on Consultation with the Service: As stated in the Draft EIS, "Another process, called conferencing, may be conducted for species proposed for or candidates for listing under the ESA, where the lead federal agency feels that the proposed action is likely to jeopardize the species. Since the BLM does not generally consider applications for proposals that would likely jeopardize a species, as a general rule the BLM does not engage in formal conferencing for proposed or candidate species. However, the Proponents have requested that the BLM confer with the USFWS on the sage-grouse…" Further, and referring to the Service as a cooperating agency in development of the Framework, the Draft EIS states, "With the USFWS as a Cooperating Agency, informal consultation requirements of the Endangered Species Act would be met." More recently, the BLM has made a decision not to conference on projects with regard to sage-grouse and this language was not included in the Final EIS.

Keystone XL Pipeline (MT, SD)[xxxix]

Information from Department of State Final EIS 2011 and Draft Supplemental EIS 2013

Background

In 2008, TransCanada Keystone Pipeline, LP (TransCanada) filed an application for a Presidential Permit with the Department of State to build and operate the Keystone XL Project. The proposed Keystone XL Project consists of a 875-mile crude oil pipeline and related facilities that would primarily be used to transport crude oil from an oil supply hub in Alberta, Canada, and the Bakken Shale Formation in the

U.S. to delivery points in Nebraska for onward delivery to Oklahoma and refineries it the Gulf Coast area. The proposed project could transport up to 830,000 barrels per day and is estimated to cost $7 billion.

A Final EIS was released in August 2011. Additional NEPA documents have been produced for this project but were subsequently put on hold, and a Supplementary EIS process initiated relative to proposed route and other modifications. The Draft Supplemental SEIS was released for public review in March 2013.

Impacts to Sage-grouse

The proposed pipeline would cross through a sage-grouse management zone in Montana and western South Dakota, which supports an estimated 62,320 sage-grouse in Montana. In 2013, less than 200 male sage-grouse were counted in South Dakota.

Approximately 190 miles of the proposed route extend through areas with sage-grouse habitat in Montana. Of this distance, 94 miles are classified as moderate to high-quality habitat and 96 miles are classified as marginal habitat for sage-grouse. Based on a 3-mile buffer centered on each confirmed active lek, each unconfirmed active lek with recent sage-grouse observations, or each priority lek the proposed Project route would impact, there would be a total of about 86 miles of the proposed Project route overlapping a sage-grouse lek buffer (including 29 separate sage-grouse lek locations) in Montana and South Dakota. The proposed route would pass through approximately 20 miles of core sage-grouse habitat in Montana. One 2.75-mile-long permanent access road and one pump station would also occur within core sage-grouse habitat in Montana. A total of 35 recently active sage-grouse lek locations were identified within 3 miles of the proposed Project facilities. In South Dakota, about 40 historic lek locations were identified within 4 miles of the proposed Project. Most of these lek locations are more than 20 years old and likely no longer active, although 3 lek sites within 3 miles of the proposed Project have been recently active.

Three new permanent access roads in Montana and one new permanent access road in South Dakota would be constructed. One new access road in Montana is within 4 miles of a confirmed active sage-grouse lek. The new access road in South Dakota is within 4 miles of a lek located in Montana where sage-grouse were observed in 2012.

Three of the six proposed pump stations in Montana would be constructed within 4 miles of confirmed active leks. One new pump station in South Dakota would be constructed within 4 miles of an active lek in Montana, and a second pump station in South Dakota would be constructed within less than 2 miles of a priority lek. Noise from the pump stations would attenuate to background levels within 0.5 miles from the proposed pump stations and would not be expected to cause disturbance to sage-grouse leks because no recently active leks were identified within 0.5 mile of proposed pump stations in Montana or South Dakota. Communication towers associated with the proposed pump stations could lead to increased collision hazard and increased predation by raptors by providing vantage perches.

