From: Amy Defreese
To: Doug Young
Subject: RE: Sigurd to Red Butte
Date: Thursday, September 19, 2013 1:01:21 PM
Attachments: December 2011_BLM Interim Guidance Greater sage-grouse.pdf

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That is interesting. Yes, I suppose the comment from BLM-Utah could certainly have come from on-going sage-grouse/energy project discussions. Aside from the transmission lines, there is also a big coal mine proposed on BLM land in southern Utah with significant impacts to sage-grouse (according to the BLM). We've been clear that we think there may be significant impacts even with the application of compensatory mitigation (i.e. loss of local population).

Did anyone raise the 2012 IM (attached) as a resource in the conversation? I imagine you are already familiar with it. I seldom hear any reference to it in discussions with BLM. The guidance differs based on the type of project (i.e. leasable minerals, ROWs, vegetation management, etc.). For transmission lines (i.e. Rights of Way), BLM is supposed to work with the respective state wildlife agency to determine if the project would have more than minor adverse effects to gsg and its habitat. BLM is also supposed to determine (in coordination with the state agency) whether "the proposed ROW and mitigation measures will cumulatively maintain or enhance gsg habitat". If not, then the proposed ROW decision must be forwarded to the BLM State Director, State Wildlife Agency Director, and FWS representative for review. If this group is unable to agree on appropriate mitigation for proposed ROW, then the decision is forwarded up to the gsg National Policy Team, etc.

What this tells me is that the real test is whether the proposed project and mitigation measures will cumulatively maintain or enhance gsg habitat. If BLM can't say yes, then they need to propose compesnatory mitigation and include FWS.

For the projects where I am working with BLM and gsg, I raise this point, but again, I don't get any feedback from BLM. I often don't know whether they are familiar with this piece of guidance.

Amy Defreese, Ecologist
Utah Field Office, US Fish & Wildlife Service
2369 W. Orton Circle, Suite 50
West Valley City, Utah 84119
(801) 975-3330 x 128
amy_defreese@fws.gov

From: Doug Young [mailto:doug_young@fws.gov]
Sent: Thursday, September 19, 2013 12:43 PM
To: Amy Defreese
Subject: RE: Sigurd to Red Butte

I am on the BLM's broadcast for their new Regional Mitigation IM. A question came from BLM Utah that asked (I paraphrase): "if BLM does not think there are unavoidable adverse effects but other agencies do, does BLM have to propose offsite mitigation?" The answer seemed to be "no, as long as the BLM decision maker is convinced there are not unavoidable adverse effects" – but the

speaker also suggested that BLM reach out to the other agencies and try to develop upfront agreement on impact assessment and mitigation processes.

Could this BLM Utah question have come from ongoing sage-grouse/energy project discussions in Utah?

Thanks.

From: Amy Defreese [mailto:amy_defreese@fws.gov]
Sent: Wednesday, September 18, 2013 4:15 PM
To: Doug Young
Subject: RE: Sigurd to Red Butte

Hi Doug,
Yes … let's talk! Our office greater sage-grouse biologist (Jay Martini) and I commented to the draft APLIC BMP. I've attached our comments (with the attachments we sent). I was in a hurry, so I didn't have much time to connect the dots for Drue.

I'll be in the office tomorrow afternoon and all day on Friday. Give me a call at your convenience!

Best regards,
Amy

Amy Defreese, Ecologist
Utah Field Office, US Fish & Wildlife Service
2369 W. Orton Circle, Suite 50
West Valley City, Utah 84119
(801) 975-3330 x 128
amy_defreese@fws.gov

From: Doug Young [mailto:doug_young@fws.gov]
Sent: Wednesday, September 18, 2013 11:45 AM
To: Amy_Defreese@fws.gov
Subject: Sigurd to Red Butte

Hi Amy – hope all is well. I missed the last FWS t-line monthly call, but was interested in your presentation re: Sigurd to Red Butte project. There were impact assessments and responsive mitigation ratios in the t-line meeting notes that intrigued me. Could we discuss?

I note that the impact assessments (0.6 mi and 4 mi) indicate that t-lines and associated roads have direct and indirect effects to sage-grouse. The draft APLIC BMP document that we were recently asked to review has the basic premise that there is no good science and therefore no anticipated indirect impacts from new t-lines and roads. Did you comment on that draft APLIC BMP document? thanks.

Doug Young
Oregon Fish and Wildlife Office

U.S. Fish and Wildlife Service
2600 SE 98th Ave, Suite 100
Portland, OR 97266
503-231-6179

U.S. DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**
National

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240
http://www.blm.gov/
December 22, 2011

In Reply Refer To:
1110 (170/200/300/400) P

EMS TRANSMISSION 12/27/2011
Instruction Memorandum No. 2012-043
Expires: 09/31/2013

To: All Field Office Officials

From: Director

Subject: Greater Sage-Grouse Interim Management Policies and Procedures

Program Areas: All Programs.

Purpose: This Instruction Memorandum (IM) provides interim conservation policies and procedures to the Bureau of Land Management (BLM) field officials to be applied to ongoing and proposed authorizations and activities that affect the Greater Sage-Grouse *(Centrocercus urophasianus)* and its habitat. This direction ensures that interim conservation policies and procedures are implemented when field offices authorize or carry out activities on public land while the BLM develops and decides how to best incorporate long-term conservation measures for Greater Sage-Grouse into applicable Land Use Plans (LUP). This direction promotes sustainable Greater Sage-Grouse populations and conservation of its habitat while not closing any future options before the planning process can be completed.

This IM supplements the direction for Greater Sage-Grouse contained in Washington Office (WO) IM 2010-071 (*Gunnison and Greater Sage-Grouse Management Considerations for Energy Development*) and is consistent with WO-IM-2011-138 (*Sage-Grouse Conservation Related to Wildland Fire and Fuels Management*). The Gunnison Sage-Grouse, bi-state distinct population segment in California and Nevada, and the Washington State distinct population segment are not covered by this IM and will be addressed through other policies and planning efforts. WO-IM-2010-071 remains applicable to the Gunnison Sage-Grouse.

