
MITIGATION AND GREATER SAGE-GROUSE

A White Paper Summarizing Mitigation Efforts (as of April 2012)

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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. A litigation settlement requires that a listing decision be made by September 2015.

There is great interest and a variety of efforts underway to preclude the need to list the species. Sagebrush habitat often intersects with lands ideal for rangeland agriculture and, more recently, energy development. With increasing pressure to develop both renewable and non-renewable energy sources in the western states, impacts to sage-grouse habitat will continue to occur. Mitigating for impacts in a way that demonstrates measureable net 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” could provide effective conservation and incentivize voluntary offset actions.

This white paper summarizes known mitigation efforts to date for sage-grouse. It focuses primarily on energy 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 energy and other development. Secondly, this report is intended to inform efforts looking at mitigation (conservation) banking or other 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 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 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; providing broad authority to regulate and protect wildlife on all lands within their borders; and providing 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 their authorities to site and environmentally review development projects and employ mitigation 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. 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 one 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 responding with strategies that fit within their current legal parameters. These strategies are one way to both incentivize and define frameworks for pre-listing mitigation. They vary in scope and regulatory strength, from utilizing existing laws to issuing executive orders. This document is intended as a means 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 early 2012. The focus of the inquiry was on mitigation plans and actions for Greater sage-grouse, specifically, compensatory mitigation.

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 mitigation for the species. Permitted and proposed projects are noted in each state summary and are summarized in a table in Appendix B and 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 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 (i.e. producing a net conservation benefit).

Over half of the states have either completed or are working through mitigation measures for sage-grouse on projects. While all 11 states within the range of the sage-grouse have a species-specific conservation plan and nearly all of those plans mention mitigation, none of the plans themselves contain a mitigation framework. Two of the states (CA, WA) have general mitigation strategies through their state regulations that cover sage-grouse through species or habitat protections. Two other states (NV, OR) have created a separate mitigation framework for sage-grouse and four (ID, MT, UT, WY) are drafting a framework. Most of these documents are specific to energy development, rather than a general mitigation strategy for any potential impacts to the species.

II. Siting Process

The *siting process* (review and permitting) for energy or other development projects is important to consider as it may or may not trigger environmental review.

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 (ID) have some form of a state 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). For most states, small projects do not have to go through a state permit but then may be subject to a county permit. Two states (ND, UT) do not have county siting permits. In many states, permitting varies by county.

Wind development is a relatively new issue and in many states there is no specific siting process. 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 for a state permit is projects over 150 kW while in Oregon the threshold is a thousand times higher at 105 megawatts (MW). Currently, four states (CO, OR, ND, SD) have specific wind siting authorities.

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. These comments provide the means whereby impacts can be avoided, minimized, 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 (CA, MT, SD, WA) have a state environmental policy law (similar to NEPA) that requires some form of environmental assessment for 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. The 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 latter two categories are the primary way that wind development would require an environmental assessment. The degree to which this review results in mitigation recommendations being implemented varies. In South Dakota, for example, it is made clear that recommendations by the wildlife agency are not mandatory and the state cannot require mitigation.

For five states (CO, MT, OR, UT, WA), the state siting process itself triggers an environmental review (though in Montana this only applies to transmission projects). In three states (MT, OR, WA), 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 (ID, ND), 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 land 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 the wildlife agency. In Idaho, mitigation cannot be required. 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 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 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 there were no projects impacting sage-grouse, they were not aware of any projects, or they were aware but deferred to the state for review for sage-grouse.

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

This Section Under Construction

ROLE OF PRE-LISTING MITIGATION TOOLS AND PILOT PROJECTS

This Section Under Construction

STATE SUMMARIES

California

Mitigation plan

The California Department of Fish and Game (CDFG) 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 2004 state conservation planⁱ 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 CDFG. In addition to CDFG's responsible and trustee roles in the CEQA process, direct consultation with CDFG 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. CDFG cannot approve or disapprove a project. Protection of listed species through CEQA is dependent upon the discretion of the agency involved.

Projects

Northern Population:

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 as sites 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. These sites are within important sage-grouse seasonal use areas and will provide significant opportunities for enhancing sagebrush habitats.

Bi-State Population (Mono County): Development threats to this population are low. Only one project with impacts to sage-grouse has been permitted through BLM (Cougar Gold Paramount Exploration) and they were able to mitigate until there was no adverse effects to sage-grouse by timing restrictions, BMPs, etc. For discretionary projects involving BLM lands, if there are adverse impacts to sage-grouse, the district land use plan indicates that the project will unlikely to go forward. The county...

Coloradoⁱⁱ

Mitigation Plan

Colorado Parks and Wildlife (CPW) considers sage-grouse a state Species of Concern. The goal of the 2008 state conservation planⁱⁱⁱ is 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 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 require mitigation for impacts to wildlife.

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 the 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 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 mitigation for sage-grouse on energy development projects, namely oil and gas, for at least a decade. 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 (e.g. from Encana, Exxon Mobile, PDC, Questar Gas, and Williams-WPX), programmatic assessments are conducted (using spatial modeling to assess impacts) and mitigation plans are in place. 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 sage-grouse 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, 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 two multi-state transmission projects (Energy Gateway South and TransWest Express) in the early review process that may impact sage-grouse habitat. 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^{iv}

Mitigation Plan

The Idaho Department of Fish and Game (IDFG) considers sage-grouse a state Species of Concern. Population objectives identified in the 2006 state conservation plan^v 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). 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. A more detailed “Mitigation Framework” would be developed based on the principles and procedures outlined in the report, should the Subcommittee’s recommendations move forward.

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 are requesting 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

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). China Mountain is a local wind development project. BLM is deferring a final decision and suspending work on the Final EIS until completion of two resource management plans due to widespread concern of the scope of impacts to sage-grouse and other species.