In addition to the pipeline itself, the construction of electrical distribution lines to pump stations in Montana and South Dakota would incrementally increase habitat alteration, and collision and predation hazards for foraging and nesting sage-grouse in the proposed Project area. Construction of these distribution lines during the breeding season could also potentially disturb breeding, nesting, and brood-rearing birds. Keystone would not construct or operate these electrical distribution lines, but would inform electrical power providers of the candidate status of the sage-grouse and would encourage consultations with Montana and South Dakota regulatory agencies for the electrical infrastructure components

constructed for the proposed Project to prevent impacts to sage-grouse. Coordination with these power providers is currently ongoing.

Mitigation

Several agencies identified mitigation measures to reduce the potential impact of the proposed project on sage-grouse and their sagebrush habitats. Proposed compensatory mitigation measures include:

- Develop a conservation plan with MFWP, SDGFP, USFWS, and BLM to address impacts to sage-grouse, including any mitigation measures that would be necessary to maintain the integrity of core areas or PPH/PPA.
- Establish compensatory mitigation funds for use by the states and BLM to enhance and preserve sagebrush communities for sage-grouse and other sagebrush-obligate species.
- Fund research in each state to evaluate effects of the facilities on sage-grouse.

China Mountain Wind (ID, NV)[xl]

Information from BLM Draft EIS 2011

Note: This project may no longer be proposed.

Background and Status

China Mountain Wind, LLC (CMW) and NV Energy submitted an application in 2010 for a ROW grant to the BLM for the development of up to a 425 MW wind energy facility. The proposal consists of up to 170 wind turbines, 83 miles of all-weather gravel roads, 19 miles of overhead electric transmission line, up to 3 permanent meteorological towers, 3 electric substations, and 2 operation and maintenance facilities. The proposed project would be sited on public lands administered by the BLM (65%) and the Idaho Department of Lands (7%), and on private ownership (28%) in Idaho and Nevada. The project area consists of a 30,700-acre ROW preference area and a 250-foot buffer around linear features such as the transmission interconnect line and roads.

The BLM completed and released a Draft EIS analyzing the project on April 8, 2011. The Idaho BLM office announced March 8, 2012, that it will defer a final decision and suspend work on the Final EIS until completion of the Idaho/Montana sub-regional sage-grouse EIS/Resource Management Plan amendments and Jarbidge Resource Management Plan revision.

Impacts to Sage-grouse

The proposed project area contains approximately 22,500 acres of key sage-grouse habitat and approximately 8,150 acres of R1 habitat. Key habitat is defined as areas of generally intact sagebrush that provides habitat during at least some portion of the year. R1 habitats are classified as areas with “high restoration potential” in areas with limited amounts of sagebrush. Sage-grouse use of the project area varies by season; however, sage-grouse use within the project area is known to occur during all seasons of the year.

Comments on the Draft EIS by the Service and both Nevada and Idaho state game management agencies, as well as the Shoshone Basin Sage-grouse Local Working Group, have stated that the project (as

proposed in April 2010) could have more than minor adverse effects to sage-grouse due to the importance of the involved habitat, potential habitat fragmentation issues, population impacts, and the unfeasibility of mitigation for these effects on remaining populations.

Mitigation

A draft conservation plan (Plan) for sage-grouse is included as an appendix to the Draft EIS and discusses impacts from the project, avoidance and minimization measures employed, and mitigation to address estimated unavoidable impacts. It is unknown if this Plan will be included in the Final EIS. In the draft Plan, CMW commits to a conservation fund over the life of the project ROW grant (30 years), which will be spent according to the timeline agreed upon in a Mitigation and Monitoring Plan. This fund will provide for sage-grouse research and monitoring, costs associated with fee title acquisition of mitigation parcels or establishment of conservation easements, implementation of mitigation actions, and the establishment of a contingency mitigation fund. The financial commitment of CMW's mitigation fund would end upon decommissioning of the project, however, after the set amount of mitigation funding is expended, the mitigation program would cease.