The 2010 U.S. Fish and Wildlife Service (FWS) findings on petitions to list the Greater Sage-Grouse (petition decision) (75 FR 13910 – 14014; 03/23/2010) identified habitat conversion and fragmentation from wildfire, invasive plants, energy and infrastructure development, urbanization, and agricultural conversion as the primary threats to the species throughout its range. Through this IM, the BLM is providing interim conservation policies and procedures across multiple programs, in order of threat magnitude, while the BLM considers amendments or revisions to LUPs. Maintaining and restoring high quality habitat for the Greater Sage-Grouse is consistent with the BLM multiple-use and sustained-yield management direction of the Federal Land Policy and Management Act.

Policy/Action: As summarized in the BLM's National Strategy, emphasis for protecting and managing Greater Sage-Grouse habitat incorporates the following principles:

1) Protection of unfragmented habitats;
2) Minimization of habitat loss and fragmentation; and
3) Management of habitats to maintain, enhance, or restore conditions that meet Greater Sage-Grouse life history needs.

To provide guidance to field offices about how to promote these principles, this IM transmits policies and procedures that apply to ongoing and proposed BLM actions, including use authorizations, within Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). PPH comprises areas that have been identified as having the highest conservation value to maintaining sustainable Greater Sage-Grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas. These areas have been identified by the BLM in coordination with respective state wildlife agencies. PGH comprises areas of occupied seasonal or year-round habitat outside of priority habitat. These areas have been identified by the BLM in coordination with respective state wildlife agencies.

The policies and procedures identified in this IM are designed to minimize habitat loss in PPH and PGH and will advance the BLM's objectives to maintain or restore habitat to desired conditions by ensuring that field offices analyze and document impacts to PPH and PGH and coordinate with states and the Fish and Wildlife Service when issuing the decisions described below. These policies and procedures are in addition to and do not replace more protective measures in existing LUPs. The direction in this IM is time-limited: for each planning area where Greater Sage-Grouse occur, the conservation policies and procedures described in this IM will be applied until the BLM makes decisions through the land use planning process. All such LUP decisions are expected to be completed by the end of 2014. The BLM field offices do not need to apply the conservation policies and procedures described in this IM in areas in which (1) a state and/or local regulatory mechanism has been developed for the conservation of the Greater Sage-Grouse in coordination and concurrence with the FWS (including the Wyoming Governor's Executive Order 2011-5, Greater Sage-Grouse Core Area Protection); and (2) the state sage-grouse plan has subsequently been adopted by the BLM through the issuance of a state-level BLM IM. If BLM programs are not addressed in the adopted state Greater Sage-Grouse plan then program direction will default to the policies and procedures set forth in this WO IM.

PPH and PGH data and maps have been developed through a collaborative effort between the BLM and the respective state wildlife agencies and are stored at the National Operations Center (NOC). These science-based maps were developed using the best available data and may change as new information becomes available. Such changes would be science-based and coordinated with the state wildlife agencies so that the resulting delineation of PPH and PGH provides for sustainable populations. In those instances where the BLM state offices have not completed this delineation, the Breeding Bird Density maps developed by Doherty 2010[1] will be used. The NOC will establish the process for updating files to include the latest PPH and PGH delineations for each state. This information will assist in applying the interim conservation policies and procedures identified in Sections I and II below. As LUPs are amended or revised, the BLM state offices will be responsible for coordinating with the NOC to use the newest delineation of PPH and PGH. BLM staff may access the PPH and PGH data, using the following link: **\\blm\dfs\loc\EGIS\OC\Wildlife\Transfers\GREATER_SAGE_GROUSE_GIS_DATA**. Non-BLM personnel, may access these maps through the respective state wildlife agency.

The BLM will continue to work with its partners including the Western Association of Fish and Wildlife Agencies (WAFWA), FWS, U.S. Geological Survey (USGS), Natural Resource Conservation Service (NRCS), U.S. Forest Service (USFS), and the Farm Services Agency (FSA) within the framework of the Sagebrush Memorandum of Understanding (2008) and the WAFWA *Greater Sage-Grouse Comprehensive Conservation Strategy* (2006).

I. Interim Conservation Policies and Procedures for "Preliminary Priority Habitat"

Through these policies and procedures, you should seek to maintain, enhance, or restore conditions for Greater Sage-Grouse and its habitat. These policies and procedures apply to PPH only. Separate policies and procedures for PGH are provided in Section II of this IM.

Integrated Vegetation Management

Proposed Authorizations/Activities

- Evaluate land treatments (including Greater Sage-Grouse habitat treatments) in a landscape-scale context to address habitat fragmentation, effective patch size, invasive species presence, and protection of intact sagebrush communities. Coordinate land treatments with adjacent land owners to avoid any unintended negative landscape effects to Greater Sage-Grouse.
- When designing vegetation treatments, reference Ecological Site Descriptions (ESD), where available; the BLM *Integrated Vegetation Management Handbook* (H-1740-2); and a white paper

developed by the Western Association of Fish and Wildlife Agencies entitled, *Prescribed Fire as a Management Tool in Xeric Sagebrush Ecosystems: Is it Worth the Risk to Sage-Grouse?.*

- Coordinate, plan, design, and implement vegetation treatments (e.g., pinyon/juniper removal, fuels treatments, green stripping) and associated effectiveness monitoring between Resources, Fuels Management, Emergency Stabilization, and Burned Area Rehabilitation programs to:

    - Promote the maintenance of large intact sagebrush communities;
    - Limit the expansion or dominance of invasive species, including cheatgrass;
    - Maintain or improve soil site stability, hydrologic function, and biological integrity; and
    - Enhance the native plant community, including the native shrub reference state in the *State and Transition Model*, with appropriate shrub, grass, and forb composition identified in the applicable ESD where available.