Montana^{vi}

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, though one is in development as part of an energy policy and expected to be released in 2012.

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 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 through MDEQ). FWP does work to encourage the voluntary use of fish and wildlife information through utilization of the FWP Crucial Area Planning System (CAPS).

Projects

There have been no projects completed to date that involved sage-grouse compensatory mitigation. However, one multi-state transmission project, the Mountain State Transmission Intertie (MSTI) has been proposed with a Draft EIS due out in 2012. A mitigation bank on private land has been discussed between a private conservation banker, FWP, and the project proponent as one potential option for offsite compensatory mitigation of impacts to sage-grouse.

Nevada^{vii}

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^{viii} 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. 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. In 2008 Nevada Governor Jim Gibbons issued an Executive Order declaring 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 associate white paper depicting and explaining the habitat categorizations was produced in early 2012^{ix}. 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 is also recommended that each energy development project support a monitoring program.

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 with 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. The amount of funding requested to offset development impacts within Category 1 and 2 habitats is 3 times the development area and zone of influence. The same scenario applies to project in Category 3 habitats except the ratio is 2:1 and additional mitigation may be requested if the project 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 developed. 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 development ranking Nevada a top state for development of these resources. Approximately 87% of Nevada is public land managed by BLM and USFS. Many energy developments, transmission corridors, 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 the western states include large portions of sagebrush steppe. Non-renewable energy development is not as prominent as in other western states though there are a large and growing number of oil and gas leases primarily in 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 greater than 150 KW. Counties have siting authority for private 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 (including large-scale energy projects coordinated through Nevada’s Office of Energy Resources). 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, however a majority of the projects occur on federal land and agencies are able to comment through the NEPA process.

The state does not have authority to require mitigation though requirement for mitigation is a Nevada Board of Wildlife Commission policy.

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 negotiated in lieu payments to the PRCD, a state agency, or the BLM which in turn fund or oversee the funding of restoration projects, land acquisitions, or research. 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 have impacts to sage-grouse habitat are various stages of review including Gateway West Transmission, TransWest Express Transmission and China Mountain Wind.

North Dakota^x

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.

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 and its primary purpose is to ensure minimal adverse effects on the environment and on the welfare of the citizens of North Dakota. Siting Certificates are required for construction of any electric generating facility with 50 MW or more 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 smaller than 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 private, state and federal lands.

Projects

There are past or proposed projects that describe compensatory mitigation for impacts to sage-grouse (*need this info*). A 2001 report^{xi} 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. 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.

Oregon^{xii}

Mitigation plan

Oregon sage-grouse populations and sagebrush habitats likely comprise nearly 20% of the North American range wide distribution. Thus, management actions in Oregon will have implications on a range wide scale. 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. 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 greater sage-grouse and intact functioning sagebrush communities in Oregon. A sage-grouse *Mitigation Framework* identifies guidelines for mitigating impacts to sage-grouse resulting from energy projects 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, and thus the ability for wildlife agencies to review projects, is governed by multiple agencies at the federal, state and local levels. Wind and other energy projects equal to or over 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 less than 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. 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 draft 10-year energy action plan (http://www.oregon.gov/energy/Pages/Ten_Year_Energy_Plan_Draft.aspx), released in June 2012, included 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* – 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 land use plans, 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 lands.

Projects

Three projects have been permitted in the state of Oregon that have established compensatory mitigation for sage-grouse. Mitigation for the Ruby Pipeline was handled through an in lieu type fund, designed for habitat restoration projects (results and details of mitigation projects unknown). Two wind projects, West Butte and Echanis, both contain habitat management plans that are designed to identify property upon which to conduct habitat management actions for mitigation for sage-grouse. For West Butte, these actions are to occur solely on BLM lands. For Echanis, a combination of private and public (BLM) lands is proposed. Neither projects’ mitigation plans have been implemented. At least one currently proposed project, the B2H transmission line, will have impacts to sage-grouse that will require some form of compensatory mitigation.

South Dakota^{xiii}

Mitigation Plan

Western South Dakota is considered the most easterly fringe of the range of sage-grouse in the United States. Although believed to be found throughout western South Dakota, the majority of the birds are now restricted to two counties.

The mission of the South Dakota Division of Wildlife (SDDW) 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.

Siting Process and Environmental Review

South Dakota Public Utility Commission (SDPUC) has permitting authority for energy conversion and transmission facilities and has regulatory authority to provide siting guidelines for wind power projects greater than 100 MW. The SDOUC issues a Permit to Construct for all electric transmission lines > 250 kV and lines 115 kV to 250 kV if they are > 1 mile in length and do not follow section lines, roads, property lines, highways or railroads, or is not reconstruction or modification of existing transmission

lines or associated facilities on abandoned railroad ROW. The SDPUC also has jurisdiction over certain hydrocarbon pipelines. Smaller projects are subject to local government review and some counties currently 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 SDDW is opportunistic, and most often through NEPA. The State does not have the authority to require mitigation and recommendations are voluntary.

South Dakota does have voluntary *Wildlife Guidelines for Wind*. The guidelines recommend pre-construction biological reconnaissance, design measures to minimize impacts to wildlife, and to consult early and frequently with SDDW 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^{xiv}

Mitigation plan

Utah is home to both the Greater sage-grouse and Gunnison sage-grouse species. The goal of the 2009 state management plan^{xv} (for Greater sage-grouse) is to expand and conserve populations by protecting and improving wildlife habitat. Mitigation is mentioned as a possible measure for energy development impacts in the plan. A 2008 development plan^{xvi} outlines principles to address in evaluation of development proposals, including siting recommendations and avoidance measures. A more detailed strategy (mitigation framework) is being developed by a multi-agency Governor's task force and could be released by summer 2012. The plan may model Wyoming's core area strategy.