The Plan outlines the process for determining the impact losses associated with the project and a method for mitigating those losses (through both onsite restoration and offsite mitigation via an accounting method that calculates acreage and habitat quality). Implementation would include site-specific monitoring plans with performance standards and contingency plans. Real estate and financial protections are mentioned in regards to offsite mitigation. Examples and cost estimates are included.

NOTE on Climate Change: The draft Plan mentions that one non-specific positive, indirect, long-term impact of the project is the reduction of greenhouse gas (GHG) emissions by replacement of electric generation sources. Specifically, the Plan states that "GHG emissions are a key contributor to climate change. Climate change is a known threat to the greater sage-grouse … The GHG emissions reduction benefits from the Project are considerable, and are a key component of NV Energy's plans to reduce output from fossil fuel-based electricity generation. The average reduction benefit over 26 years from 2014 through 2040 will be 816,601,343 pounds of CO2 per year…equivalent to approximately 14 percent of the annual emissions of a coal fired power plant or the annual emissions of approximately 101,980 passenger vehicles."

Alton Coal Mine[xli] (UT)

Information from BLM Draft EIS 2011

Background

The BLM released a Draft EIS (November 2011) for a proposed expansion of the Alton Coal Lease by Application (LBA) tract. The Proposed Action includes approximately 3,576 acres, of which approximately 2,280 acres are federal surface and mineral estate and 1,296 acres are split estate; private surface estate and federal mineral estate. A No Action Alternative and Alternative C, where the nature of impacts would be the same as under the Proposed Action, but would differ in the acres of disturbance and timing of mine-related activities, are also proposed.

Recoverable portions of in-place coal reserves would be mined over approximately 25 years. About 2 million tons of coal per year would be mined once topsoil stockpiling and initial overburden removal has occurred. Reclamation would be concurrent with mining over the course of the mine life and would be followed by a potential 10- year reclamation and revegetation monitoring period. The proposed Alton Coal Tract would include centralized and dispersed facilities and the relocation of a transportation route.

Impacts to Sage-grouse

The Alton sage-grouse population is small (estimated at 30–40 birds), and exclusively uses the Alton–Sink Valley lek and nesting, brood-rearing and wintering habitats in the Alton–Sink Valley area. The Alton–Sink Valley lek is the southernmost active sage-grouse lek in North America. Specific threats to the Alton sage-grouse population include habitat loss, West Nile virus, increased predation, severe drought, or a combination of these events. There are three inactive leks approximately 15 miles south of Alton. However, the closest active lek, with approximately 120 sage-grouse, is about 6 miles north of Alton. Sage-grouse move between the two leks, but there is no other known source of genetic exchange with the Alton sage-grouse population.

This lek is adjacent to the Alton Coal Tract and nesting/brood rearing and winter habitat exists on portions of the tract. The development of the Alton Coal Tract combined with mining operations on adjacent private lands (*see* Alton Coal Hollow project above) could result in the long-term loss of local sage-grouse habitat and displacement of the lek. Development of the coal mine would eliminate brood-rearing and wintering habitat and habitat resources adjacent to the lek during the life of the mine and during subsequent restoration and recovery period. Fragmentation, alteration, degradation, and loss of habitat would likely occur as a result of mining activity and associated noise and human presence.

Implementation of the Proposed Action would result in the disturbance of 1,290-1,402 acres of crucial sage-grouse brooding habitat. Under Alternative C, approximately 1,056–1,169 acres of crucial brooding habitat would be impacted through direct surface disturbance.

Along the coal haul transportation route occupied sage-grouse habitats occur adjacent to 44.5 miles of the route, consisting of brooding habitat adjacent to 43.8 miles and wintering habitat adjacent to 0.7 miles. Sage-grouse that occur along the coal haul transportation route are most likely distinct from the population that occurs in the tract due to the isolated distribution of that population. Adverse impacts to sage-grouse that occur along the transportation route are expected to be minimal; however, they could occur from an increase in collisions with truck and commuter traffic, increased noise, and increased predator activity along roadways. Greater traffic volume would increase the risk of mortality of adult sage-grouse, fledglings, and nestlings from vehicles. Noise and vibration near active leks during the breeding season could disrupt courtship behavior or prevent hens from locating lekking areas.