- When conducting National Environment Policy Act (NEPA) analysis for vegetation treatments, document your analysis of (1) short- and long-term objectives and (2) direct, indirect, and cumulative effects of treatment types on Greater Sage-Grouse and its habitat.
- Pursue short-term objectives that include maintaining soil stability and hydrologic function of the disturbed site so a resilient plant community can be established.
- Pursue a long-term objective to maintain resilient native plant communities. Choose native plant species outlined in ESDs, where available, to revegetate sites. If the commercial supply of appropriate native seed/plants is limited, work with the BLM Native Plant Materials Development Program (NPMDP) through your respective State Office Plant Conservation Program Lead. It is a primary objective of the NPMDP to ensure native plants used by Greater Sage-Grouse are being collected and developed into commercially viable crops. If currently available supplies are limited, use the materials that provide the greatest benefit for Greater Sage-Grouse. When necessary, analyze the use of non-native species that do not impede long-term reestablishment goals of native plant communities and Greater Sage-Grouse habitat.
- Meet vegetation management objectives that have been set for seeding projects prior to returning the area to authorized uses, specifically livestock grazing. This generally takes a minimum of two growing seasons (see Handbook H-1742, *Emergency Fire Rehabilitation Handbook*). When treating invasive species, use the standard operating procedures and best management practices outlined in the *2007 Vegetation Treatments Using Herbicides on BLM Lands in 17 States Environmental Impact Statement* and applicable practices found in its accompanying *Biological Assessment.*
- Where pinyon and juniper trees are encroaching on sagebrush plant communities, design treatments to increase cover of sagebrush and/or understory to (1) improve habitat for Greater Sage-Grouse; and (2) minimize avian predator perches and predation opportunities on Greater Sage-Grouse.
- Implement management actions, where appropriate, to improve degraded Greater Sage-Grouse habitats that have become encroached upon by shrubland or woodland species.
- Identify opportunities for prescribed fire; including where prescribed fire has been identified as the most appropriate tool to meet fuels management objectives and Greater Sage-Grouse conservation objectives, and the potential expansion or dominance of invasive species has been determined to be minimal through an invasive species risk determination for the treatment project (see BLM Manual Section 9015). Before using prescribed fire, field offices must analyze the potential expansion or dominance of invasive species as a result of this treatment.

Wildfire Emergency Stabilization and Burned Area Rehabilitation

Both Ongoing and Proposed Authorizations/Activities

- In Emergency Stabilization and Burned Area Rehabilitation plans, prioritize re-vegetation projects to (1) maintain and enhance unburned intact sagebrush habitat when at risk from adjacent threats; (2) stabilize soils; (3) reestablish hydrologic function; (4) maintain and enhance biological integrity; (5) promote plant resiliency; (6) limit expansion or dominance or invasive species; and (7) reestablish native species.
- Increase post-fire activities through the use of integrated funding opportunities with other resource programs and partners.
- In areas burned within the past 5 years, ensure that effectiveness monitoring outlined in post-fire stabilization and rehabilitation plans continues and report the results as outlined in WO-IM-2010-195. Post-fire stabilization and rehabilitation monitoring should continue until post-fire objectives

are met.

Wildfire Suppression and Fuels Management

Ongoing Authorizations/Activities

- Threatened, endangered, and sensitive species (including sage-grouse) and associated habitats will continue to be a high natural resource priority for National and Geographic Multi-Agency Coordination Groups, whose purpose is to manage and prioritize wildland fire operations on a national and geographic area scope when fire management resource shortages are probable.
- Greater Sage-Grouse protection and habitat enhancement is a high priority for the fire management program. A full range of fire management activities and options will be utilized to sustain healthy ecosystems (including Greater Sage-Grouse habitats) within acceptable risk levels. Local agency administrators and resource advisors will convey protection priorities to incident commanders.
- Comply with the policies established in WO-IM-2011-138 (Sage-Grouse Conservation Related to Wildland Fire and Fuels Management) or successor guidance, regarding suppression operations and fuels management activities.
- Identify opportunities for prescribed fire; including where prescribed fire has been identified as the most appropriate tool to meet fuels management objectives and Greater Sage-Grouse conservation objectives, and the potential expansion or dominance of invasive species has been determined to be minimal through an invasive species risk determination for the treatment project (see BLM Manual Section 9015). Before using prescribed fire, field offices must analyze the potential expansion or dominance of invasive species as a result of this treatment.

Rights-of-Way (ROW) (e.g., Renewable Energy Projects, Roads, Powerlines, Pipelines)

Existing Authorized ROW (i.e., permit has been issued and the project may have been constructed)

- Where Greater Sage-Grouse conservation opportunities exist, BLM field offices should work in cooperation with rights-of-way (ROW) holders to conduct maintenance and operation activities, authorized under an approved ROW grant, to avoid and minimize effects on Greater Sage-Grouse and its habitat.
- When renewing or amending ROWs, assess the impacts of ongoing use of the ROW to Greater Sage-Grouse habitat and minimize such impacts to the extent allowed by law.

Pending and Future ROW Applications (i.e., permit application has not been received or has been received and is being processed)

- If the BLM has issued or, within 90 days of the issuance of this Instruction Memorandum, the BLM issues a Draft EIS (DEIS) or a Finding of No Significant Impact (FONSI)) (i.e., permit application has been received and is currently being analyzed through an EIS or EA)

    - o Work with applicants to minimize habitat loss, fragmentation, and direct and indirect effects to Greater Sage-Grouse and its habitat.
    - o Determine, in coordination with the respective state wildlife agency, whether the proposed ROW would likely have more than minor adverse effects to Greater Sage-Grouse and its habitat. If the proposed ROW would likely have more than minor adverse effects, then implement the policies and procedures set forth in the section immediately below ("All Other Pending and Future Applications").

