

CHAPTER 27: REGULATORY MECHANISMS

The lack of sufficient regulatory mechanism can negatively affect a species or its habitat by failing to limit or restrict other threats from continuing or emerging. Conversely, regulatory mechanisms can be a powerful means to reduce or eliminate some threats (e.g., anthropogenic habitat disturbance). In our 2010 warranted finding, we concluded that existing regulatory mechanisms were inadequate to protect the species; and that the absence of adequate regulatory mechanisms was a significant threat to the species at that time, and in the foreseeable future. Below we examine the current regulatory landscape for sage-grouse and highlight the changes in regulatory mechanisms since 2010.

Local Laws and Regulations

Approximately 33 percent of the modeled breeding distribution within the sage-grouse range are privately owned (Table 1-3) and are subject only to local or state regulations unless Federal actions are associated with the property (e.g., wetland modification, Federal subsurface owner). We contacted State and local working group contacts from across the range of the species to identify local regulations that may provide protection to the greater sage-grouse. While sage-grouse were mentioned in some zoning regulations as an important resource that should be protected (e.g., Washington County, ID), none of the regulations provided specific and enforceable limitations on disturbance of sage-grouse or their habitat.

State Laws and Regulations

State agencies directly manage approximately 5 percent of the sage-grouse's current range (Table 1-2) and approximately 5 percent of the modeled breeding habitat distribution (Table 1-3). State laws and regulations provide the States with broad authorities to regulate and protect wildlife on all lands within the state and to conserve sage-grouse on state-owned lands. Further, by regulating specific threats, some state regulations may also address or help reduce threats to sage-grouse.

State General Wildlife Protection Laws

All States across the range of sage-grouse have laws and regulations that provide for the general protection, conservation, propagation, management and use of wildlife regulate taking of wildlife, including sage-grouse (see Connelly *et al.* 2004, pp. 2-2 through 2-11; and, Stiver 2011, p. 37). While these statutes limit direct taking of sage-grouse, none provide specific and binding protections for sage-grouse habitat. Additionally, the Governors of each state can change the interpretation and directions of these general state wildlife laws and regulations. Therefore, these regulations provide limited protection to sage-grouse and its habitat.

Many states have laws to list and protect threatened and endangered species, but these laws vary in their statutory provisions to protect species from threats (George and Snape 2010, pp. 345–346). Sage-grouse are listed as a threatened species by the State of Washington under the authorities of RCW 77.12.020. Threatened status in Washington means that a species cannot be

hunted (WAC 232-12-011) and also requires the State to develop a recovery plan, which must include target population objectives, criteria for reclassification, an implementation plan, and a monitoring plan (WAC 232-12-297). However, implementation of recovery plan actions is discretionary and subject to funding.

Several states list the sage-grouse as a “species of concern,” (e.g., Montana) or “species of special concern (e.g., California, South Dakota), but these are administrative designations and do not afford any substantive regulatory protections.

State Sage-grouse Hunting Regulations

Management of hunting season length and bag limits varies widely between States (see **Recreational Hunting** chapter). States maintain flexibility in hunting regulations through emergency closures or season changes in response to unexpected events that affect local populations. For example, in areas where populations are in decline or threats such as WNV have emerged, some States have implemented harvest reductions or closures (see **Recreational Hunting** chapter). As discussed in more detail under the **Recreational Hunting** chapter, 8 of the 11 States with sage-grouse had open hunting seasons for sage-grouse in 2014, with hunting prohibited in Washington, South Dakota, North Dakota, and Canada (Aldridge and Brigham 2003, p. 25; Connelly *et al.* 2004, p. 6-3; Stinson *et al.* 2004, p. 1). In 2014, Montana closed hunting of sage-grouse across much of the State and reduced the length of the hunting season to respond to population decreases (Montana Fish, Wildlife and Parks 2014, p. 5). South Dakota closed its hunting season for sage-grouse in 2013 and 2014.

State Noxious Weed Laws

Some state regulations require that landowners control noxious weeds on their property, but designations of noxious weeds and the development of noxious weed lists vary by State. For example, only five states list medusahead as a noxious, regulated weed, but the grass is problematic in at least two additional states. Similarly, despite the proliferation of cheatgrass across the range of the sage-grouse, Colorado is the only western State that recognizes the grass as a noxious weed (USDA 2009; USDA/ARS 2015, p. 2). Therefore, state regulations that address noxious weeds may help reduce impacts to sage-grouse in local areas, but large-scale control of the most problematic invasive plants is currently unfeasible and uncoordinated, while rehabilitation and restoration techniques are mostly unproven and experimental (Pyke 2011, p. 543; Ielmini *et al.* 2015, pp. 2–3; see **Invasive Plants** chapter).

State Sage-grouse Conservation Plans

Following the 2010 warranted but precluded finding, the Secretary of the Interior and Governor Matt Mead of Wyoming co-hosted a meeting in Cheyenne, Wyoming, which was attended by eight States within the range of the sage-grouse. Following that meeting the Secretary of the Interior sent letters to each of the 11 Governors within the range of the sage-grouse asking them to provide a representative to a Sage-grouse Task Force which would be charged with developing “a report and recommendations on how we can best move forward with a coordinated multi-state national conservation Sage-Grouse plan.” Since 2010, all States except California

have drafted, finalized, or implemented conservation plans for the sage-grouse, and 6 of the 10 plans have or would have regulatory mechanisms to address threats to the sage-grouse. Below we provide a summary of conservation plans and regulatory mechanisms in each state. Within each chapter in the *Impact Analysis* section, we discuss state regulations and conservation plans that address the subject threat.

Table 27-1 summarizes the status of the state conservation plans and their corresponding regulatory mechanism, if any, in each State. The plans apply to a variety of landownership types within each state, such as all lands in Wyoming and Colorado, but only State lands in Washington and Idaho (Table 27-1). Similarly, there is a diversity of completion, implementation, and regulatory mechanisms between the state plans. For instance, Utah and Wyoming are the only states who have completed and implemented their conservation plans, and both plans include regulatory mechanisms. Wyoming's plan applies to all lands in the state across approximately 6 million ha (15 million ac), but the regulatory mechanisms in Utah's plan apply only on Federal lands and it is completely voluntary on private lands. State plans in Colorado, South Dakota, and Washington are complete and being implemented, but the plans only provide conservation measures and recommendations and do not have specific regulatory mechanisms that address threats to sage-grouse. Conversely, state plans in Idaho, Montana, and North Dakota are complete, with regulatory components in Idaho and Montana, but the plans have not been implemented. Finally, state plans in Oregon and Nevada would include regulatory mechanisms, but these plans are currently under revision.

Table 27-1. Summary of State Conservation Plans and Regulations: Applicable lands, implementation status, and regulatory components.

MZ(s)	State	Applicable Lands	Acres Covered	State Plan Status	Regulatory Nature
I, II, IV	Wyoming	All lands	15,000,000	Complete and Implemented	Regulatory
II, III, IV	Utah	All lands within the Sage Grouse Management Areas (SGMAs)	7,500,000	Complete and Implemented	Only Regulatory for certain State actions and on some State lands
II, VII	Colorado	All lands	3,855,841	Complete and Implemented	Non-Regulatory
I	South Dakota	All lands	982,834	Complete and Implemented	Non-Regulatory
VI	Washington	State lands	4,864,020	Complete and Implemented	Non-Regulatory
IV	Idaho	All lands	2,400,000	Complete, Not Implemented	Regulatory on State lands, but voluntary on private lands
I, II, IV	Montana	State lands; private lands where a State authorization is required.	2,400,218	Complete, Not Implemented	Regulatory, but not yet implemented
I	North Dakota	All lands	416,000	Complete, Not Implemented	Non-Regulatory
II, IV, V	Nevada	All Sage-Grouse Management Area	48,627,071	Incomplete, Not Implemented	Regulatory, but not yet complete

MZ(s)	State	Applicable Lands	Acres Covered	State Plan Status	Regulatory Nature
(SGMA) lands					
IV, V	Oregon	All lands	15,000,000	Incomplete, Not Implemented	Regulatory, but not yet complete or implemented
V	California	-	-	State Plan has not been developed	-

Wyoming

In 2011, the Governor of Wyoming updated and re-signed the 2008 Executive Order that mandates that all State lands within sage-grouse Core Population Areas receive special management (State of Wyoming 2008, entire). The Wyoming Governor's Sage-Grouse Implementation Team (SGIT) identified Core Population Areas in Wyoming, which are important breeding areas for sage-grouse with the most productive populations and habitats that meet all of the bird's life history needs. The SGIT is a broad stakeholder group with statutory authority from the Wyoming State Legislature to oversee the implementation of the Governor's Executive Order. The Executive Order mandated the protection of sage-grouse within and codified the boundaries of the Core Population Areas.

Using the Executive Order and the Core Population Areas as its foundation, Wyoming's Core Populations Area Strategy uses a proactive, avoidance and minimization approach to maintain a viable and connected set of sage-grouse populations in Wyoming. The Core Population Area strategy addresses habitat loss, habitat fragmentation, and the inadequacy of regulatory mechanisms. Wyoming's State Legislature adopted a joint resolution endorsing the Executive Order and the Core Populations Area Strategy in 2010. The 2011 Executive Order expires on August 18, 2015, at which time the Governor of Wyoming will reevaluate all of its provisions. The Service is collaborating with the SGIT and other entities to review and refine ongoing activities in the core areas, as well as the size and location of the Core Population Areas themselves to ensure that the integrity and purpose of Wyoming's Core Population Area strategy is maintained. Additionally, the BLM and USFS in Wyoming are modifying their land use plans so that they align closely with Wyoming's Core Population Area Strategy.