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, and Alton Coal Mine. Several more projects that may impact sage-grouse (e.g. another proposed coal mine and hydro pumps) are in various stages of the planning and review process.

Washington^{xvii}

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 are restricted to two main breeding populations. Major threats to the Washington populations include fires and continued conversion of shrub-steppe to cropland or development; additional factors affecting sage-grouse include the impacts of military training 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 mitigation may be required through the State Environmental Policy Act (SEPA). 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* 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 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 “By Fee” mitigation.

Siting Process and Environmental Review

The State Energy Facility Site Evaluation Council (EFSEC) has jurisdiction over all major energy facilities (greater than 350 MW) and any sized renewable energy facility that chooses to participate in the EFSEC review process. Counties or local governments permit smaller projects and those that choose not to go through the EFSEC review. Projects are subject to SEPA and 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 project through SEPA. WDFW is one of five agencies represented on EFSEC.

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, include 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 starts. 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 environmental impact statement (EIS) process. The EIS will analyze alternatives and possible mitigation measures to reduce the environmental impacts of the proposal.

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 in on hold and it set a precedent for future projects not to impact sage-grouse habitat. Only one project has been permitted that had impacts to the species, the Wild Horse Wind Farm.

Wyoming^{xviii}

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 less than a quarter of all sage-grouse habitats in Wyoming, 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 mitigation 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. 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 of 0.5 MW or more 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. *(status of these projects unknown)* 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).

DRAFT

Appendix A. State summary of mitigation programs and projects for Greater sage-grouse (GSG) as of April 2012.

	CA	CO	ID	MT	ND	NV	OR	SD	UT	WA	WY
GSG Mitigation Framework	No	No	Proposed	Draft	No	Yes	Yes	No	Draft	No	Draft
State Energy Siting	Yes	Yes	No	Yes (Except Wind)	Yes (Except wind <80 MW)	Yes	Yes (Except wind <105 MW)	Yes	Yes	Yes	Yes
County or Local Siting Permit	Yes	Yes	Yes	Variable	No	Yes	Variable	Variable	No	Yes	Yes
State-Level Wildlife Agency Review¹	Yes (SEPA/CEQA)	Yes	Opportunistic (Cannot require mitigation)	Yes (Siting; SEPA)	Opportunistic	Variable (Siting; Opportunistic)	Variable (Siting; Opportunistic)	Yes (SEPA; cannot require mitigation)	Yes	Yes (SEPA; county)	Yes
USFWS Review	None to Date	None to Date	Opportunistic	None to Date	None to Date	Opportunistic	Opportunistic	None to Date	Opportunistic	Opportunistic	Opportunistic
Interest in FWS reg. certainty^{2?}	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes
Projects with Comp.³ Mitigation	No	5+	None	None	None	3	3	None	3	1	1
Form of Comp. Mitigation⁴	n/a	In Lieu (Research)	n/a	n/a	n/a	In Lieu Fund	In Lieu Fund & Off-Site Habitat	n/a	In Lieu; Research; Restoration; Predator Cont.	On-site Habitat Restoration	In Lieu Fund, Monitoring
Proposed Projects with Mitigation	1?	1	3	2	None	None	1	1	2	None	2
Proposed Form(s) of Mitigation	?	?	In Lieu Fund	Offsite “bank” Restoration & In Lieu Fund	n/a	n/a	?Habitat Restoration	Habitat Restoration; In Lieu Fund	Land Protections	n/a	?

¹ Opportunistic = review and comment on projects through the NEPA process, working groups, or by request of a county or project proponent.

² Reg. = regulatory. Regulatory certainty refers to the potential for the Service to provide some form of ESA-type compliance to project proponents if species is listed.

³ Comp. = compensatory. Compensatory refers to mitigation for unavoidable impacts required after avoidance and minimization measures have been employed.

⁴ In Lieu Fund = refers generally to some form of payment “in lieu” of site specific mitigation. Funds may be used for acquisitions, habitat restoration, research, etc.

Appendix B. Project Summary Table – GSG Mitigation White Paper

Project	Federal/Private	Type	States	GSG Impacts	Mitigation
Permitted Projects					
Ruby Pipeline	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)
West Taviputs	BLM	Oil & Gas	UT	22,951 acres sagebrush that includes Core winter GSG habitat 685 acres surface disturbance	4:1 ratio of long term disturbance acreage; 30% to be done in first 3 years; 70% to be done with 1 year of drilling completion
Alton Coal	Private	Coal Mine	UT	1 lek	Yearly fees and research funding
McGinness Hills	BLM	Geothermal	NV	14,530 core-breeding habitat and 4 active leks within a 2-mile project buffer; 217 acres of direct and/or long-term surface disturbance to category 1 sage-grouse habitat 34 acres of lost brood-rearing habitat	3:1 offsite habitat restoration, following BLM specifications, for the 254 acres lost Population Monitoring: monitoring shows loss of lek, operator must fund additional restoration to improve nesting habitat on active lek at 3:1 Genetic sampling: if loss of habitat connectivity documented via genetic sampling, mitigation for this loss may include: Habitat restoration in areas identified through radiotelemetry or other monitoring as important corridors for sage-grouse movement; retroactive burial of transmission line in sagebrush habitat if identified as a barrier to movement
Ormat Nevada	BLM	Geothermal Plant, Road & Transmission Line	NV	Indirect effects to 8,091 acres category 1 10 active leks within 3 miles of power plant & access road 13 lek sites near transmission line	6:1 at \$600/acre restoration of 84.5 acres surface disturbed in GSG habitat \$622,500 went in Voluntary Conservation Fund for GSG Monitoring & \$1.9 million bond for burying transmission line if found to cause decline in leks
Spring Valley	BLM	Wind	NV	Short term disturbance 139.7 acres GSG habitat 2 mile buffer = 38,289 acres of potential avoidance area	\$500,000 in lieu fund for sagebrush restoration