- All Other Pending and Future Proposed Applications

    - o Conduct pre-application meetings for all new ROW proposals consistent with the ROW regulations (43 CFR 2804.10) and consistent with current renewable energy ROW policy guidance (WO-IM-2011-061, issued February 7, 2011).

o For pending applications, assess the impact of the proposed ROW on Greater Sage-Grouse and its habitat, and implement the following:

- Ensure that reasonable alternatives for siting the ROW outside of the PPH or within a BLMâ€'designated utility corridor are considered and analyzed in the NEPA document.
- Identify technically feasible best management practices, conditions, etc. (e.g., siting, burying powerlines) that may be implemented in order to eliminate or minimize impacts.

o For ROWs where the total project disturbance from the ROW and any connected action is less than 1 linear mile, or 2 acres of disturbance, develop mitigation measures related to construction, maintenance, operation, and reclamation activities that, as determined in cooperation with the respective state wildlife agency, would cumulatively maintain or enhance Greater Sage-Grouse habitat.
o For ROW applications where the total project disturbance from the ROW and any connected action is greater than 1 linear mile or 2 acres of disturbance, it is BLM policy that where a field office determines that it is appropriate to authorize a ROW, the following process must be followed:

- The BLM will document the reasons for its determination and require the ROW holder to implement measures to minimize impacts to sage-grouse habitat.
- In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (Refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of Greater Sage-Grouse and its habitat.
- Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed ROW and mitigation measures would cumulatively maintain or enhance Greater Sage-Grouse habitat, the proposed ROW decision must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed ROW, then the proposed decision must be forwarded to the Greater Sage-Grouse National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy Team and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed ROW, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.

o Field offices retain the discretion to reject or deny a ROW application, where appropriate, or defer making a final decision on an application until the completion of the LUP process described in the *National Greater Sage-Grouse Planning Strategy* for the affected area.

Leasable Minerals (Energy and Non-energy)

Proposed Leasing (i.e., a lease has not been issued and, therefore, no valid existing rights have been established)

- Solid Mineral Leasing (Coal, Oil Shale, and Non-energy)

Assess the impact to Greater Sage-Grouse and its habitat, and implement the following:

o If the BLM has issued or, within 90 days of the issuance of this Instruction Memorandum, the BLM issues a DEIS or a FONSI;

- Work in cooperation with applicants to minimize habitat loss, fragmentation, and direct and indirect effects to Greater Sage-Grouse and its habitat.
Determine, in coordination with the respective state wildlife agency, whether the

proposed leasing decision would likely have more than minor adverse effects to Greater Sage-Grouse and its habitat. If the proposed leasing decision would likely have more than minor adverse effects, then implement the policies and procedures set forth in the section immediately below ("All Other Proposed Solid Mineral Leasing").

o All Other Proposed Solid Mineral Leasing

It is BLM policy that where a field office determines that it is appropriate to authorize a proposed leasing decision, the following process must be followed:

- The BLM will document the reasons for its determination and implement measures to minimize impacts to sage-grouse habitat.
- In addition to considering opportunities for onsite mitigation, the BLM will consider whether it is appropriate to condition the lease with a requirement for offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation).
- Unless the BLM determines, in coordination with their respective state wildlife agency, that the proposed lease and mitigation measures would cumulatively maintain or enhance Greater Sage-Grouse habitat, the proposed lease must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed lease, then the proposed decision must be forwarded to Greater Sage-Grouse National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed lease, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.
- Exception: New leases may be issued for mine expansion provided the mines will undergo concurrent surface mine reclamation and will result in minimal additional surface disturbance adjacent to an existing operation.

o Field offices retain the discretion to not move forward with a nomination, or defer making a final decision on a leasing nomination until the completion of the LUP process described in the National Greater Sage-Grouse Planning Strategy for the affected area.

- Fluid Mineral Leasing (i.e., oil, gas, and geothermal)

o It is BLM policy that where a field office determines that it is appropriate to authorize a proposed leasing decision, the following process must be followed:

- The BLM will document the reasons for its determination and require the lessee to implement measures to minimize impacts to sage-grouse habitat.
- In addition to considering opportunities for onsite mitigation, the BLM will consider whether it is appropriate to condition the lease with a requirement for offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation).
- Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed lease and mitigation measures would cumulatively maintain or enhance Greater Sage-Grouse habitat, the proposed lease decision must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed lease, then the proposed decision must be forwarded to the Greater Sage-Grouse National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy Team and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed lease, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.

        - Exception: Where drainage is likely or the lands are designated as No Surface Occupancy (NSO) in the existing LUP, the BLM may issue new leases with an NSO stipulation. The NSO stipulation will also have appropriate exception, waiver, and modification criteria. **Note:** A Controlled Surface Use stipulation is not an appropriate substitution for an NSO stipulation.
    - Field offices retain the discretion to not move forward with a nomination or defer making a final decision on a leasing decision until the completion of the LUP process described in the *National Greater Sage-Grouse Planning Strategy* for the affected area.

Authorizations on Existing Leases (i.e., the lease has been issued and valid existing rights have been established)

- Existing Authorizations (i.e., a permit has been issued)

    - Where Greater Sage-Grouse conservation opportunities exist, work in cooperation with operators to minimize habitat loss, fragmentation, and direct and indirect effects to Greater Sage-Grouse and its habitat.
    - Fluid Minerals: Issue Written Orders of the Authorized Officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize effects to Greater Sage-Grouse populations and its habitat.

- Proposed Pending Authorizations (i.e., permit application has not been received or has been received and is being processed)
    - If the BLM has issued or, within 90 days of the issuance of this Instruction Memorandum, the BLM issues a DEIS or a FONSI:
        - Work in cooperation with applicants to minimize habitat loss, fragmentation, and direct and indirect effects to Greater Sage-Grouse and its habitat.
            - Determine, in coordination with the respective state wildlife agency, whether the proposed authorization would likely have more than minor adverse effects to Greater Sage-Grouse and its habitat. If the proposed authorization would likely have more than minor adverse effects, then implement the policies and procedures set forth in the section immediately below ("All Other Proposed Authorizations").