In addition to identifying Core Population Areas, the SGIT also recommended that stipulations should be placed on development activities to ensure that existing habitats within the Core Population Areas maintain their function. Accordingly, Wyoming's Executive Order uses occupancy, seasonal, noise, buffer, mitigation, and monitoring stipulations to permit development in Core Population Areas as long as it do not cause sage-grouse population declines in these areas. These stipulations guide and regulate development within the Core Population Areas to first avoid, then minimize, and if necessary, mitigate impacts to sage-grouse. These Core Area protections apply to 23.6 percent of all State lands in Wyoming, but account for approximately 83 percent of the total estimated sage-grouse breeding population in the State.

Wyoming's Core Population Area strategy uses interagency coordination and a Density Disturbance Calculation Tool (DDCT) to monitor and track development and conservation activities across the Core Population Areas. The DDCT is an enforceable regulatory

mechanism that ensures that state agencies use existing science and research to adopt and implement necessary and appropriate conservation measures to achieve conservation objectives for sage-grouse. This process helps determine whether a proposed development would fall within the Executive Order's thresholds and can proceed without impacting sage-grouse. Project proponents must first thoroughly describe their projects and any potential effects on sage-grouse from their activities before submitting their application for state or Federal permit. The DDCT spatially calculates both the average density of disruptive activities, the total surface disturbance area within the action area, and proximity to Core Population Areas and occupied leks. Proposed activities are then evaluated within the context of the maximum allowable disturbance to sage-grouse habitat within the assessment area. The DDCT improves the evaluation and siting of proposed projects, but if a project cannot meet the Executive Order's thresholds, the permitting agency may deny the permit. If a development project in a Core Population Area conforms to the stipulations outlined by the executive order and the DDCT, it is considered sufficient to demonstrate that the activity will not cause sage-grouse population declines.

Wyoming's Executive Order also applies to all activities that require permits from Wyoming's Industrial Siting Council (ISC), including wind power developments on all lands regardless of ownership in the State of Wyoming. Developments that are not on State land and that do not reach a certain economic threshold, such that an ISC permit is not needed, will not be required to follow the stipulations of the Executive Order. The application of the Governor's order to the Wyoming ISC provides significant regulatory protection for sage-grouse from adverse effects associated with wind energy developments and other developments.

On August 7, 2009, the Wyoming State Board of Land Commissioners voted to withdraw approximately 400,000 ha (approximately 1 million ac) of land within the sage-grouse core areas from potential wind development (State of Wyoming 2008, entire). The withdrawal order states that "there is no published research on the specific impacts of wind energy on sage-grouse," and further states that permitting for wind development should require data collection on the potential effects of wind on sage-grouse. Wind energy development is not allowed in Core Population Areas. Since 2007, Wyoming denied 27 lease applications for wind development on state trust lands due to this restriction in Core Population Areas. Additionally, proposed transmission lines must follow approved corridors that avoid and minimize impacts to sage-grouse. These actions demonstrate a significant action by the State of Wyoming to address future development activities in the Core Population Areas.

Wyoming's executive order does allow oil and gas leases on State lands within core areas, provided those developments adhere to required protective stipulations, which are consistent with published literature (e.g., 1 well pad per section). Since 2006, the number of coal bed methane wells declined by 80 percent and permits for single wells declined by 65 percent. At the same time, permits for directional and horizontal drilling permits, which congregate disturbance from multiple wells in one area, increased by 66 and 65 percent respectively. Fewer wells are permitted inside Core Population Areas, approximately 1,000, while drilling outside the Core Population Areas has nearly doubled (Wyoming Oil and Gas Commission 2015, p. x). The Service believes that the core area strategy proposed by the State of

Wyoming in Executive Order 2008-2, if implemented by all landowners via -regulatory mechanisms, would provide adequate protection for sage-grouse and their habitat in that State.

The protective measures associated with the Governor's order do not extend to lands located outside the identified core areas but that are still within occupied sage-grouse habitat. Where a siting permit is needed, the application is *de facto* applied to all landownerships as the Wyoming ISC cannot issue a permit without the protective stipulations in place. In non-core areas, the minimization measures would be implemented that are intended to maintain habitat conditions such that there is a 50 percent likelihood that leks will persist over time (WGFD 2009, pp. 30–35). This approach may result in adverse effects to sage-grouse and their habitats outside of the core areas (WGFD 2009, pp. 32–35).

State agencies in Wyoming are bound by the Governor's executive order and are required to report annually on their actions. Federal partners have adopted regulatory mechanisms that are consistent with Wyoming's state conservation plan and often report annually on their actions to also meet the order's standards. Because all State agencies are required to meet the standards of the conservation plan and the executive order, Wyoming uses the DDCT as an analysis tool to ensure biological consistency between agencies at the local, state, and Federal levels. All agencies and project proponents in Wyoming use the DDCT to determine a proposed project's compliance with the conservation plan's standard protections. Over the past five years, the Wyoming Game and Fish Department (WGFD) implements the DDCT, analyzes each proposed project, and recommends whether the project design should change or the project should be approved or denied. Although the WGFD does not have the direct authority to approve or deny permits, project proponents are required to consult on their activities, and other State and Federal agencies have consistently applied the conservation plan's stipulations and restrictions. In 2012, of 244 potential permits reviewed by the WGFD, 143 (59 percent) initially complied with the order's standards. During the consultation process, the remaining 101 projects (41 percent) were either withdrawn or redesigned to comply with the DDCT's 5 percent disturbance threshold. Often, many projects unable to comply with the order's guidelines for Core Population Areas are abandoned.

Wyoming's state conservation plan and corresponding Executive Order are complete and have been implemented since 2008. The Executive Order regulates the conservation of sage-grouse on all lands in Wyoming across approximately 6 million ha (15 million ac) and protects approximately 83 percent of the total estimated breeding population of sage-grouse. Through its existing regulatory mechanisms, Wyoming's plan reduces impacts to sage-grouse associated with agricultural conversion, infrastructure, energy development, mining, and the removal of sagebrush.

Utah

Utah issued a final conservation plan for the sage-grouse on February 14, 2013, and the Governor of Utah's Executive Order (EO/2015/002) mandated its implementation on February

25, 2015. Utah's conservation plan and Executive Order includes regulatory mechanisms aimed at addressing impacts to sage-grouse associated with fire, infrastructure, noxious weeds, conifer encroachment, recreation, energy development, mining, and the removal of sagebrush. Utah's state conservation plan applies to all lands within the state's 11 Sage-Grouse Management Areas (SGMAs) across approximately 3 million ha (7.5 million ac), but many of its protections are voluntary and apply only to State actions or State lands.

Before the Governor issued his Executive Order, the mechanisms in Utah's conservation plan did not have regulatory authority and only applied to State lands within the SGMAs. Furthermore, protective mechanisms identified within Utah's conservation plan were entirely voluntary on private, local government, and Utah's School and Institutional Trust Administration (SITLA) lands. The Governor's Executive Order clarified several of the regulations in Utah's conservation plan and enforced their applicability for some activities on private and other lands. Most notably, the Executive Order includes a requirement that the Utah Division of Oil Gas and Mining (UDOGM) coordinate with the Utah Division of Wildlife Resources (UDWR) before issuing permits for energy development. The Executive Order further directs UDOGM to implement recommendations provided by UDWR that could require avoidance and minimization measures on state and private lands consistent with the conservation plan. However, these measures are subject to the statutory requirements to protect rights on private property and avoid waste of the mineral resource. Additionally, the Executive Order requires that the Utah Division of State Parks, Department of Agriculture, Division of Forestry, Fire and State Lands, and Department of Transportation coordinate with the UDWR to ensure consistency with the state plan on projects that could impact sage-grouse or their habitat. This improves the ability of Utah's conservation plan to reduce impacts to sage-grouse associated with wildfire, development, agriculture, and recreation on lands other than just State lands within the SGMAs. The Executive Order also expedited the development and implementation of a conservation banking plan for Utah and prioritized fuels management and mitigation activities to further reduce impacts associated with wildfire and anthropogenic disturbance.

Colorado

Colorado's state conservation plan is complete and has been implemented since 2008 on over 1.5 million ha (approximately 3,855,841 ac) all landownership types. Colorado's state plan is not regulatory, but is instead a voluntary conservation strategy developed to address and promote the conservation of sage-grouse in Colorado. Colorado's plan identifies risk factors and best management practices to minimize potential effects from a variety of activities, identifies key stakeholders, and estimates costs. For example, Colorado's state plan identifies responsible partners, conservation measures, and objectives for communication and coordination to address the threat of noxious weeds and annual grasses on all lands in Colorado. The plan provides similar guidance to address impacts to sage-grouse from agricultural conversion, urbanization, conifer encroachment, and recreation. However, Colorado's plan is purely advisory without regulatory mechanisms.

In 2009, the Governor of Colorado signed into law new rules for the Colorado Oil and Gas Conservation Commission (COGCC), the entity responsible for permitting oil and gas well development in Colorado (COGCC 2009, entire). The rules apply to all lands in Colorado and 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 will be avoided except in cases of economic or technical infeasibility (CDOW, 2009, p. 12). Areas within approximately 6.4 km (4 mi) of an active lek are considered sensitive wildlife habitat (CDOW, 2009, p. 13) and the project proponent is required to consult with Colorado Parks and Wildlife (CPW, formerly the Colorado Division of Wildlife, or CDOW) 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 those effects that cannot be avoided or minimized (COGCC 2009, section 1202.a).