Mitigation

Note: The 2013 Utah state conservation plan for sage-grouse makes specific note that this project, having independently considered the effects of the project on sage-grouse, may continue pending evaluation without recourse to the provisions of the plan.

Potential mitigation measures for sage-grouse common to each action alternative include the following:

- Install fencing and/or netting or other protective features around evaporation and production pits to reduce mortality of wildlife and special status species (e.g., Greater Sage-grouse, migratory birds, raptors, bats) due to drowning or entrapment.

- Monitor and treat water storage impoundments to prevent mosquito breeding and the associated spread of West Nile Virus to the Sage-grouse population.
- Monitor the Alton sage-grouse population throughout the year to assess bird survival, nest site and nest success, brood-rearing sites, and key winter habitat areas.

Timing restrictions would be in place to reduce impacts to the Alton sage-grouse population in Alternative C. Under this alternative, no surface-disturbing activities would be allowed within 0.5 mile of the lek during the lekking period (February 15–March 15) or during the nesting and brooding period (March 15–July 15).

Short-term, medium-term, and long-term habitat reclamation measures would be required to enhance nesting and brooding habitats. Offsite mitigation and conservation activities are stated to be neither enforceable nor required by BLM, but could include habitat enhancement and the development of migration corridors between habitat areas and creating or enhancing habitat on public lands in the tract in the no-coal zone. Conservation measures to increase habitat connectivity between the two leks have been planned. These would be implemented prior to any mining activity in the tract. Restoration actions would include seeding sagebrush and planting seedlings to accelerate the successional development of suitable sage-grouse habitat.

NOTE on BLM RMP: To analyze and disclose the effects of coal mining on wildlife associated with the Proposed Action and Alternatives, it is assumed in the Draft EIS that 1) mining would occur and that there would be an exemption, waiver, or modification of surface stipulations for sage-grouse, and that 2) surface disturbance would be allowed within a 0.5-mile radius of a lek and within a 2.0-mile radius of a lek in brood-rearing habitat from March 15 to July 15. Without an exemption, waiver, or modification to surface stipulations, mining would not be permitted on most of the tract. This assumption is due to the 2008 RMP for BLM's Kanab Field Office (KFO) which includes the following decisions with regard to Sage-grouse habitat management:

- SSS-54: All surface-disturbing activities would be prohibited within 0.5 mile of Sage-grouse leks on a year-round basis. Oil and gas leasing would be open subject to major constraints (no surface occupancy).
- SSS-55: Allow no surface disturbing or otherwise disruptive activities within 2.0 miles of Sage-grouse leks from March 15 to July 15 to protect nesting and brood rearing habitat. Oil and gas leasing would be open subject to controlled surface use and timing stipulation.
- SSS-56: Allow no surface disturbing or otherwise disruptive activities within Sage-grouse winter habitat from December 1 to March 14. Oil and gas leasing would be open subject to controlled surface use and timing stipulations.
- SSS-57: Exceptions, modifications, or waivers to decisions SSS-54, SSS-55, and SSS-56 may be granted on a case-by-case basis.

END NOTES (ON-LINE REFERENCES)

[i] http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/FR03052010.pdf
[ii] http://www.fws.gov/endangered/improving_ESA/listing_workplan.html
[iii] http://www.blm.gov/wo/st/en/prog/more/sage_grouse_home2.html
[iv] http://www.ndow.org/uploadedFiles/ndoworg/Content/public_documents/Nevada_Wildlife/Bi-State%20Action%20Plan.pdf
[v] http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/Pages/GreaterSagegrouseConservationPlan.aspx
[vi] http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/Pages/GreaterSageGrouseConsPlan2.aspx
[vii] http://fishandgame.idaho.gov/public/wildlife/sageGrouse/
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[xli] http://www.blm.gov/ut/st/en/prog/energy/coal/alton_coal_project.html

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