    - All Other Proposed Authorizations

    It is BLM policy that where a field office determines that it is appropriate to issue a proposed authorization, the following process must be followed:

    - Where the BLM has not issued a permit for development, design future conditions or restrictions to minimize adverse effects to Greater Sage-grouse and its habitat (e.g., Best Management Practices (BMP), noise limitations, seasonal restrictions, minimization of habitat fragmentation, improved reclamation standards, proper siting/designing infrastructure, restoring habitat) prior to permit approval. These measures may be in addition to and more protective or restrictive than the stipulations and restrictions identified in approved LUPs, when reasonable (43 CFR 3101.1-2), supported by science, and analyzed through the NEPA process.

      Fluid Minerals: Consider suspending non-producing leases in instances where mitigation would not adequately protect the integrity of Greater Sage-Grouse habitat until the BLM amends or revises the LUPs. Consistently apply protective measures to split estate lands.
    - In areas where Greater Sage-Grouse populations have been substantially diminished, and where few birds remain, include actions in the authorization (e.g., siting/designing infrastructure, hastened habitat restoration) that will minimize habitat loss and promote restoration of habitat when development activities cease.
    - In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of Greater Sage-Grouse and its habitat.
    - For geophysical exploration activities, include seasonal timing limitations and BMPs as permit

conditions of approval to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas.
- Fluid Minerals: Ensure authorizations under Onshore Oil and Gas Order No. 7 (Disposal of Produced Water) consider the potential impacts to Greater Sage-Grouse from West Nile virus and develop appropriate mitigation measures.

Grazing Permit/Leases Issuance/Grazing Management

Grazing can have localized adverse effects on Greater Sage-Grouse habitat depending on the condition of the habitat and the grazing practices used. Depending on design and application, grazing practices can also be used as a tool to protect intact sagebrush habitat and increase habitat extent and continuity which is beneficial to Greater Sage-Grouse and its habitat. Given the potential financial constraints in addressing the primary threats identified by the FWS, enhanced management of livestock grazing may be the most cost-effective opportunity in many instances to improve Greater Sage-Grouse habitat on public lands.

To promote grazing practices that will protect PPH and minimize adverse effects on Greater Sage-Grouse and its habitat, the BLM will implement the following:

Ongoing Authorization Activities

- If periods of drought occur, where appropriate evaluate the season of use and stocking rate and adjust through coordination and annual billings processes.
- Continue to coordinate with other Federal agencies, state agencies, and non-Federal partners. Leverage funding to implement habitat projects and implement the recent Memorandum of Understanding between the BLM, NRCS, FWS, and USFS for enhancing PPH through grazing practices.
- Continue to prioritize use supervision and effectiveness monitoring of grazing activities to ensure compliance with permit conditions and that progress is being made on achieving land health standards.
- Continue to evaluate existing range improvements (e.g., fences, watering facilities) associated with grazing management operations for impacts on Greater Sage-Grouse and its habitat.

Proposed Authorizations/Activities – Permit/Lease Renewal/Issuance

- When several small or isolated allotments occur within a watershed or delineated geographic area, strive to evaluate all of the allotments together. Prioritize this larger geographic area against other PPH areas for processing permits/leases for renewal.
- Coordinate BMPs and vegetative objectives with NRCS for consistent application across jurisdictions where the BLM and NRCS have the greatest opportunities to benefit Greater Sage-Grouse, particularly as it applies to the NRCS's National Sage-Grouse Initiative (http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/farmbill/initiatives/?&cid=steldevb1027671).
- Pursue opportunities to incorporate multiple allotments under a single management plan/strategy where incorporation would result in enhancing Greater Sage-Grouse populations or its habitat as determined in coordination with respective state wildlife agency.
- Where current livestock grazing management has been identified as a causal factor in not meeting Land Health Standards (43 CFR 4180), use the process in WO-IM-2009-007, Process for Evaluating Status of Land Health and Making Determinations of Causal Factors When Land Health Standards Are Not Achieved, to identify appropriate actions.
- Evaluate progress towards meeting standards that may affect Greater Sage-Grouse or its habitat prior to authorizing grazing on an allotment that was not achieving land health standards in the last renewal cycle, and livestock was a significant causal factor. Where available, use current monitoring data to identify any trends (e.g., progress) toward meeting the standards. Where monitoring data are not available or inadequate to determine whether progress is being made toward achieving Land Health Standards, an interdisciplinary team should be deployed as practicable to conduct a new land health assessment. The NEPA analysis for the permit/lease renewal must address a range of reasonable alternatives including alternatives that improve Greater Sage-Grouse habitat.
- If livestock grazing was the cause of not achieving land health standards that have potential to impact Greater Sage-Grouse or its habitat in the last permit renewal cycle, an interdisciplinary team should be deployed as practicable to conduct a new land health evaluation to determine if the allotment is making progress and if livestock grazing remains a casual factor.