The 2009 Executive Order in Colorado directs the COGCC to consider CPW’s recommendations in the permitting decision, although the COGCC maintains the final permitting and conditioning authority. Under these rules, applicants must consider the conservation needs of the sage-grouse, but the potential decisions, actions, exemptions, and enforcement of conservation measures can vary by project. Further, the rules do not apply to preexisting drilling operations or previously approved but undeveloped leases.

South Dakota

South Dakota completed and began implementing its state conservation plan in 2014. South Dakota’s plan applies to all lands in the state across approximately 397,783 ha (982,834 ac). However, South Dakota’s plan is a voluntary conservation strategy without regulatory mechanisms.

Washington

The Washington Department of Fish and Wildlife (WDFW) published the *Washington State Greater Sage-grouse Recovery Plan* in May 2004. Washington completed and began implementing its state conservation plan in 2004. The Recovery Plan summarized the state of knowledge of sage-grouse in Washington and outlined strategies to increase their population size and distribution, but is non-regulatory. The plan identified a recovery objective to downlist the sage-grouse from State Threatened to State Sensitive when there was an average breeding season population of at least 3,200 birds for a period of 10 years, with active lek complexes in 6 or more Sage-grouse Management Units.

Washington Department of Fish and Wildlife is in the process of drafting a Wildlife Management Area HCP that includes sage-grouse as a covered species. The HCP includes the state owned wildlife area lands and contains measures to minimize or avoid effects to covered species for certain WDFW controlled activities. The draft Douglas County Multiple Species GCP includes best management practices related to agricultural activities, including prescribed

grazing and requirements to maintain native shrub steppe that may help to preserve the sagebrush on covered lands. The Douglas County Multiple Species GCP covers four species, including sage-grouse and the endangered Columbia Basin pygmy rabbit. WDFW and Department of Natural Resources are also pursuing a CCAA with the Service for conservation actions on state lands within high priority sage-grouse habitat areas and will include participation by interested private landowners in Yakima, Grant, Douglas, Kittitas and Lincoln Counties. The CCAA contains conservation measures to minimize or remove threats to sage-grouse and their habitat from certain activities associated with grazing and agriculture. However, all of these efforts are currently incomplete.

Idaho

The Idaho Sage-grouse Advisory Committee developed a *Conservation Plan for the Greater-Sage-grouse in Idaho* in 2006 (Idaho Sage-grouse Advisory Committee 2006). This plan replaced the 1997 Idaho Sage-grouse Management Plan, incorporating new information and provided an overarching scientific and management framework to aid Local Working Groups within the State. The 2006 plan included a host of recommended conservation measures, but these were all non-regulatory.

On March 9, 2012, the Governor of Idaho issued Executive Order 2012-02, which established the Governor's Sage-grouse Task Force. The Task force was a diverse group of stakeholders, charged with providing recommendations on actions for developing a statewide regulatory mechanism "to preclude the need to list the species under the ESA."

On June 15, 2012, the Task Force, aided by the technical expertise of Idaho Department of Fish and Game, the Service, and other Federal and State agencies, delivered its recommendations to the Governor. On September 5, 2012, the Governor published the *Federal Alternative of Governor C.L. "Butch" Otter for Greater Sage-grouse Management in Idaho* (hereafter, Governor's Alternative). The Governor's Alternative was meant to guide management decisions on BLM and USFS land within the State, but also indicated that if this management framework was put in place on Federal lands, "the State will approach willing private parties, local governments, other Federal partners, and the Idaho Department of Lands to see what actions are necessary and appropriate to complement the State's Federal Alternative."

The Governor's Alternative adopted the designation of a Sage Grouse Management Area with three distinct management zones: Core Habitat (CHZ), Important Habitat (IHZ), and General Habitat (GHZ). These designations are intended to guide development, focusing the most protection on the best habitat, or the CHZ and providing greater flexibility on the IHZ and GHZ. The Governor's Alternative builds on the 2006 Sage Grouse Management Plan and focuses on the most urgent threats to the bird's habitat, which is fragmentation due to fire and invasive species. It also includes adaptive management triggers and responses, suggests a mitigation framework, includes emergency provisions for catastrophic wildfire, and describes a grazing management framework. The Governor's alternative is non-regulatory in nature, but formed a co-preferred alternative considered by the BLM and USFS in their LUP revisions and amendments – which are regulatory mechanisms (see ***Federal***

378 ***Regulatory Mechanisms***, below).

379
380 As an outgrowth of the Governor's Alternative, the State Land Board developed a
381 conservation plan for sage-grouse on State endowment trust lands in Idaho. The Idaho Land
382 Board's conservation plan complements and augments the Governor's Plan to conserve the
383 most important habitat for sage-grouse in Idaho. However, implementation of the Land
384 Board's Plan is contingent upon the Federal land manager's acceptance and incorporation of
385 the Governor's Plan in its final decisions on sage-grouse in Idaho. If implemented, the Land
386 Board's Plan will provide regulatory mechanisms on approximately 283,279 ha (700,000 ac)
387 of core and important habitats for sage-grouse in Idaho, which are largely checkerboarded
388 with Federal lands in Idaho (see ***Land Ownership and Management*** section). The key
389 regulatory mechanism in the plan is that on endowment lands, the Idaho Department of
390 Lands will implement sage-grouse Conservation Measures as enforceable stipulations in
391 authorizing documents such as leases, permits, and easements. Conservation Measures
392 include controlled surface use and timing limitations, limits on noise levels near leks,
393 improved grazing practices, and measures to reduce the threat of wildfire and invasive
394 species. For activities that take place on privately owned lands in sage-grouse habitat but
395 involve some Idaho Department of Lands regulatory and assistance functions, conservation
396 measures are presented as voluntary BMPs because the Idaho Department of Lands does not
397 have the statutory authority within its regulatory programs or assistance activities to require
398 that authorized parties adopt them.

400 Montana

401
402 Montana completed a voluntary conservation plan in 2005, which was replaced by the
403 Governor of Montana's Executive Order Creating the Montana Sage Grouse Oversight Team
404 and the Montana Sage Grouse Habitat Conservation Program in September 2014 (EO 10-
405 2014). However, Montana has not fully implemented its conservation program and
406 compliance with the Executive Order is not yet mandatory for State agencies or on State
407 Lands. The Governor is expected to issue a second Executive Order in 2015 that will
408 mandate that all State agencies adhere to the procedures and stipulations in the Executive
409 Order in conjunction with permitting or other authorizations, during consultation, or while
410 providing technical, financial, or other assistance for non-regulated activities. By September
411 2015 the State Land Board is expected to vote on the adoption and application of the
412 program and Executive Order to State Trust Lands, including the adoption of measures to
413 address sagebrush removal, agricultural conversion, and grazing. The Montana State
414 Legislature recently passed, and the Governor signed, staff funding measures that would
415 help implement the conservation program established by the Executive Order. The
416 Governor also signed the Montana Greater Sage-Grouse Stewardship Act, which establishes
417 the Montana Sage-Grouse Oversight Team and provides grant-based funding for voluntary
418 sage-grouse conservation (and potentially mitigation) efforts. However, until the Governor
419 mandates compliance with the Executive Order (expected via issuance of the second
420 Executive Order) and the State Land Board approves the application of the Executive Order
421 on State Trust Lands, Montana's conservation program has not been fully implemented.

423 North Dakota

North Dakota completed its state conservation for sage-grouse in March 2015, but the plan has not been implemented. North Dakota's conservation plan would apply to approximately 168,349 ha (416,000 ac) of all landownership types in the state. The plan would be entirely voluntary and its implementation would rely on partner-led efforts. North Dakota's plan focuses on the successful translocation of sage-grouse into the state to address isolated subpopulations and to slow a downward population trend.

Nevada

On September 26, 2008, the Governor of Nevada signed an Executive Order calling for the preservation and protection of sage-grouse habitat in the State of Nevada. The Executive Order directs the Nevada Department of Wildlife (NDOW) to work with state and Federal agencies and the interested public to implement Nevada's conservation plan for sage-grouse. The Executive Order also directs other State agencies to coordinate with the NDOW in these efforts. Although directed specifically at sage-grouse conservation, the Executive Order is broadly worded and does not outline specific measures that will be undertaken to reduce threats and ensure the conservation of sage-grouse in Nevada.

In June 2013, Nevada's State Legislature approved the Governor's Sagebrush Ecosystem Council, a group that worked to revise and complete Nevada's state plan so that it would avoid, minimize, and mitigate impacts to sage-grouse and their habitats from development activities. The plan revisions would also address wildfire and invasive plants. The Sagebrush Ecosystem Council finalized and approved Nevada's conservation plan in March 2015. If implemented, Nevada's plan would cover all lands within SGMAs across approximately 19,678,677 ha (48,627,071 ac). Although Nevada's plan includes some regulatory mechanisms, such as a requirement that project proponents consult with the SETT to avoid, minimize, and mitigate potential impacts to sage-grouse from their activities, the BLM would be responsible for enforcing these regulations.

Oregon

In 2011, the Oregon Department of Fish and Wildlife (ODFW) completed a significant planning effort with diverse stakeholder involvement and support that resulted in the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon (Hagen 2011; hereafter, Oregon Sage-grouse Plan). This established the biological foundation for long-term conservation of sage-grouse in the state. The primary objective of this plan is to maintain large expanses of intact sagebrush habitat for the benefit of sage-grouse and other sagebrush associated species. The plan also provides guidelines and recommended conservation actions for public land management agencies and other land managers to aid in sage-grouse conservation. The plan is not regulatory, but was designed to form the basis for future regulatory protections.