Project	Federal/Private	Type	States	GSG Impacts	Mitigation
Wild Horse	Private	Wind	WA	Historic and corridor GSG site; impacts to sagebrush assessed on 8,600 acres of shrub-steppe; 165 acres permanent lost and 401 acres temporarily disturbed	600 acre on-site mitigation parcel
West Butte	BLM	Wind	OR	Approximately 16,335 acres of sagebrush habitat located within 3-mile buffer of known leks near/within the Project Area. GSG documented use of area for many years and 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 BLM land
Echanis/North Steens	Private/BLM	Wind	OR	No leks within 3 miles of proposed turbine locations but displacement effects on approx. 10,800 acres	10,885 acres of mitigation; Two Habitat Management Plans will identify sites (on private and public land) and management measures to take.
Tuscarora Pipeline	Private/BLM	Gas Pipeline	CA		Land Purchase
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.
Proposed Projects (Impact and Mitigation Data from the Proposed Action)					
China Mountain	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; real estate and financial protections mentioned
Gateway West	BLM	Transmission	ID, NV, WY	677 mile of suitable GSG habitat 235 miles is crucial; within 2 miles of 66 leks and 11 miles of 511 leks	Framework for impact and offset assessment being developed; in lieu fund proposed with suggested mitigation ratios 0.3:1 to 1:1 multiplied by a per acre (\$2000) or per line mile (\$20,000) cost

Project	Federal/Private	Type	States	GSG Impacts	Mitigation
MSTI	BLM, USFS	Transmission	ID, MT	563,000 acres GSG habitat Using 3 mile buffer , 83,000 acres core habitat and 82 leks	Private banker may do offsite mitigation
Alton Coal	BLM	Coal Mine	UT	Mine =disturbance of 1,290-1,402 acres of crucial sage-grouse brooding habitat Road = 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	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 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
Keystone XL	BLM, Dept. State	Pipeline	MT, SD	MT: 190 miles of pipeline through habitat (20 miles core, 94 miles moderate to high quality, 96 miles marginal) One 2.75-mile-long permanent access road and one pump station would also occur within habitat. A total of 24 active leks identified within 3 miles.Roads & pump stations within 4 miles of leks. SD: 40 historic lek locations were identified within 4 miles	Establish compensatory mitigation fund (MT); Fund 4 year study (MT-led) Reclamation measures
B2H	BLM; Private	Transmission	OR, ID	Specific acres/effects unknown as this time but likely to affect both core and low density habitats.	Draft mitigation framework proposed.

APPENDIX C – PROJECT SUMMARIES (DATA AS OF APRIL 2012)

The following information summarizes 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.

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 that had impacts to sage-grouse but 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 the 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. Also, the multitude of programmatic oil and gas projects in Colorado where research funding was used as compensatory mitigation are not discussed here (those plans were not publicly accessible).

PERMITTED PROJECTS

Rockies Western Phase Project – Gas Pipeline (CO, WY)^{xix}

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 environmental impact statement (EIS) 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) in 2007. The Rockies Western Phase Project (project) consists of the construction and operation of approximately 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 U.S. Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (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:

1. 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.
2. Blanco to Meeker Project - TransColorado (CO): One greater 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. The Blanco to Meeker project could affect sage-grouse by further constricting the amount of habitat available for southwest-to-northeast movements, impacting nearby grouse due to compressor station noise, and creating additional perches from which raptors could prey on grouse. Direct impacts of construction on sage-grouse may include the loss of 0.75 acre of sage-grouse habitat. Depending on the timing of construction, the Blanco to Meeker Project could disturb sage-grouse during lekking activities or brood rearing.
3. 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

1. 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 has also 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 right-of-way through the lek and avoiding permanent surface development within the lek. Following construction, Rockies Express 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).

TransColorado (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 greater sage-grouse leks between March 1 and July 15; (2) that greater 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.”

2. Overthrust – Wamsutter (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, which helps minimize increased raptor presence and predation of sage-grouse.

“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 right-of-way 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.”

Ruby Pipeline (NV, OR, UT, WY)

Background

In April 2010, FERC issued a Certificate for the Ruby Pipeline Project to Ruby Pipeline, LLC (Ruby) authorizing construction of approximately 678 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). The project crosses four states and will transport up to 1.5 million dekatherms per day of natural gas from southwestern Wyoming to customers in Nevada and on the West Coast.

The environmental protection measures Ruby incorporated into its 2010 Plan of Development (POD) 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, POD, the ROD, the BO 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 would affect about 8,775 acres of sagebrush steppe habitat. About 143 miles of high-quality greater 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 has 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 Oregon, Utah, and Wyoming.

Based on these processes, Ruby provided funds in the amounts of \$8,826,411 for Nevada, \$589,038 for Oregon, \$1,266,377 for Utah, and \$909,543 Wyoming. The total conservation effort funded is over \$11.5 million over the entire span of the project.

- Nevada - All funds received from Ruby for conservation projects in the State of Nevada in the Cooperative Conservation Agreement are deposited in a Nevada Department of Wildlife (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 – Ruby and the Oregon Natural Desert Association (ONDA) set up a Greater Hart-Sheldon Conservation Fund, with the goal of preserving the high desert sagebrush-steppe ecosystem encompassing the Hart Mountain National Antelope Refuge in southeastern Oregon and the Sheldon National Wildlife Refuge in northwestern Nevada. This Fund promotes restoration activities including spring restoration, fence removal, weed control, land acquisition, and grazing permit retirement.
- Utah – All funds received from Ruby for conservation projects in the state of Utah in the Agreement are deposited in a Utah Division of Wildlife Resources (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, U.S. Forest Service, Utah School and Institutional Trust Lands Administration, Natural Resources Conservation Service, 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. Wyoming Game and Fish Department (WGFD) coordinates cooperatively within the framework of the WLCI, which includes partnerships with WGFD, BLM, U.S. Forest Service, 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 greater 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.”