- Plan and authorize livestock grazing and associated range improvement projects on BLM lands in a way that maintains and/or improves Greater Sage-Grouse and its habitat. Analyze through a reasonable range of alternatives any direct, indirect, and cumulative effects of grazing on Greater Sage-Grouse and its habitats through the NEPA process:
    - Incorporate available site information collected using the *Sage-Grouse Habitat Assessment Framework**[2]*** when evaluating existing resource condition and developing resource solutions,
    - Incorporate management practices that will provide for adequate residual plant cover (e.g., residual grass height) and diversity in the understories of sagebrush plant communities as part of viable alternatives. When addressing residual cover and species diversity, refer to the ESD and "*State and Transition Model*," where they are available, to guide the analysis.
    - Evaluate and implement grazing practices that promote the growth and persistence of native shrubs, grasses, and forbs. Grazing practices include kind and numbers of livestock, distribution, seasons of use, and livestock management practices needed to meet both livestock management and Greater Sage-Grouse habitat objectives.
    - Evaluate the potential risk to Greater Sage-Grouse and its habitats from existing structural range improvements. Address those structural range improvements identified as posing a risk during the renewal process.
    - Balance grazing between riparian habitats and upland habitats to promote the production and availability of beneficial forbs to Greater Sage-Grouse in meadows, mesic habitats, and riparian pastures for Greater Sage-Grouse use during nesting and brood-rearing while maintaining upland conditions and functions. Consider changes to season-of-use in riparian/wetland areas before or after the summer growing season.
- To ensure that the NEPA analysis for permit/lease renewal has a range of reasonable alternatives:
    - Include at least one alternative that would implement a deferred or rest-rotation grazing system, if one is not already in place and the size of the allotment warrants it.
    - Include a reasonable range of alternatives (e.g., no grazing or a significantly reduced grazing alternative, current grazing alternative, increased grazing alternative, etc.) to compare the impacts of livestock grazing on Greater Sage-Grouse habitat and land health from the proposed action.
    - If land treatments and/or range improvements are the primary action for achieving land health standards for Greater Sage-Grouse habitat maintenance or enhancement, clearly display the effects of such actions in the alternatives analyzed.

Fences (Applicable to all programs)

- Evaluate the need for proposed fences, especially those within 1.25 miles[3] of leks that have been active within the past 5 years and in movement corridors between leks and roost locations. Consider deferring fence construction unless the objective is to benefit Greater Sage-Grouse habitat, improve land health, promote successful reclamation, protect human health and safety, or provide resource protection. If the BLM authorizes a new fence, then, where appropriate, apply mitigation (e.g., proper siting, marking, post and pole construction) to minimize or eliminate potential impacts to Greater Sage-Grouse as determined in cooperation with the respective state wildlife agency.
- To improve visibility, mark existing fences that have been identified as a collision risk. Prioritizing fences within 1.25 miles[3] of a lek, fences posing higher risks to Greater Sage-Grouse include those:
    - On flat topography;
    - Where spans exceed 12 feet between T-posts;
    - Without wooden posts; or
    - Where fence densities exceed 1.6 miles of fence per section (640 acres).[3]

Water Developments (applicable to all programs)
Proposed Authorizations/Activities

- NEPA analysis for all new water developments must assess impacts to Greater Sage-Grouse and its habitat.
- Install escape ramps and a mechanism such as a float or shut-off valve to control the flow of water

in tanks and troughs.
- Design structures in a manner that minimizes potential for production of mosquitoes which may carry West Nile virus.

Special Recreation Permits

Ongoing Authorization/Activities

- Work with permittees to avoid or minimize effects to Greater Sage-Grouse and its habitat.
- Evaluate existing Special Recreation Permits (SRP) for adverse effects to Greater Sage-Grouse and modify or cancel the permit, as appropriate, to avoid or minimize effects of habitat alterations or other physical disturbances to Greater Sage-Grouse (e.g., breeding, brood-rearing, migration patterns, or winter survival).
- Implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with Greater Sage-Grouse habitat objectives as determined by the BLM field office in collaboration with the respective state wildlife agency.

Proposed Authorizations/Activities

- Work with permit applicants to avoid impacts to Greater Sage-Grouse and its habitat.
- It is BLM policy that where a field office determines that it is appropriate to authorize a proposed special recreation permit, the following process must be followed:

  o The BLM will document the reasons for its determination and require the permitee to implement measures to minimize impacts to sage-grouse habitat.
  o In addition to considering opportunities for onsite mitigation, the BLM will consider whether it is appropriate to condition the permit with a requirement for offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation).
  o Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed permit and mitigation measures would cumulatively maintain or enhance Greater Sage-Grouse habitat, the proposed special recreation permit decision must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed special recreation permit, then the proposed decision must be forwarded to the Greater Sage-Grouse National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy Team and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed special recreation permit, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.

- Field offices retain the discretion to not move forward with a special recreation permit application or defer making a final decision on a special recreation permit decision until the completion of the LUP process described in the *National Greater Sage-Grouse Planning Strategy* for the affected area.

Recreation Sites

- Use conservation measures to avoid impacts to Greater Sage-Grouse at existing recreation sites.
- Consider closing recreational sites either seasonally or permanently and restricting traffic to avoid or minimize effects of habitat alterations or other physical disturbances to Greater Sage-Grouse (e.g., breeding, brood-rearing, migration patterns, or winter survival).

Travel Management

Ongoing Authorizations/Activities

- Evaluate authorizations and use and implement seasonal road/primitive road/trail restrictions if continued use would result in habitat alterations or other physical disturbances that impair life history functions of the Greater Sage-Grouse, such as breeding, brood-rearing, migration patterns, or winter survival, as appropriate.
- Place a high priority on closing and reclaiming unauthorized motor vehicle routes.
- Limit and enforce motorized vehicle use to existing or designated roads, primitive roads, and trails and seasons of use to prevent habitat loss or other physical disturbance that impair life history functions of the Greater Sage-Grouse, such as breeding, migration patterns, or winter survival.

Proposed Authorizations/Activities

- Route construction should be limited to realignments of existing or designated routes to enhance other resources only if that realignment conserves or enhances sage-grouse habitat. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then any new road constructed will be built to the absolute minimum standard necessary. No improvement to existing routes will occur that would change route category (i.e., road, primitive road, or trail) or enhance capacity.

Locatable Minerals

Ongoing Authorizations/Activities (i.e., existing operations conducted under a Notice or a Plan of Operations)

- Request that holders of Notices and Plans of Operation modify their operations to avoid or minimize adverse effects on Greater Sage-Grouse and its habitat. Operators must be informed in the request that compliance is not mandatory.