In 2012, the Oregon Sage-grouse Conservation Partnership (SageCon) was convened at the request of the Governor's office to formulate an "all lands, all threats" (ALAT) approach to sage-grouse conservation. This effort was to provide regulatory assurances in advance of the Service's listing decision in 2015 and support long-term community sustainability in central and eastern

Oregon. The SageCon Partnership seeks to build on the Oregon Sage-grouse Plan by engaging additional stakeholders to coordinate and accelerate implementation of strategic conservation actions and strengthen regulatory mechanisms across land ownerships to alleviate threats to sage-grouse while ensuring sustainable rural economies. The primary product of the SageCon Partnership will be an amendment to the Oregon Sage-grouse Plan for Oregon to: (i) update the status of the species and its habitat conditions; (ii) identify existing conservation measures that have been implemented in Oregon since 2010 to reduce threats to the species; and (iii) formulate new regulatory and voluntary programs the state of Oregon, local governments, and public and private land managers can utilize to establish more predictability and certainty in the permitting process and ensure that mitigation dollars are invested in the highest value sage grouse habitat.

The current ALAT draft is based largely on the 2011 Oregon Sage-grouse Plan, which identifies core areas and focuses on avoiding and minimizing impacts to these habitats. A disturbance cap with a maximum 3 percent anthropogenic disturbance has been proposed and is similar to the BLM proposal (see *Regulatory Mechanisms*, below). The ALAT plan will also include strategies to address fire and invasive species (including conifer encroachment), the biggest threats to sage-grouse in Oregon. Treatment strategies will build on landscape assessments of ecological resilience to disturbance and resistance to invasive species. The final ALAT plan is expected to be completed in August 2015, along with new rules from the Land Conservation and Development Commission (LCDC) and the Oregon Fish and Wildlife Commission (OFWC) applying mitigation requirements to land use decisions on sage-grouse habitat. Up to now, ODFW's mitigation policy has largely been advisory, with requirements only binding on projects permitted by the Energy Facility Siting Council.

Oregon's conservation plan would apply to over 6 million ha (approximately 15 million ac) of all landownership types and would include regulatory mechanisms, such as disturbance caps and adaptive management triggers, to reduce impacts to sage-grouse in the State. Although the plan would include regulatory mechanisms beneficial to sage-grouse conservation, they have yet to be finalized or implemented.

California

California does not have a State Sage-grouse Conservation Plan. California recognizes sage-grouse as a State-species of special concern that should be considered during the State's environmental review process. The California Environmental Quality Act (CEQA)(Public Resources Code sections 21000–21177) requires that State agencies, local governments, and special districts consider impacts to species of concern from their proposed project. The California Environmental Quality Act (CEQA) requires that project proponents fully disclose potential impacts to the environment from their projects in the State of California. Similar to the National Environmental Policy Act (NEPA), if a project could “reduce the number or restrict the range of a rare or endangered plant or animal,” the CEQA guidelines require that project proponents find a significant impact (CEQA Section 15065). Under these guidelines sage-grouse receive the same protections as a State-listed species. However, the lead State agency for the proposed project has the discretion to decide whether to require mitigation for resource impacts, or to determine that other considerations, such as social or economic factors, make mitigation infeasible (CEQA Section 21002). Therefore, the State may approve projects that

cause significant environmental damage, such as destruction of endangered species, their habitat, or their continued existence, without requiring mitigation. Therefore, CEQA's ability to protect listed species depends on the discretion of the involved agency, so the regulation's ability to reduce potential threats to sage-grouse is limited.

Federal Laws and Regulations

Several Federal agencies have other legal authorities and requirements for managing sage-grouse or their habitat. Federal agencies are responsible for managing approximately 61 percent of the modeled distribution of sage-grouse in the U.S. Two Federal agencies with the largest land management authority for sagebrush habitats are the BLM and USFS, who collectively manage approximately 58 percent of the modeled breeding distribution of sage-grouse. The U.S. DoD, DOE, and other agencies in DOI have responsibility for lands and/or decisions that involve less than 1 percent of the sage-grouse range (Knick 2011, p. 28) and only about 3 percent of modeled greater sage-grouse breeding distribution (see *Land Ownership and Management* section, above).

Bureau of Land Management and U.S. Forest Service

In our 2010 finding we stated that, "Of the existing 92 RMPs that include sage-grouse habitat, 82 contain specific measures or direction pertinent to management of sage-grouse or their habitats (BLM 2008g, p. 1). However, the nature of these measures and direction vary widely, with some measures directed at a particular land use category (e.g., grazing management), and others relevant to specific habitat use categories (e.g., breeding habitat) (BLM 2008h)."

Since 2010, there has been a concerted effort to amend or revise BLM and USFS LUPs (see *Land Ownership and Management* section) to include specific and coordinated direction to conserve sage-grouse and their habitats across their range on BLM and USFS ownership. The BLM and the USFS are in the process of revising or amended 96 LUP within 15 planning areas.¹ (Figure 27-1) to incorporate sage-grouse conservation measures. The conservation measures include both restrictions on land uses and programs that affect sage-grouse, as well as measures to reduce and mitigate impacts arising from BLM and USFS programs and authorized uses. A timeline of important events in the development of a BLM/USFS sage-grouse landscape conservation strategy and LUPs is provided in Table 27-2. Specifics on the regulatory and non-regulatory provisions of these plans in ameliorating certain threats is provided in each Impacts Analysis chapter, and the landscape-scale tenants of these LUPs are summarized below.

¹ In addition to these 96 plans, two additional plans are slated for revision in the near future and are expected to incorporate sage-grouse conservation measures: the BLM plan for Eastern Washington, and the National Forest plan for the Dakota Grasslands.

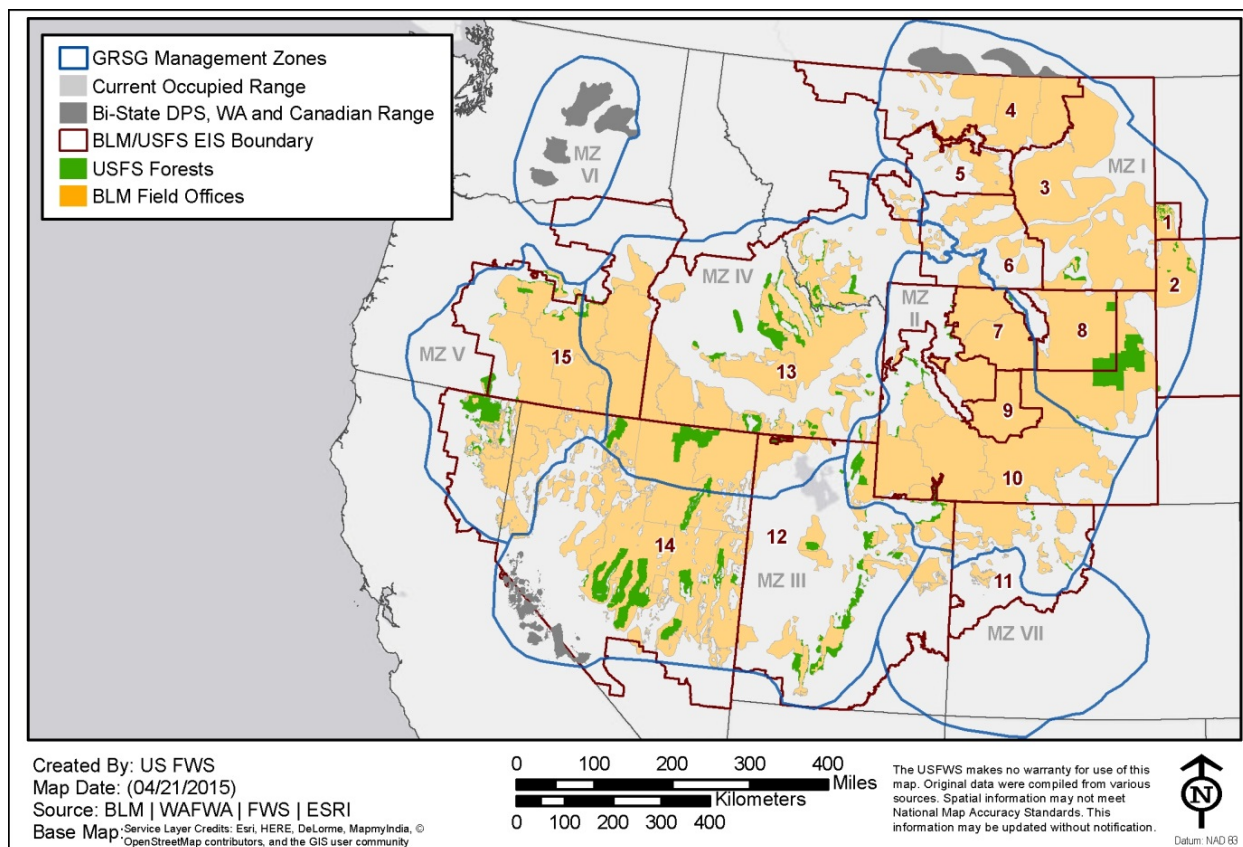


Figure 27-1. BLM and USFS RMP and LRMP planning areas. Portions of the greater sage-grouse range in Washington and the Bi-State area are undergoing separate planning processes.

Table 27-2. Timeline of important events in the development of a rangewide sage-grouse conservation strategy on BLM and USFS lands.