West Tavaputs Oil & Gas (UT)

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, USFWS, 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 greater 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 greater 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 (BO) 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 BO were included in the ROD as committed mitigation.

In regards to sage-grouse, the BO 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 greater 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 Development - Private (UT)

Background

The Alton Development Company Coal Mine (Alton Coal) is located private land in southwestern Utah. They are proposing to expand the mine onto leased federal land. A draft EIS^{xx} has been developed and is under review by the BLM (see “Proposed Projects” section below).

Impacts to Sage-grouse

One lek currently resides on top of the mine.s

Mitigation

Alton Coal is funding research for how the lek responds as the mine is developed and also offering to pay yearly for every year the mine is open (\$10k/yr) for impacts.

McGinness Hills Geothermal - (NV)

Background

This Section Under Construction

Impacts to Sage-grouse

Four active leks known to occur within 2 miles of the Project Area and within the 2-mile Project buffer, 14,530 acres of sage-grouse core-breeding habitat occurs and may be affected by Project development. Impacts to sage-grouse include the reduction of foraging and nesting habitat. Actual surface disturbance and direct habitat loss is small (217 acres). Effects from habitat fragmentation from this habitat loss would be concentrated around the plants, production and injection pipelines, and wells. Impacts may occur through Project development to sage-grouse movement corridors between metapopulations. The majority of the Unit Area, production plants, injection and production pipelines, and 3.0 miles of the proposed transmission line occur in sage-grouse core-breeding habitat.

To account for habitat fragmentation and indirect effects from Project activities and disturbance, a 2 mile buffer was placed around the components of the Project. This buffer encompasses 38,023 acres. The entire Project occurs within the NDOW-designated winter and summer habitat. Sage-grouse telemetry data document sage-grouse use of habitat near portions of the Project facilities during the lekking/nesting, brood-rearing, and winter. The extent of connectivity and movement corridors between sage-grouse metapopulations is unknown.

Mitigation

The Operator will complete at a 3 to 1 ratio (NGSCT 2010) offsite habitat restoration to compensate for disturbance for the 217 acres of direct and/or long-term surface disturbance to sage-grouse category 1 habitat in the vicinity of the Project. The Operator will complete and fund all restoration projects to BLM specifications, following all BLM requirements for additional analyses. At a 3 to 1 ratio, this equates to 651 acres (217 acres*3). Restoration projects will be completed in R-1, R-2, R-3, or R-4 value habitats. Treatments may include the following: Sagebrush seedings into historic burned areas; Interseeding or diversification of surrounding monotypic habitats; Shrub thinning or green stripping to reduce fuels and fire risk to sage-grouse habitats with subsequent successful seeding; Weed treatment with subsequent successful seeding; Pinyon-juniper reduction; and Improvements and protection of brood-rearing habitat.

The Operator will complete at a 3 to 1 ratio (NGSCT 2010) offsite treatments to protect and/or restore the 34 acres lost of brood-rearing habitat in targeted locations. The Operator will complete and fund all restoration projects to BLM specifications, following all BLM requirements for additional analyses. At a 3 to 1 ratio, this equates to 102 acres (34 acres*3). Treatments may include fencing, plantings, and contouring landscape features.

All mitigation measures outlined above are effective for the life of the Project unless subsequent monitoring deems them inadequate, and modification is deemed necessary. Subsequent monitoring will include sound pressure level monitoring, sage-grouse population monitoring, and common raven population monitoring. If through this monitoring, identified triggers/thresholds are met, additional or alternative mitigation measures will be required. Because time lags in sage-grouse response to development have been documented, all monitoring will be conducted for a minimum of 10 years, beginning when construction of permitted activities is started.

If future mitigation measure to offset loss of a lek location are necessary, the Operator will be required to fund additional habitat restoration projects to improve nesting habitat associated with active leks at a ratio of 3 to 1 for the acres lost around a 2-mile radius buffer of the lost lek site.

Ormat Nevada Geothermal - (NV)

Background

This Section Under Construction

Impacts to Sage-grouse

A total of 10 active leks are within 3 miles of the power plant and access road and an estimated 13 additional sites are in the vicinity of the Transmission Line. Three leks are within one mile of the plant site. The Tuscarora Facility, in combination with the Transmission Line that would extend east to the Humboldt Substation, 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 effect are due to the zone of influence of the Tuscarora power plant site.

Mitigation

ORMAT will voluntarily fund, at a 6:1 ratio at \$600 per acre (as supplied in the 2010 Nevada Energy and Infrastructure Standards to Conserve Greater Sage-Grouse), 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 Right-of-Way for the associated Transmission Line. The trust fund should be 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) should be made up of representatives from ORMAT, BLM, USFWS, 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.

Spring Valley Wind - (NV)

Background

Spring Valley Wind, LLC's proposed Spring Valley Wind Project is a 150-megawatt wind generation farm would be constructed on 7,673 acres of the public lands in north Spring Valley, about 30 miles east of Ely, Nevada. The project would consist of 75 wind turbines, electrical substation and utilize an existing 230 kilovolt (kV) transmission line for distribution. The project was analyzed in an environmental assessment (EA), which is tiered to the 2005 Programmatic Environmental Impact Statement on Wind Energy Development.

Impacts to Sage-grouse

Construction activities would result in the short-term disturbance of 139.7 acres of sage-grouse habitat, which is 3.8% of total habitat within the project area. 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 = 38,289 acres.