Proposed Authorizations/Activities (i.e., new Notices or Plans of Operation)

- Require that new notices and plans of operation include measures to avoid or minimize adverse effects to Greater Sage-Grouse populations and its habitat. Ensure that new notices and plans of operation comply with the requirements in 43 CFR 3809 to prevent unnecessary or undue degradation. Such compliance may assist in avoiding or minimizing adverse effects to Greater Sage-Grouse populations and habitat.

Salable Minerals

Ongoing Authorizations/Activities (i.e., an authorization has been issued)

- Where valid existing rights exist, work with the holders of authorizations to develop actions such as siting/design of infrastructure, timing of operations, or reclamation standards that will avoid or minimize effects to Greater Sage-Grouse populations and its habitat.

Proposed Authorizations/Activities

- If the BLM has issued or, within 90 days of the issuance of this Instruction Memorandum, the BLM issues a DEIS or a FONSI:

  o Work with applicants to minimize habitat loss, fragmentation, and direct and indirect effects to Greater Sage-Grouse and its habitat.
  o Determine, in coordination with the respective state wildlife agency, whether the proposed authorization would likely have more than minor adverse effects to Greater Sage-Grouse and its habitat. If the proposed authorization would likely have more than minor adverse effects, then implement the policies and procedures set forth in the section immediately below ("All

Other Proposed Authorizations/Activities").

- All Other Proposed Authorizations/Activities

It is BLM policy that where a field office determines that it is appropriate to issue an authorization, the following process must be followed:

o The BLM will document the reasons for its determination and implement measures to minimize impacts to sage-grouse habitat.
o In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of Greater Sage-Grouse and its habitat.
o Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed pit and mitigation measures would cumulatively maintain or enhance Greater Sage-Grouse habitat, the proposed pit authorization decision must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed authorization, then the proposed decision must be forwarded to the Greater Sage-Grouse National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy Team and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed authorization, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.
o Exception- Pit Expansion Only: New permits may be issued for pit expansion, provided there are no adverse effects on Greater Sage-Grouse and its habitat.

- Field offices retain the discretion to not move forward with an authorization, where appropriate, or defer making a final decision on regarding an authorization until the completion of the LUP process described in the *National Greater Sage-Grouse Planning Strategy* for the affected area.

Grasshopper and Mormon Cricket Control and Management

Proposed Authorizations/Activities

- If grasshopper control is proposed, the NEPA analysis must address impacts on Greater Sage-Grouse and its habitat.
- Continue to implement WO-IM-2010-084, Grasshopper and Mormon Cricket Treatments within Sage-grouse Habitat, and reference WY-IM-2010-12, Greater Sage-Grouse Habitat Management Policy on Wyoming Bureau of Land Management (BLM) Administered Public Lands including the Federal Mineral Estate, for grasshopper or Mormon cricket control.
- Coordinate with local Animal and Plant Health Inspection Service (APHIS) personnel and state wildlife agencies concerning treatments in Greater Sage-Grouse habitat.
- Management actions and operating procedures may include, but are not limited, to the following:

o Evaluate and restrict or modify treatment methods and timing of use or other mitigation.
o Avoid spraying treatment areas in May and June (or as appropriate to local circumstances) to provide insect availability for early development of Greater Sage-Grouse chicks.
o Application timing should be implemented to reduce disturbance and impacts to Greater Sage-Grouse.
o Use approved chemicals with the lowest toxicity to Greater Sage-Grouse that still provide effective control of grasshopper and Mormon cricket. Coordinate with APHIS to determine the approved chemical with the lowest toxicity.
o Evaluate the appropriate percentages of Environmental Protection Agency (EPA) allowable chemical rates and the pros and cons of available chemical use, in coordination with state wildlife agencies, FWS, and APHIS.

o Use *Carbaryl* only when necessary to treat large grasshopper and Mormon cricket populations late in the season. APHIS will coordinate the use with the respective BLM state office prior to any application.
o Implement effectiveness monitoring, if warranted.

Wild Horse and Burro Management

Ongoing Authorizations/Activities

- Manage wild horse and burro population levels within established Appropriate Management Levels (AML).
- Wild Horse Herd Management Areas will receive priority for removal of excess horses.
- Wild horses and burros remaining in Herd Management Areas where the AML has been established as zero will receive priority for removal.
- When developing overall workload priorities for the upcoming year, prioritize horse gathers except where removals are necessary in non-PPH to prevent catastrophic herd health and ecological impacts.

Realty Actions (e.g., Land Exchanges, Transfers, and Sales)

It is BLM policy that where a field office determines that it is appropriate to implement a public land disposal action, the following process must be followed:

- The BLM will document the reasons for its determination and implement measures to minimize impacts to sage-grouse habitat. Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed land disposal action would cumulatively maintain or enhance Greater Sage-Grouse habitat, the proposed land disposal action must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed land disposal action, then the proposed decision must be forwarded to the Greater Sage-Grouse National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy Team and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed land disposal action, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.
- Exception: Those land disposal actions (e.g., the BLM's acceptance of an Application for Land for Recreation and Public Purposes, Publication of a Federal Register Notice of Realty Action, Execution of an Agreement to Initiate an Exchange, the BLM's acceptance of a State Application for Selection) initiated prior to or if the BLM is within 90 days of the issuance of a DEIS or FONSI for a land disposal action following the date of this IM.