Date	Event
March 23, 2010	FWS issues its 12-month finding indicated listing the greater sage-grouse is warranted, but precluded by higher priority listing actions. One of the key components of that decision was the lack of adequate regulatory mechanisms to conserve sage-grouse.
August 22, 2011	BLM published a planning strategy charter to outline the steps necessary to develop new or revised regulatory mechanisms, through RMPs, to conserve and restore the greater sage-grouse and its habitat on BLM-administered lands on a rangewide basis over the long term ² . This charter established a National Policy Team (NPT), a National Technical Team (NTT), Regional Management Teams (RMT), and other teams and sideboards to lay the groundwork for revising or amending RMPs.
December 9, 2011	BLM and FS issue a joint notice of intent to address sage-grouse in management plans across their range. This included 68 BLM planning areas and 9 FS LRMPs (6 BLM RMPs had already begun a programmatic EIS specific to sage-grouse prior to this NOI; total at this point was 83 planning areas undergoing amendment or revision). The notice indicates that the range will be divided into two broad planning regions, an

² Management Zone VI (Washington State) was left off of this rangewide planning effort given the limited amount of BLM ownership in that area. Planning efforts to include sage-grouse conservation efforts in MZ VI are underway but are scheduled to be completed later than the rest of the BLM planning efforts.

Date	Event
	eastern and western region.
December 21, 2011	The Sage-grouse Technical Team publishes “A Report on National Greater Sage-Grouse Conservation Measures” — also known as the NTT Report. The technical report provided recommended conservation measures for priority habitats for BLM to consider in its planning process.
December 27, 2011	The BLM Washington Office released Instructional Memorandum (IM) 2012-044, which directed all planning efforts across the GRSG range to consider all applicable conservation measures when revising or amending RMPs in GRSG habitat, including measures in the NTT report.
February 10, 2012	The FS adds 11 National Forests to its notice of intent to address sage-grouse in their management plans. This brings the total to 98 planning areas undergoing revision to include sage-grouse conservation measures. BLM renames its eastern and western regions of the sage-grouse planning areas, the Rocky Mountain (eastern) and Great Basin (western) regions.
August 6, 2012	The FS adopts a new National Forest System land management planning rule. Includes a requirement to ensure species’ viability on each of its forests, grasslands, and prairies.
February 22, 2013 May - November 2013	BLM releases Lander (Wyoming) proposed RMP and Final EIS. Draft EISs are published including several alternatives. Includes alternatives proposed by each State, environmental groups, an alternative based on the NTT report, and a BLM/FS alternative that attempts to balance several of the other alternatives.
June 3, 2013	USGS, in cooperation with BLM, publishes the Baseline Environmental Report (BER) for greater sage-grouse. The report summarizes the science, activities, programs, and policies that affect greater sage-grouse and was intended to better inform rangewide conservation planning efforts.
April 26, 2014	The NPT issues direction to all planning areas to incorporate consistent management of preliminary priority and preliminary general habitat for sage-grouse. Includes land-use allocations, monitoring, adaptive management, disturbance calculations, and mitigation.
May 21, 2014	Forest Service publishes a notice of intent to amend the Dakota Prairie Grasslands LRMP to incorporate sage-grouse conservation measures.
October 27, 2014	The FWS sends a letter and maps to the BLM identifying sage-grouse “strongholds.” These were provided at the request of BLM to identify a subset of priority habitats, “most vital to the species persistence” where FWS recommended “the strongest levels of protection.”
November 21, 2014	USGS, at the request of the Department of Interior, publishes a review of conservation buffer distances for greater sage-grouse.
January 30, 2015	The NPT issues planning-area specific direction on development in highly important landscapes (strongholds), mitigation, mapping, calculating disturbance, adaptive management, lek buffers. In addition, the guidance provided several conservation measures to address specific threats.
February 6, 2015	BLM HQ provides “drop-in” language to be included in all plans to ensure consistency in key areas of the planning efforts.
TBD	Final EISs published
TBD	Records of Decision Signed

560
561 The primary regulatory pillars of the landscape-scale strategy developed by BLM and USFS to
562 address sage-grouse conservation are: (1) land-use allocations; (2) vegetation objectives; (3)
563 disturbance caps; (4) lek buffers; (5) monitoring; (6) adaptive management; and (7) mitigation.
564 Another important aspect of their landscape-scale strategy is addressing the threat from fire and

invasives (especially in the Great Basin), but those efforts are largely non-regulatory and are addressed under the *Non-regulatory Conservation Efforts* section, below.

Land Use Allocations

A primary feature of RMPs and LRMPs is that they authorize and establish allowable resource uses on BLM and USFS lands. They may also establish stipulations for certain authorizations to protect resources. The new LUPs were designed specifically to provide additional protections to sage-grouse and their habitats above and beyond existing LUPs.

Management direction in the EISs for amending and revising LUPs is organized by Priority and General Habitat Management Areas (previously called preliminary priority habitat (PPH) and preliminary general habitat (PGH) in some of the draft EISs). Priority Habitat Management Areas contain a large majority of known leks across the range and BLM and USFS determined (in cooperation with partners and referencing PACs identified in the COT Report) that PHMAs have the highest conservation value for maintaining viable sage-grouse populations (Figure 27-2). Therefore, PHMAs will have more stringent protections than GHMAs in the LUPs. Below, we describe the general allowable uses by allocation-type within PGMA and GHMA (see Appendix G for definitions of land use allocation classes). We also describe where there are exceptions and provide a summary of land use allocation changes between 2010 (no action alternative) and the new LUPs.

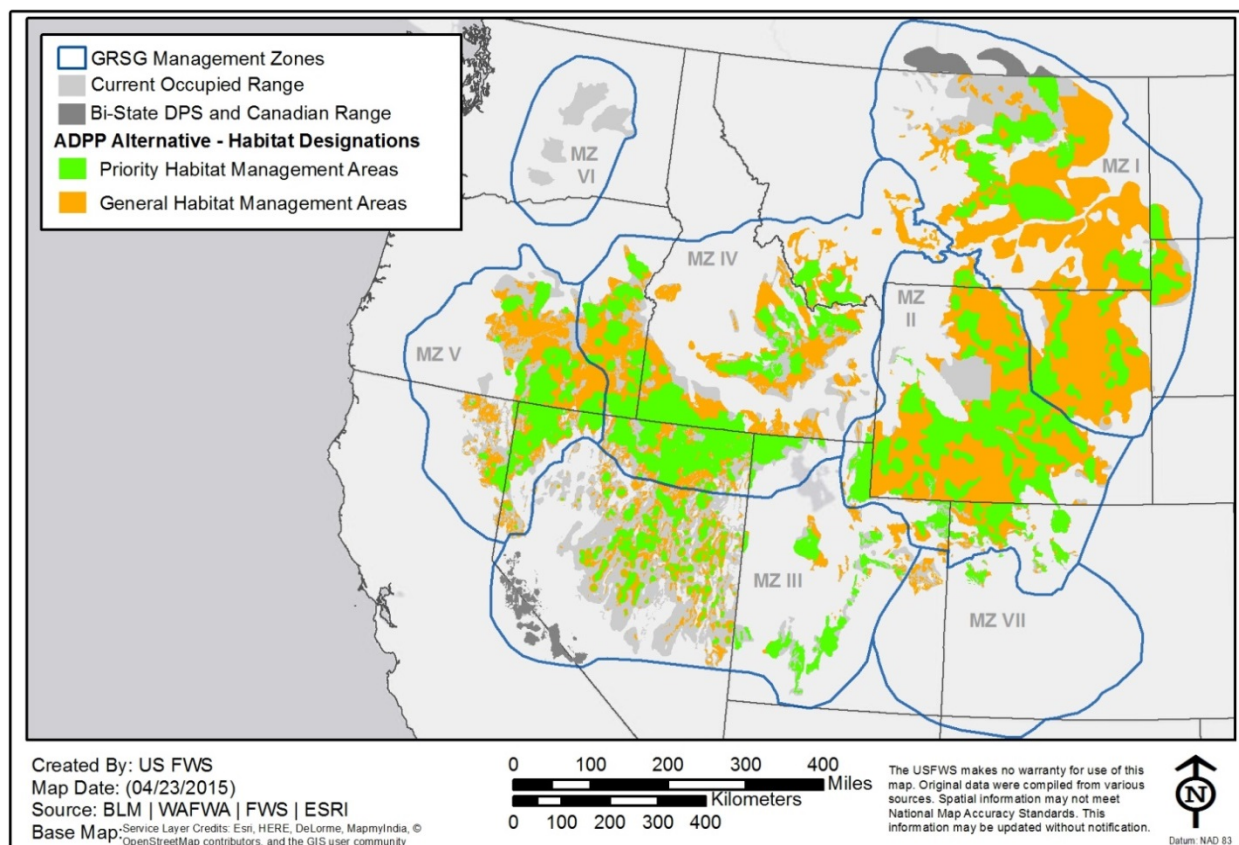


Figure 27-2. Priority and General Habitat Management Areas in BLMs RMPs and USFSs LRMPs. (Note: habitat management areas are shown covering more than just BLM and USFS land due to management of subsurface rights that may exist in other surface ownerships).

In addition to the PHMA and GHMA designations, DOI requested guidance on any further conservation actions that could be implemented by the land management agencies. The Service provided the BLM/USFS a memorandum on October 27, 2014, titled “Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes.” The memorandum and associated maps identified areas representing “strongholds” for sage-grouse that have the highest densities of sage-grouse and other criteria important for the persistence of the species (Figure 27-3). These areas were incorporated into the LUPs as SFAs, and will be managed as PHMA with the following additional management:

- (1) Recommended for withdrawal from the General Mining Act of 1872, subject to valid existing rights.
- (2) Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing. No Surface Occupancy is where areas are open to leasing but surface disturbing activities associated with development of the lease cannot be conducted on the surface of the land. Access to oil and gas deposits would require horizontal/directional drilling from outside the boundaries of the NSO areas.

(3) Prioritized for management and conservation actions in these areas, including, but not limited to review of livestock grazing permits/leases (see Livestock section below for additional actions).