Mitigation

In addition to timing restrictions, as part of the project the proponent has volunteered to donate \$500,000 to enhance sagebrush habitat that supports species such as the greater sage-grouse. Funds would 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)

Background

The Wild Horse Wind Project site encompasses about 9,560 acres of open range land 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.

Impacts to Sage-grouse

Information from the State EIS in 2005 indicate 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. The EHWPP area remains important migration corridor between two remnant populations of greater sage-grouse at approximately 30 miles apart. The construction of the entire EHWPP 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

2005: An approximately 600 acre on-site Mitigation Parcel has been designated for mitigation of all permanent and temporary impacts to habitat caused by construction and operation of the 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, post construction management plan.

The 2009 DSEIS 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 in Section 15 is proposed if the replacement habitat option is selected. As detailed in the FSEIS 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 (August 2003). 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.

West Butte Wind (OR)

Background

The West Butte Wind Power Project 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 being proposed would be 2.0 to 3.0 megawatts (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.

Impacts to Sage-grouse

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 greater 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 project area. Using ODFW's noise propagation model where turbine noise, the access road, powerlines, and road were buffered to measurement project effects, it was determined that 9,000 acres of sage-grouse habitat would require mitigation.

Mitigation

Mitigation will occur in the form of 9,000 acres of restoration and enhancement with an objective of meeting the "no net loss, net benefit" objective (ODFW's Mitigation Policy for Low Density sage-grouse areas). Mitigation would be implemented on BLM land. In addition, the project proponent must implement the avian fatality monitoring plan and institute additional mitigation if fatality threshold are reached.

Steens/Echanis Wind (OR)

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 March 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 greater 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 method, the transmission line would result in 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 Echanis access road on public land and Echanis 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.

PROPOSED PROJECTS

Information as of April 2012

China Mountain Wind (ID, NV)^{xxi}

Background and Status

China Mountain Wind, LLC (CMW) and NV Energy submitted an application in 2010 for a right-of-way (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 greater 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.

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 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.”

Gateway West Transmission (ID, NV, WY)^{xxii}

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 line. The transmission line would be approximately 1,100 miles long and go through Idaho and Montana. An alternative route also crosses Nevada. The line would deliver up to 3,000 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 Draft EIS was released to the public for comment and review in July 2011. Public meetings regarding sage-grouse are on-going. The NEPA timeline indicates comments will be addressed and a Final EIS will be presented in late 2012 with a ROD in 2013.

Impacts to Sage-grouse

Based on preliminary analysis, suitable greater sage-grouse habitat occurs along all segments of the proposed route with direct crossing of the line through approximately 677 miles of suitable sage-grouse habitat. Over 235 miles of this habitat is considered crucial for sage-grouse in Wyoming and Idaho, with 54 miles of habitat crossed in Nevada. The proposed route would pass within 0.6 miles of 8 leks and within 2 miles of 66 leks that are either occupied or have an undetermined management status. This value increases to 511 leks when considering a distance of 11 miles. 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

Direct impacts are quantified and presented for construction-related actions common to all alternatives. Due to a lack of quantifiable data on indirect impacts, these are presented in a qualitative manner. The Draft EIS contains preliminary mitigation measures, identified as proponent-proposed and BLM-required measures already incorporated into the impact analysis. The Draft EIS states that until an impacts analysis has been conducted in coordination with agency biologists—leading to an adequate understanding of impacts to sage-grouse populations and habitat—the issue of mitigation cannot be addressed.

The BLM, Service, Idaho Department of Fish and Game, and the Wyoming Game and Fish Department (all cooperating agencies) jointly developed the *Framework for Sage-grouse Impacts Analysis for Interstate Transmission Lines*. The Framework has three components:

1. Evaluation of direct and indirect impacts;
2. Addressing direct loss of birds; and
3. Mitigation - Habitat Equivalency Analysis (HEA)

A HEA is one of the tools in the proposed Framework that will assist in quantifying project related impacts to sage-grouse (i.e., habitat services lost). Ultimately, the results of the HEA will be used to

inform the development of a compensatory mitigation plan for both temporary and permanent impacts across the entire project area.

Agency proposed mitigation measures in the Draft EIS include seasonal timing of construction and no surface occupancy (NSO) within 0.6 mile of the perimeter of occupied greater sage-grouse leks. “No surface occupancy,” as used here, means no surface facilities, including roads, shall be placed within the NSO area. Other activities may be authorized with the application of appropriate seasonal stipulations; provided the resource’s protected area is not adversely affected.

The proponent’s proposed environmental protection measures outlines specific conservation measures for Idaho and Wyoming. For compensatory mitigation, the Companies propose an in-lieu fee payment for direct permanent impacts within mapped habitat. The Companies are not proposing payment for temporary impacts within mapped habitat because temporary impacts will be restored. To acknowledge that current information does not clearly indicate the nature and extent of indirect impacts, the Companies have also proposed an in-lieu fee payment based on line miles within and adjacent (within 1 km) to mapped habitat.

Depending on the location (within or adjacent to mapped habitat) and type of impact (direct or indirect), mitigation ratios range from 0.3:1 to 1:1 (acres or line miles). Costs are based on average costs and the assumption that most mitigation activities would involve revegetation. Payments would be calculated using the following formulas:

- Direct permanent impacts: Mitigation funding = (\$2,000/acre) (mitigation ratio) (acres impact)
- Indirect effects: Mitigation funding = (\$20,000/line mile) (mitigation ratio) (line miles)

Mitigation funds would be paid to the Office of Species Conservation (OSC) in Idaho for impacts that occur in Idaho and to the Wyoming Wildlife and Natural Resource Trust (WWNRT) for impacts that occur in Wyoming. In-lieu fee payments will be paid over a ten-year period, at ten percent each year. Those entities will disperse funds to sage-grouse local working groups that cover areas impacted by the project.