Vegetation and Resource Monitoring

Ongoing Authorizations/Activities

- Continue to coordinate with NRCS and its contractors to implement the BLM *Landscape Monitoring Framework Project* developed under the *Assessment, Inventory and Monitoring Strategy* to assess the condition of public lands including PPH at a landscape level.
- Continue to work with livestock grazing permittees/lessees to collect specific kinds of monitoring information on their allotments to supplement monitoring information collected by the BLM (refer to WO-IB-2010-015, Grazing Permittee - Joint Cooperative Monitoring, for additional information).
- Until further direction is provided, and within the range of the Greater Sage-Grouse, the Wildlife Program (1110) will collect, consolidate, and report the following annually to the Division of Fish and Wildlife Conservation (WO-230):

o Miles, acres, and/or number of structures (e.g., fences, water developments, well pads, gravel pits, roads) removed, installed, relocated, decommissioned, modified, or mitigated to benefit Greater Sage-Grouse and its habitat;

o Number of BLM use authorizations issued or deferred and the associated acres where changes in management were implemented to benefit Greater Sage-Grouse and its habitat;
o Acres where the BLM implemented changes in use in order to improve habitat for the Greater Sage-Grouse in cooperation with other Federal or state agencies;
o Acres of habitat altered by wildland fire, acres treated after fire, and acres not treated after fire that were in need of treatment;
o Acres of habitat altered by fuels treatment projects and how those treatments affected habitat;
o Acres of vegetation treated to benefit Greater Sage-Grouse habitat; and
o Number of allotments assessed for land health standards and the associated acres, according to Table 7A of the *Rangeland Inventory, Evaluation and Monitoring Report*.

Proposed Authorizations/Activities

- New activity plans and/or project plans must include clear objectives to benefit Greater Sage-Grouse habitat and vegetative resource conditions. Base these vegetative objectives on (1) the native shrub reference state as shown in the *State and Transition Model* outlined in the applicable ESD, where available; (2) published scientific habitat guidelines for specific areas; and (3) local sage-grouse working group recommendations.
- Monitor activities and projects using the BLM core indicators and protocols (see the BLM *Assessment, Inventory and Monitoring Strategy*) to ensure that the objectives are being met. Supplement data collection, as necessary, with other programmatic information for the site to demonstrate that objectives are being met.
- Complete habitat inventories/assessments using the *Sage-Grouse Habitat Assessment Frameworkin* a timely manner so that data are available for consideration in livestock grazing permit renewals and other management decisions.
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II. Interim Conservation Policies and Procedures for "Preliminary General Habitat"

The intent of these interim conservation policies and procedures in PGH is to reduce and mitigate adverse effects on Greater Sage-Grouse and its habitat to the extent practical. These policies and procedures differ from those applied to PPH.

- When approving uses and authorizations, consider and analyze management measures that would reduce direct, indirect, and cumulative adverse effects on Greater Sage-Grouse and its habitat. For example, consider alternatives that would increase buffer distances around active leks and timing restrictions within existing LUPs as needed to further reduce adverse effects on Greater Sage-Grouse and its habitat.
- Consider deferring authorizations in PGH where appropriate, depending on local characteristics, new science and/or data (e.g., migratory corridors or habitat between PPH), and relative habitat importance if authorizations could result in Greater Sage-Grouse population loss in PPH.
- Consider offsite mitigation measures in collaboration with state wildlife agencies and project proponents when authorizing activities.
- Evaluate and address anticipated fence collision risks within 1.25 miles[3] of leks and other seasonal habitats. Where NEPA analysis suggests that a deviation from this distance is warranted, modifications of this distance are acceptable.

Timeframe: This IM is effective immediately and will remain in effect until the BLM completes the LUP process described in the *National Greater Sage-Grouse Planning Strategy*.

Budget Impact: This IM will result in additional costs for coordination, NEPA review, planning, implementation, and monitoring.

Background: In March 2010, the FWS published its petition decision for the Greater Sage-Grouse as "Warranted but Precluded." Inadequacy of regulatory mechanisms was identified as one of the major factors in the FWS's finding on Greater Sage-Grouse. The FWS has identified the principal regulatory mechanism for the BLM as protective measures embedded in LUPs. The BLM is identifying sage-grouse

conservation measures for consideration through the planning process, with a target decision date of September 2014. The goal is to conserve habitat necessary to sustain Greater Sage-Grouse populations and reduce the likelihood of listing under the Endangered Species Act.

In July 2011, the BLM announced the *National Greater Sage-Grouse Planning Strategy* which provides a framework for establishing adequate regulatory mechanisms (conservation measures) in applicable BLM LUPs throughout the range of the Greater Sage-Grouse.

Manual/Handbook Sections Affected: None.

Coordination: This IM was coordinated with the Office of National Landscape Conservation System and Community Partnership (WO-400), Assistant Director, Renewable Resources and Planning (WO-200), Minerals and Realty Management (WO-300), Fire and Aviation (FA-100), BLM state offices, FWS, and state wildlife agencies.

Contact: State Directors may direct any questions or concerns to Edwin Roberson, Assistant Director, Renewable Resources and Planning (WO-200), at 202- 208-4896 or **eroberso@blm.gov**, and Michael D. Nedd, Assistant Director, Minerals and Realty Management (WO-300), at 202-208-4201 or **mnedd@blm.gov**.

Signed by:
Mike Pool
Acting, Director

Authenticated by:
Ambyr Fowler
Division of IRM Governance, WO- 560

1 Attachment
1-Definitions (2 pp)

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[1] Doherty, K. E., J.D. Tack, J.S. Evans and D. E. Naugle. 2010. Mapping breeding densities of Greater Sage-Grouse: A tool for range-wide conservation planning. BLM Completion Report: Interagency Agreement # L10PG00911.

[2]Stiver, S.J., E.T Rinkes, AND D.E. Naugle. 2010. Sage-grouse Habitat Assessment Framework. U.S. Bureau of Land Management. Unpublished Report. U.S. Bureau of Land Management, Idaho State Office, Boise, Idaho.

[3] Stevens, B.S. 2011. Impacts of Fences on Greater Sage-Grouse in Idaho: Collision, Mitigation, and Spatial Ecology (Master's Thesis). University of Idaho, Moscow, Idaho.