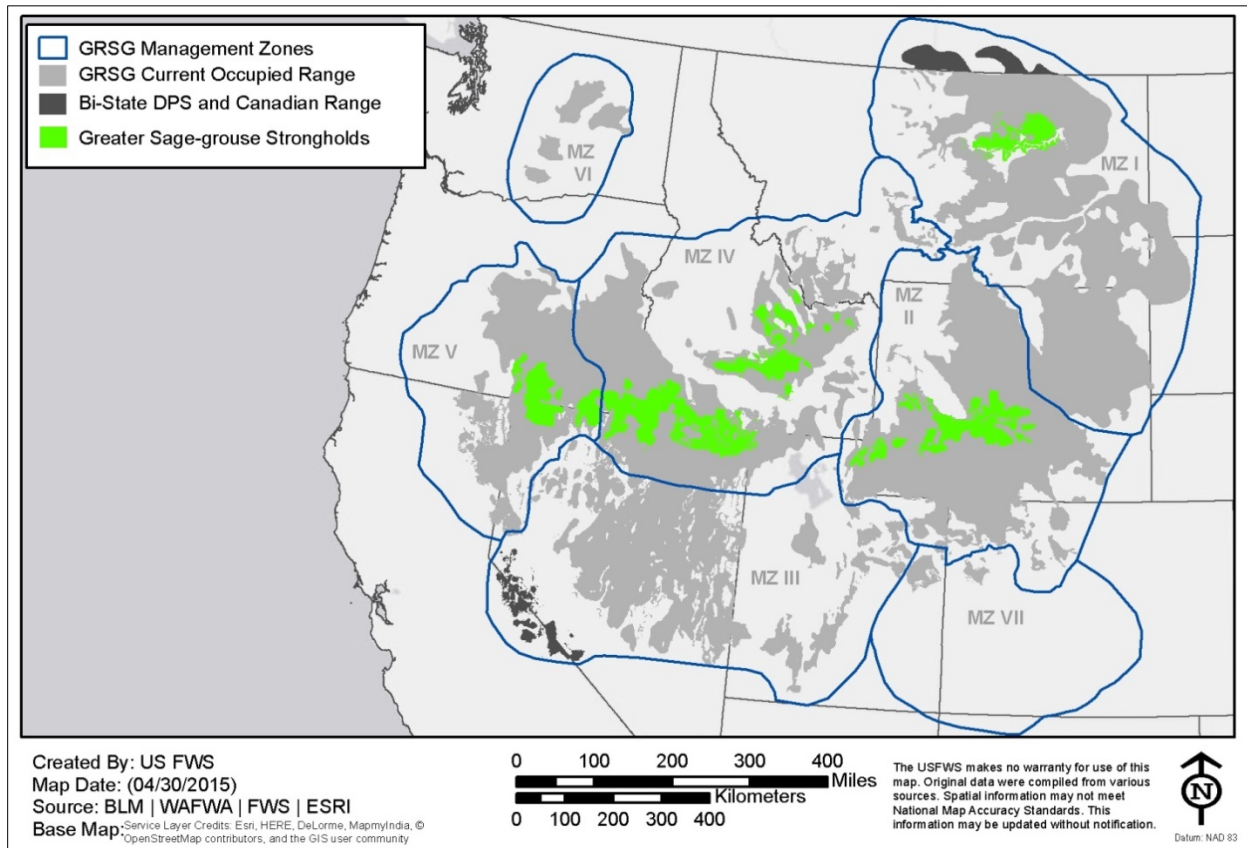


Figure 27-3. Greater sage-grouse strongholds.

Land Tenure

The land tenure allocation refers to whether the BLM or USFS intend to dispose of, or retain, federal lands. Under the new LUPs, PHMAs and GHMAs will be retained in federal management, with limited exceptions, when: (1) the agency can demonstrate that disposal of lands will provide a net conservation gain to the sage-grouse; or (2) the agency can demonstrate that the disposal of lands will have no direct or indirect adverse impact on conservation of sage-grouse. The BLM and USFS LUPs designate over 2.4 million ha (almost 6 million more ac) within the sage-grouse modeled breeding distribution as “retention” over the No Action alternative (Table 27-3), and reduce the amount of land designated for disposal within the modeled breeding distribution by over 300,000 ha (over 750,000 ac) (Table 27-3).

Table 27-3. Land tenure within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)		2015 (ADPP/Final EIS)	
	Retention	Disposal	Retention	Disposal

	Acres	%	Acres	%	Acres	%	Acres	%
I	1,377,862	13.4	196,547	1.9	2,894,127	28.1	26,795	0.3
II	4,817,592	40.5	75,388	0.6	5,802,332	48.7	33,543	0.3
III	6,024,444	71.1	78,134	0.9	7,043,935	83.1	17,757	0.2
IV	5,847,735	50.7	388,651	3.4	7,428,096	64.4	17,018	0.1
V	2,107,370	60.8	34,112	1.0	2,666,971	77.0	12,818	0.4
VI¹								
VII	0	0.0	0	0.0	28,943	17.9	0	0.0
Rangewide²	20,175,002	44.0	772,832	1.7	25,864,403	56.4	107,930	0.2

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Solar/Wind

Right-Of-Way (ROW) grants are required for wind testing or development structures, or solar energy development projects to be erected on public lands. Right-Of-Way requirements are described in the 43 CFR 2800 ROW Regulations. The new LUPs generally exclude new utility scale and commercial solar and wind developments from PHMAs. General Habitat Management Areas are minimally “avoidance” areas with limited exceptions and may be available for location of new utility scale and/or commercial development /ROWs with special stipulations. Limited exceptions must be based on an explicit rationale that biological impacts to sage grouse are being avoided with the exception. In Nevada, California, Utah, and Colorado, the Solar Energy Development Programmatic EIS (BLM 2012) excludes sage-grouse habitat from solar development outside the Solar Energy Zones and variance areas protecting a majority of the habitat areas in these states.

Under the new LUPs, the amount of the sage-grouse modeled breeding distribution open to solar and wind development declined from 14.8 to less than 1 percent and from 42.2 to 5.9 percent, respectively (Tables 27-4 and 27-5).

653 Table 27-4. Solar energy allocations within modeled breeding distribution of greater sage-grouse .

Management Zone	2010 (No Action)						2015 (ADPP/Final EIS)					
	Exclusion		Avoidance Variance		Open Zone		Exclusion		Avoidance Variance		Open Zone	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	29,067	0.3	1,069	0.0	965,251	9.4	1,953,196	18.9	352,289	3.4	40,027	0.4
II	13,706	0.1	5,250	0.0	693,375	5.8	927,795	7.8	11,214	0.1	453	0.0
III	4,781,887	56.4	1,075,340	12.7	287,331	3.4	6,501,649	76.7	366,404	4.3	124,647	1.5
IV	2,689,201	23.3	465,467	4.0	4,176,041	36.2	5,582,947	48.4	1,701,035	14.7	159,674	1.4
V	1,397,333	40.3	596,706	17.2	637,033	18.4	2,012,942	58.1	639,443	18.5	32,974	1.0
VI ¹												
VII	440	0.3	4,934	3.1	23,569	14.6	28,943	17.9	0	0.0	0	0.0
Rangewide²	8,911,634	19.4	2,148,766	4.7	6,782,600	14.8	17,007,471	37.1	3,070,385	6.7	357,775	0.8

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

654

655 Table 27-5. Wind energy allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)						2015 (ADPP/Final EIS)					
	Exclusion		Avoidance		Open		Exclusion		Avoidance		Open	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	122,485	1.2	211,302	2.0	1,523,097	14.8	1,982,472	19.2	873,940	8.5	57,589	0.6
II	348,175	2.9	2,797,883	23.5	3,049,672	25.6	2,178,952	18.3	4,074,793	34.2	667,983	5.6
III	132,053	1.6	12,009	0.1	6,915,346	81.6	3,781,531	44.6	1,611,955	19.0	1,664,037	19.6
IV	822,026	7.1	354,354	3.1	6,276,011	54.4	5,363,570	46.5	1,855,069	16.1	225,880	2.0
V	464,417	13.4	596,468	17.2	1,574,378	45.4	1,788,337	51.6	798,872	23.1	97,421	2.8
VI ¹												
VII	440	0.3	4,934	3.1	23,569	14.6	24,311	15.1	4,037	2.5	594	0.4
Rangewide²	1,889,596	4.1	3,976,950	8.7	19,362,074	42.2	15,119,173	33.0	9,218,666	20.1	2,713,503	5.9

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

656

657 Right-of-Ways

658 LUPs designate existing and potential ROW corridors to minimize adverse environmental
659 impacts and the proliferation of separate ROWs (see 43 CFR 2806). Under the new LUPs,
660 PHMAs are minimally “avoidance” areas with limited exceptions, which must be based on an

explicit rationale that biological impacts to sage-grouse are being avoided with the exception. Existing designated corridors for major transmission lines and pipelines which are land use plan designations (and include Section 368 Corridors), will remain “open” (subject to the ongoing settlement agreement) and can provide an opportunity to be modified with mitigation. Any new disturbance within these corridors would count towards the disturbance cap (except in Wyoming). All new, modified, or deleted corridors will require a land use plan amendment.

For major transmission lines and pipelines, GHMA are minimally “avoidance” areas and may be available for installation of pipeline and transmission lines/ROWs within existing infrastructure. Protective stipulations will be incorporated into the ROW grants to protect sage-grouse and its habitat. However, sub-regions may consider identifying “open areas” (e.g., in areas of mixed ownership, primarily where private and state lands are greater than 50 percent of the total area). For minor ROWs GHMA are “open” and subject to stipulations that will protect sage grouse and its habitat. The LUPs represent a major change from 2010, with approximately 8.5 million ha (over 21 million ac) shifted from “open” for ROWs to “avoidance.” (Table 27-6).