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 greater 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.”

MSTI (ID, MT)^{xxiii, xxiv}

Background

NorthWestern Energy (NorthWestern), a regulated investor-owned utility serving 650,000 customers in Montana, Nebraska and South Dakota, proposes to construct, operate, and maintain a 500 kV, 1,500 MW

electric line from a proposed new substation in Montana. The line would extend to a substation in Idaho and cross both BLM and USFS lands. Construction would also include modification of existing roads and the Idaho substation as well as developing new access roads. NorthWestern includes increasing demand for renewable energy and additional transfer capacity out of Montana are needs for the proposed project.

In 2010 a preliminary EIS was drafted to meet the needs of NEPA as well as the Montana Environmental Policy Act (MEPA) and the Major Facility Siting Act (MFSA), both Montana statutes. BLM and Montana Department of Environmental Quality (MDEQ) are lead agencies in preparation of the EIS. Montana Fish Wildlife and Parks is the only cooperating wildlife agency. Ongoing communications are occurring between the lead agencies, stakeholders, and cooperating agencies that have comments and concerns. The Draft EIS is expected to be completed and released in the summer of 2012.

Impacts to Sage-grouse

Note: this information is based on the 2010 preliminary Draft EIS and could change in the 2012 Draft EIS. It is provided to show an estimate of the potential extent of impacts to sage-grouse.

The proposed action alternative may impact 563,000 acres of sage-grouse habitat. Within a 3 mile buffer on either side of the transmission line, 83,000 acres of core habitat and 82 leks may be affected. The agency preferred alternative may impact 410,000 acres of sage-grouse habitat. Within 3 miles, 119,000 acres of core habitat and 50 leks could be impacted. Core areas represent the highest density of sage-grouse and/or are of high importance for distribution. The March 2010 BLM instruction memorandum No. 2010-71 (Gunnison and Greater Sage-grouse Management Considerations for Energy Development, supplement to the National Sage-grouse Conservation Strategy) states that BLM policy with regard to siting transmission lines is to re-route to avoid priority habitat for sage-grouse. Core areas in Montana and key habitat in Idaho were considered as priority by BLM during the development of route alternatives.

Active lek locations provided by MFWP were used in Montana and active leks and leks with undetermined status as recommended by the Idaho Sage-grouse Conservation Plan were the basis for analysis in Idaho. To supplement existing data in the project area, ground and aerial surveys for leks and habitat were conducted on those transmission line alternatives in Montana by NorthWestern in 2006, resulting in the discovery of six new leks. NorthWestern also provided funding to MFWP to conduct surveys in Montana. No new leks were discovered. No new field surveys were conducted in Idaho.

Mitigation

Mitigation for impacts to sage-grouse on this project will be discussed when the Draft EIS is released (summer 2012). A mitigation bank on private land has been discussed between a private conservation banker, MFWP, and the project proponent as one potential option for offsite compensatory mitigation of impacts to sage-grouse.

Alton Coal Mine - BLM (UT)

Background

The BLM has 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 very 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 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 the sage-grouse that occur along the coal haul 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

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 Greater 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 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 Greater Sage-grouse habitat management:

- SSS-54: All surface-disturbing activities would be prohibited within 0.5 mile of Greater 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 Greater 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 Greater 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.

Keystone XL Pipeline (MT, SD)^{xxv}

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 1700-mile crude oil pipeline and related facilities that would primarily be used to transport Western Canadian Sedimentary Basin crude oil from an oil supply hub in Alberta, Canada to delivery points in Oklahoma and Texas. The proposed project would also be capable of transporting U.S. crude oil to those delivery points. The proposed project could transport up to 830,000 barrels per day and is estimated to cost \$7 billion. If permitted, it would begin operation in 2013.

A Draft EIS was released to the public in April 2010, and a Final EIS was released in August 2011. The project is currently on hold, and may be subject to further environmental review.

Impacts to Sage-grouse

The proposed pipeline would cross through a greater sage-grouse management zone in Montana and western South Dakota, which supports an estimated 62,320 sage-grouse in Montana and 1,500 sage-grouse 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 greater sage-grouse. 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 24 recently active greater sage-grouse lek locations were identified within 3 miles of the proposed Project facilities in Montana.

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 2010.

Two of the six proposed pump stations in Montana would be constructed within 4 miles of confirmed active leks and both of these pump stations are more than 2 miles from either lek. One new pump station in Montana would be constructed within 4 miles of an unconfirmed active. One new pump station in South Dakota would be constructed within 4 miles of an unconfirmed 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 2 miles of the proposed pump station locations in Montana. 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 greater 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 greater 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 greater sage-grouse.

The proposed power distribution lines to pump stations would impact a total of about 41 miles of habitat within 4-miles of greater sage-grouse leks in 9 locations. In Montana one line would cross within several hundred feet of an active lek site.