Table 27-6. Rights-of-way allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)						2015 (ADPP/Final EIS)					
	Exclusion		Avoidance		Open		Exclusion		Avoidance		Open	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	98,737	1.0	120,134	1.2	1,541,215	14.9	84,116	0.8	2,614,458	25.4	218,462	2.1
II	185,707	1.6	1,298,221	10.9	5,361,964	45.0	376,163	3.2	5,317,280	44.7	1,231,920	10.3
III	132,053	1.6	12,009	0.1	6,915,346	81.6	134,243	1.6	5,178,254	61.1	1,746,932	20.6
IV	458,198	4.0	559,703	4.8	6,434,495	55.8	458,462	4.0	6,687,734	57.9	294,596	2.6
V	464,417	13.4	596,468	17.2	1,574,378	45.4	464,430	13.4	2,058,260	59.4	157,311	4.5
VI¹												
VII	440	0.3	4,934	3.1	23,569	14.6	440	0.3	27,908	17.3	594	0.4
Range wide²	1,339,552	2.9	2,591,470	5.7	21,850,968	47.6	1,517,855	3.3	21,883,894	47.7	3,649,816	8.0

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Fluid Minerals (Including Geothermal)

The Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended, give the BLM responsibility for oil and gas leasing on BLM, USFS, and other Federal lands, as well as private lands where mineral rights have been retained by the Federal Government. The Geothermal Steam Act of 1970, as amended (84 Stat, 1566; 30 U.S.C. 1001-1025), provides the Secretary of the Interior with the authority to lease public lands (245

million acres) and other federal lands, including USFS lands (78 million ha; 193 million ac), for geothermal exploration and development in an environmentally sound manner. This authority has been delegated to the BLM. The BLM implements the Act through the 43 Code of Federal Regulations (CFR) Part 3200, published in May 2007.

Under the new LUPs, PHMAs are “closed” to new leasing or subject to leasing with NSO. There will be no waivers, exceptions, or modifications, unless the following exception is adopted: “A lease exception may be considered where a portion of the proposed lease is determined to be in non-habitat, the area is not used by Greater Sage-grouse, nor would it have direct, indirect or cumulative effects to sage grouse or its habitat. The determination would be made by a team of agency sage-grouse experts, including an expert from the state wildlife agency, the Service, and BLM/USFS. All exceptions must be approved by the State Director.” In Wyoming only PHMAs are designated Controlled Surface Use (CSU) based on disturbance caps, limitations, and strict waiver, modification and exception criteria.

In the Great Basin, GHMAs are “Open” with moderate constraints that will protect sage-grouse and its habitat. However, sub-regions may consider applying the same restrictions as applied to BLM-designated priority habitat. Moderate constraints include controlled surface use and timing limitations.

In the Rocky Mountain region, GHMAs are “Open” with standard or moderate constraints. However, sub-regions may consider applying the same restrictions as applied to BLM-designated priority habitat. Standard constraints are areas that may be open to mineral leasing with no specific management decisions defined in a RMP; however, these areas are subject to lease terms and conditions.

Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).”

Where a proposed fluid mineral development project on an existing lease could adversely affect GRSG populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to sage-

718 grouse or its habitat and will ensure that the best information about the GRSG and its habitat
719 informs and helps to guide development of such Federal leases.

720 Under the new LUPs the amount of modeled sage-grouse breeding distribution open to oil and
721 gas development with standard stipulations has declined from 35.1 to 5.5 percent (Table 27-7);
722 and the amount of modeled breeding habitat open to geothermal development declined from 32.9
723 to 4.1 percent (Table 27-8).

724 Table 27-7. Oil and gas allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)								2015 (ADPP/Final EIS)							
	Closed		Open-Major Stips		Open-Moderate Stips		Open-Standard Stips		Closed		Open-Major Stips		Open-Moderate Stips		Open-Standard Stips	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	706,247	6.8	411,108	4.0	2,510,945	24.3	1,043,699	10.1	148,443	1.4	2,710,109	26.3	1,557,926	15.1	286,044	2.8
II	715,024	6.0	1,222,210	10.3	4,839,096	40.6	1,267,767	10.6	903,534	7.6	2,678,531	22.5	4,291,530	36.0	284,217	2.4
III	174,405	2.1	283,261	3.3	342,446	4.0	6,273,829	74.1	165,395	2.0	3,612,779	42.6	1,680,055	19.8	1,755,776	20.7
IV	803,999	7.0	232,286	2.0	701,308	6.1	5,988,836	51.9	755,635	6.5	6,821,059	59.1	486,759	4.2	123,622	1.1
V	681,290	19.7	287,351	8.3	226,159	6.5	1,479,548	42.7	779,965	22.5	1,557,668	45.0	366,577	10.6	93,702	2.7
VI ¹																
VII	1,636	1.0	10,162	6.3	26,818	16.6	29,325	18.2	13,307	8.2	47,739	29.6	5,962	3.7	932	0.6
Rangewide ²	3,082,602	6.7	2,446,379	5.3	8,646,772	18.9	16,083,005	35.1	2,766,280	6.0	17,427,886	38.0	8,388,809	18.3	2,544,294	5.5

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

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726

727 Table 27.8. Geothermal allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)								2015 (ADPP/Final EIS)							
	Closed		Open-Major Stips		Open-Moderate Stips		Open-Standard Stips		Closed		Open-Major Stips		Open-Moderate Stips		Open-Standard Stips	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	214,906	2.1	13,338	0.1	28,508	0.3
II	78,835	0.7	78,372	0.7	822,621	6.9	1,349,294	11.3	536,055	4.5	1,137,852	9.6	706,819	5.9	17,697	0.1
III	174,405	2.1	283,261	3.3	342,446	4.0	6,273,829	74.1	165,395	2.0	3,761,576	44.4	1,683,898	19.9	1,603,126	18.9
IV	804,056	7.0	231,822	2.0	700,328	6.1	5,982,476	51.8	755,178	6.5	6,824,617	59.1	486,759	4.2	119,948	1.0
V	681,290	19.7	287,351	8.3	226,159	6.5	1,479,548	42.7	778,705	22.5	1,561,002	45.1	366,577	10.6	90,503	2.6
VI¹																
VII	1,636	1.0	317	0.2	9	0.0	0	0.0	13,307	8.2	47,739	29.6	5,962	3.7	932	0.6
Rangewide²	1,740,221	3.8	881,123	1.9	2,091,562	4.6	15,085,147	32.9	2,248,640	4.9	13,547,693	29.5	3,263,353	7.1	1,860,713	4.1

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

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Non-Energy Leasable Minerals

The BLM leases certain solid minerals, like phosphate, sodium, and potassium, on public and other Federal lands. These lands include areas managed by the BLM and the USFS. The BLM can also lease these minerals on certain private lands, provided that the mineral rights are owned by the Federal government.

Most of the minerals leased under this program are used to make fertilizer and as feed stock for other industrial processes. Where the Federal government has acquired the land, BLM leases base and precious metals under this program.

Under the new LUPs, PHMAs are “Closed” to new permits for non-energy leasable minerals. Expansion of existing operations could be considered if the disturbance is within the cap and subject to compensatory mitigation. In Wyoming only: these areas are “Open,” but are subject to the disturbance cap and stipulations. General Habitat Management Areas can be “Open” subject to stipulations that will protect sage grouse and its habitat.

Under the new LUPs, the percent of the modeled breeding distribution open to non-energy leasable mineral allocations has declined from 56.1- to 27.4 percent (Table 27-9).

Table 27-9. Non-energy leasable mineral allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)				2015 (ADPP/Final EIS)			
	Closed		Open		Closed		Open	
	Acres	%	Acres	%	Acres	%	Acres	%
I	61,901	0.6	2,927,044	28.4	1,753,766	17.0	1,702,447	16.5
II	434,472	3.6	6,612,233	55.5	2,009,849	16.9	5,124,617	43.0
III	174,405	2.1	7,075,540	83.5	3,865,693	45.6	3,375,372	39.8
IV	686,794	6.0	7,033,988	60.9	6,431,372	55.7	1,749,116	15.2
V	681,290	19.7	1,993,019	57.5	2,216,175	64.0	580,265	16.8
VI¹								
VII	1,636	1.0	66,306	41.1	56,849	35.2	11,092	6.9
Rangewide²	2,040,497	4.4	25,708,130	56.1	16,333,704	35.6	12,542,908	27.4

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Locatable Minerals

The General Mining Law of 1872, as amended, opened the public lands of the U.S. to mineral acquisition by the location and maintenance of mining claims. Mineral deposits subject to acquisition in this manner are generally referred to as “locatable minerals.” Locatable minerals include both metallic minerals (e.g., gold, silver, lead, copper, zinc, nickel, etc.), nonmetallic minerals (e.g., fluorspar, mica, certain limestones and gypsum, tantalum, heavy minerals in placer form, and gemstones) and certain uncommon variety minerals. Under the new LUPs, locatable minerals have been recommended for withdrawal in the strongholds.

Under the new LUPs, the percent of the modeled breeding distribution open to locatable mineral development has declined from 61.5-to 49.1 percent (Table 27-9). In addition, over 2 million ha (5 million ac) are now recommended for withdrawal from locatable mineral development (Table 27-10).