Mitigation

Several agencies identified mitigation measures to reduce the potential impact of the proposed project on greater sage-grouse and their sagebrush habitats. These measures are included in the Montana Department of Environmental Quality (MDEQ) Environmental Specifications and special condition 41 from the South Dakota Public Utilities Commission and are summarized below. The measures that could be considered “compensatory” in nature are in bold:

- Conduct surveys of greater sage-grouse leks prior to construction; and
- Develop a conservation plan with MFWP, SDGFP, USFWS, and BLM to address impacts to greater sage-grouse, including construction timing restrictions, habitat enhancement, and any mitigation measures that would be necessary for a lek within the construction ROW, including:
 - Follow all protection and mitigation efforts as identified by USFWS and SDGFP including identify all greater sage-grouse leks within the buffer distances from the construction ROW set forth for the greater sage-grouse by USFWS, avoid or restrict construction activities as specified by USFWS within buffer zones between March 1 and June 15;
 - Construction within 3 miles of active greater sage-grouse leks in suitable nesting habitat not screened by topography would be prohibited during March 1 to June 15, with an allowance for one-time equipment movement during mid-day hours through ROW areas with timing restriction that do not require grading for equipment passage to lessen disturbance to sage-grouse leks;
 - Construction within 2 miles of active greater sage-grouse leks on BLM lands would be prohibited during March 1 to June 15;
 - Reduce the mound left over the trench in areas where settling would not present a path for funneling runoff down slopes in sagebrush habitat, additional measures shall be taken to compact backfilled spoils to reduce settling;
 - **Establish a compensatory mitigation fund** for use by MDEQ, MFWP, and BLM to enhance and preserve sagebrush communities for greater sage-grouse and other sagebrush-obligate species in eastern Montana (size of the fund to be based on acreage of silver sagebrush and Wyoming big sagebrush habitat disturbed during pipeline construction within sage-grouse core habitat mapped by MFWP and important habitat between approximate mileposts 95 to 98 and 100 to 121);
 - Limit inspection over flights to afternoons from March 1 to June 15 during operations as practicable in sagebrush habitat designated by MFWP;
 - **Fund a 4-year study**, under the direction of MDEQ, MFWP, and BLM, that would show whether the presence of the facility has affected greater sage-grouse numbers based on the peak number of male sage-grouse in attendance at leks;
 - **Implement reclamation measures** (i.e., application of mulch or compaction of soil after broadcast seeding, and reduced seeding rates for non-native grasses and forbs) that favor the establishment of silver sagebrush and big sagebrush in disturbed areas where

- compatible with the surrounding land use and habitats unless otherwise requested by the affected landowner);
- Prior to construction, conduct studies along the route to identify areas that support stands of silver sagebrush and big sagebrush and incorporate these data into reclamation activities to prioritize reestablishment of sagebrush;
 - Monitor and report on establishment of sagebrush on reclaimed areas, unless otherwise requested by the landowner, annually for at least 4 years to ensure that sagebrush plants become established at densities similar to densities in adjacent sagebrush communities and implement additional seeding or plantings of sagebrush if necessary;
 - Establish criteria in conjunction with MDEQ, MFWP, and BLM to determine when reclamation of sagebrush communities has been successful based on pre- and post-construction studies in addition to revegetation;
 - Use locally adapted sagebrush seed, collected within 100 miles of the areas to be reclaimed, unless otherwise requested by the affected landowner (seed would be collected as close to the Project as practicable as determined by regional seed production and availability);
 - Monitor cover and densities of native forbs and perennial grasses exclusive of noxious weeds on reclaimed areas and reseed with native forbs and grasses where densities are not comparable to adjacent communities;
 - Work in conjunction with the landowner with landowner approval to appropriately manage livestock grazing of reclaimed areas until successful reclamation of sagebrush communities has been achieved (livestock grazing in reclaimed sagebrush communities may promote establishment of; and
 - Implement measures to reduce or eliminate colonization of reclaimed areas by noxious weeds and invasive annual grasses such as cheatgrass to the extent that these plants do not exist in undisturbed areas adjacent to the ROW (noxious weed management plans would be developed and reviewed by appropriate county weed specialists and land management agencies for each state crossed by the Project).

The Final EIS states that “with incorporation of...the mitigation measures described above, construction and operation of the proposed Project would not likely affect greater sage-grouse courtship activities on leks and would likely result in a minor impact on nesting birds. However, construction would likely result in an incremental loss of sagebrush habitat that is currently used for foraging and nesting by greater sage-grouse, and reestablishment of that habitat could require 15 to 20 years or longer.”

Energy Gateway South Transmission (CO, UT, WY)^{xxvi}

NOTE: As of 2012 this project is in the very early stages of environmental review (a draft EIS has not been released). It is included as an example of a multi-state project with potential impacts to sage-grouse where impacts are being assessed and potential mitigation is currently being negotiated.

Background

PacifiCorp (doing business as Rocky Mountain Power) a regulated public utility, has filed an application for a ROW to construct, operate and maintain a 500 kV overhead, alternating current transmission line to cross public and private lands in Utah, Colorado and Wyoming for the Energy Gateway South Transmission Line Project. The project would transmit about 1,500 MW of electricity generated from

renewable and thermal sources at planned facilities in Wyoming. The project includes a 500 kV alternating current overhead transmission line and 400+ miles long 250 foot ROW width.

Scoping meetings were held spring 2011. BLM and the cooperating agencies are currently collecting data and assessing impacts on the proposed and alternative routes. A draft Environmental Impact Statement (EIS) will be prepared by 2013. Public meetings regarding sage-grouse are on-going.

Impacts to Sage-grouse

Based on preliminary analysis, suitable sage-grouse habitat could be impacted in all three states. Early mitigation planning indicates timing and buffer restrictions (0.25 miles to 4 miles from a lek, dependent upon the timing and type of disturbance) will be used to minimize impacts. A density disturbance acreage cap (as per Wyoming's executive order) is also being considered.

Mitigation

This project is in the early phases of environmental review.

Boardman to Hemmingway (B2H) Transmission (OR, ID)

This Section Under Construction

Background

Impacts to Sage-grouse

Mitigation

REFERENCES

- ⁱ <http://www.ndow.org/wild/conservation/sg/plan/>
- ⁱⁱ <http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/Pages/GreaterSagegrouseConservationPlan.aspx>
- ⁱⁱⁱ <http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/Pages/GreaterSagegrouseConservationPlan.aspx>
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- ^{xxvi} http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html