Table 27-10. Locatable mineral allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)						2015 (ADPP/Final EIS)					
	Existing Withdrawals		Recommended Withdrawals		Open		Existing Withdrawals		Recommended Withdrawals		Open	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	45,834	0.4	26,897	0.3	4,398,630	42.7	68,915	0.7	835,128	8.1	3,184,916	30.9
II	1,370,040	11.5	65,581	0.6	6,608,057	55.5	1,330,453	11.2	583,292	4.9	6,097,615	51.2
III	120,047	1.4	3,424	0.0	7,115,842	84.0	128,384	1.5	1,749	0.0	7,106,987	83.9
IV	220,689	1.9	0	0.0	7,500,081	65.0	772,460	6.7	2,967,493	25.7	4,295,071	37.2
V	143,839	4.2	4,977	0.1	2,521,189	72.8	257,850	7.4	749,907	21.6	1,769,956	51.1
VI¹												
VII	0	0.0	0	0.0	67,941	42.1	0	0.0	0	0.0	67,941	42.1
Rangewide²	1,900,449	4.1	100,880	0.2	28,211,739	61.5	2,558,062	5.6	5,137,569	11.2	22,522,486	49.1

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Mineral Materials

Since July 23, 1955, common varieties of sand, gravel, stone, pumice, pumicite, and cinders were removed from the General Mining Law and placed under the Materials Act of 1947, as amended. Use of salable minerals requires either a sales contract or a free-use permit. Under the new LUPs, PHMAs are “closed” to new mineral material sales. Priority Habitat management Areas are “open” to free use permits and the expansion of existing active pits, subject to compensatory mitigation and disturbance caps. Required design features will be applied to all

free use permits. General Habitat Management Areas can be “Open” subject to stipulations that will protect sage grouse and its habitat.

Under the new LUPs, the percent of the modeled breeding distribution open to salable mineral development has declined from 61.7- to 30.1 percent (Table 27-11).

Table 27-11. Salable mineral allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)				2015 (ADPP/Final EIS)			
	Closed		Open		Closed		Open	
	Acres	%	Acres	%	Acres	%	Acres	%
I	97,245	0.9	4,432,815	43.0	2,617,074	25.4	2,141,075	20.8
II	587,644	4.9	7,454,293	62.6	1,976,583	16.6	5,886,719	49.4
III	143,161	1.7	7,095,663	83.8	3,851,040	45.5	3,385,176	40.0
IV	501,307	4.3	7,684,049	66.6	6,370,759	55.2	1,809,276	15.7
V	877,215	25.3	1,574,378	45.4	2,217,193	64.0	579,241	16.7
VI¹								
VII	3,693	2.3	64,253	39.8	55,811	34.6	12,135	7.5
Rangewide²	2,210,265	4.8	28,305,450	61.7	17,088,459	37.3	13,813,622	30.1

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Trails and Travel Management

Travel management regulations require BLM and USFS to establish lands as either “open”, “limited”, or “closed” to off-road vehicle use. “Open” areas are areas where all types of vehicle use is permitted at all times, anywhere in the area. “Limited” areas are areas restricted at certain times, in certain areas, and/or to certain vehicular use. “Closed” areas are those which are closed to all types of vehicle use and include units of the National Wilderness Preservation System. Areas that have not been designated in one of these categories in a LUP are “undesignated” and have no restrictions on motorized access.

Under the new LUPs, over 4 million ha (approximately 10 million ac) of undesignated or open lands within the modeled breeding distribution of sage-grouse are now limited with respect to OHVs (Table 27-12). Lands with an open designation have been reduced by approximately 3.4 million ha (8.5 million ac) within the modeled breeding distribution of sage-grouse (Table 27-12).

In PHMA and GHMA, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use).

Table 27-12. Trails and travel management allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)						2015 (ADPP/Final EIS)					
	Closed		Limited		Open		Closed		Limited		Open	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I	6,935	0.1	2,712,275	26.3	140,086	1.4	8,299	0.1	2,909,577	28.2	0	0.0
II	54,595	0.5	6,666,195	56.0	185,166	1.6	57,503	0.5	6,851,683	57.5	11,844	0.1
III	83,279	1.0	960,297	11.3	5,624,591	66.4	92,192	1.1	5,562,292	65.7	1,405,209	16.6
IV	513,514	4.4	3,059,637	26.5	3,866,641	33.5	395,422	3.4	6,976,130	60.4	68,847	0.6
V	89,351	2.6	1,413,528	40.8	1,169,200	33.8	104,717	3.0	2,475,892	71.5	98,079	2.8
VI¹												
VII	0	0.0	28,056	17.4	352	0.2	0	0.0	28,795	17.8	125	0.1
Rangewide²	747,674	1.6	14,839,989	32.4	10,986,036	24.0	658,134	1.4	24,804,369	54.1	1,584,105	3.5

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Livestock

Regulations enacted to restrict grazing began in the late 1800s to control the use of public lands but also to ensure that policies of multiple use were mandated. The Organic Act of 1897 (16 USC 473) gave the USFS the right to manage grazing on forest reserves. Subsequently, permits to graze a limited number of animals exclusively on tracts within the forest system for a fee were established. In 1934, the Taylor Grazing Act (43 USC 515) was passed to prevent overgrazing and damage to public lands. The Taylor Grazing Act terminated open rangeland policies, established grazing districts, and required permits for use. The remaining vacant lands were closed to homesteading or withdrawals. More recently, the Classification and Multiple Use Act (43 USC 2420) and the Federal Land Policy and Management Act (43 USC 1701-1782) in 1976 directed that public lands were to be used for multiple use consistent with maintaining environmental standards. The 1978 Public Rangelands Improvement Act (43 USC 1901-1908) provided for restoration of damaged lands, established a policy of inventory and monitoring, and required periodic reports on the conditions and trends of lands to the Secretaries of Interior and Agriculture. Since the first set of grazing regulations was issued after the passage of the Taylor Grazing Act in 1934, the regulations have been periodically amended and updated, with the latest revision in 2006 (71 FR 39402).

Under the new LUPs, livestock allocations have not substantively changed (Table 27-13), but BLM and USFS now include management of grazing to meet sage-grouse habitat objectives, consistent with site-specific guidelines or ecological site descriptions. LUPs call for grazing to benefit or be neutral to sage-grouse through evaluation of numbers and distribution of livestock, and consideration of drought.

Table 27-13. Livestock allocations within modeled breeding distribution of greater sage-grouse.

Management Zone	2010 (No Action)				2015 (ADPP/Final EIS)			
	Unavailable		Available		Unavailable		Available	
	Acres	%	Acres	%	Acres	%	Acres	%
I	0	0.0	2,986,149	29.0	40	0.0	2,929,820	28.4
II	9,987	0.1	6,889,191	57.9	2,409	0.0	6,895,543	57.9
III	1,059	0.0	7,030,051	83.0	1,059	0.0	7,030,051	83.0
IV	23,529	0.2	7,391,977	64.0	63,366	0.5	7,356,600	63.7
V	4,391	0.1	2,657,424	76.7	22,544	0.7	2,632,533	76.0
VI¹								
VII	0	0.0	28,487	17.7	0	0.0	28,509	17.7
Rangewide²	38,966	0.1	26,983,278	58.8	89,418	0.2	26,873,056	58.6

¹BLM Plan data does not cover the State of Washington (MZ VI)

²All rangewide calculations will not include Bi-State population or the Canadian portion of the range.

Vegetation Objectives

The new LUPs establish specific vegetation objectives to provide for sage-grouse habitat. Vegetation treatments, issuance of grazing permits, and management of wild horses and burros will be based on these vegetation objectives. Under the new LUPs, the NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMAs are required to include specific management thresholds based on sage-grouse habitat objectives in the LUPs or Land Health Standards (43 CFR 4180.2) and defined responses that will allow the authorizing officer to make adjustments to livestock grazing without conducting additional NEPA. For management of wild horses and burros, HMAs in sage-grouse habitat will be managed within established AML ranges to achieve and maintain sage-grouse habitat objectives. In addition, rangeland health assessments, gathers, and population growth suppression techniques will be prioritized in SFAs and PHMAs.

Monitoring

The regulations for the BLM (43 CFR 1610.4-9) and the USFS (36 CFR part 209, published July 1, 2010) require that land use plans establish intervals and standards, as appropriate, for

monitoring and evaluations based on the sensitivity of the resource to the decisions involved. Pursuant to these regulations, an interagency team developed *The Greater Sage-grouse Monitoring Framework* that describes the methods to be used to collect monitoring data and to evaluate implementation and effectiveness of the sage-grouse planning strategy and the conservation measures contained in the LUPs (BLM and USFS 2014, entire).

To ensure that the BLM and the USFS are able to make consistent assessments about sage-grouse habitats across the range of the species, this framework lays out the methodology—at multiple scales (broad, mid, fine, and site scales)—for monitoring of implementation and disturbance and for evaluating the effectiveness of BLM and USFS actions to conserve the species and its habitat. Monitoring efforts will include data for measurable quantitative indicators of sagebrush availability, anthropogenic disturbance levels, and sagebrush conditions. Implementation monitoring results will allow the BLM and the USFS to evaluate the extent that decisions from their LUPs to conserve sage-grouse and their habitat have been implemented. State fish and wildlife agencies will collect population monitoring information, which will be incorporated into effectiveness monitoring as it is made available.

Managing and monitoring sage-grouse habitats are complicated by the differences in habitat selection across the range and habitat use by individual birds within a given season. Therefore, the monitoring framework evaluates multiple habitat suitability indicators to evaluate plan effectiveness. For descriptions of these habitat suitability indicators for each scale, see “Sage-Grouse Habitat Assessment Framework: Multiscale Habitat Assessment Tool” (HAF; Stiver *et al.* 2010, entire).

Results from monitoring data will help determine management, as these data will define when habitat objectives are not being met, when disturbance caps have been breached, and when adaptive management triggers have been tripped (see below).

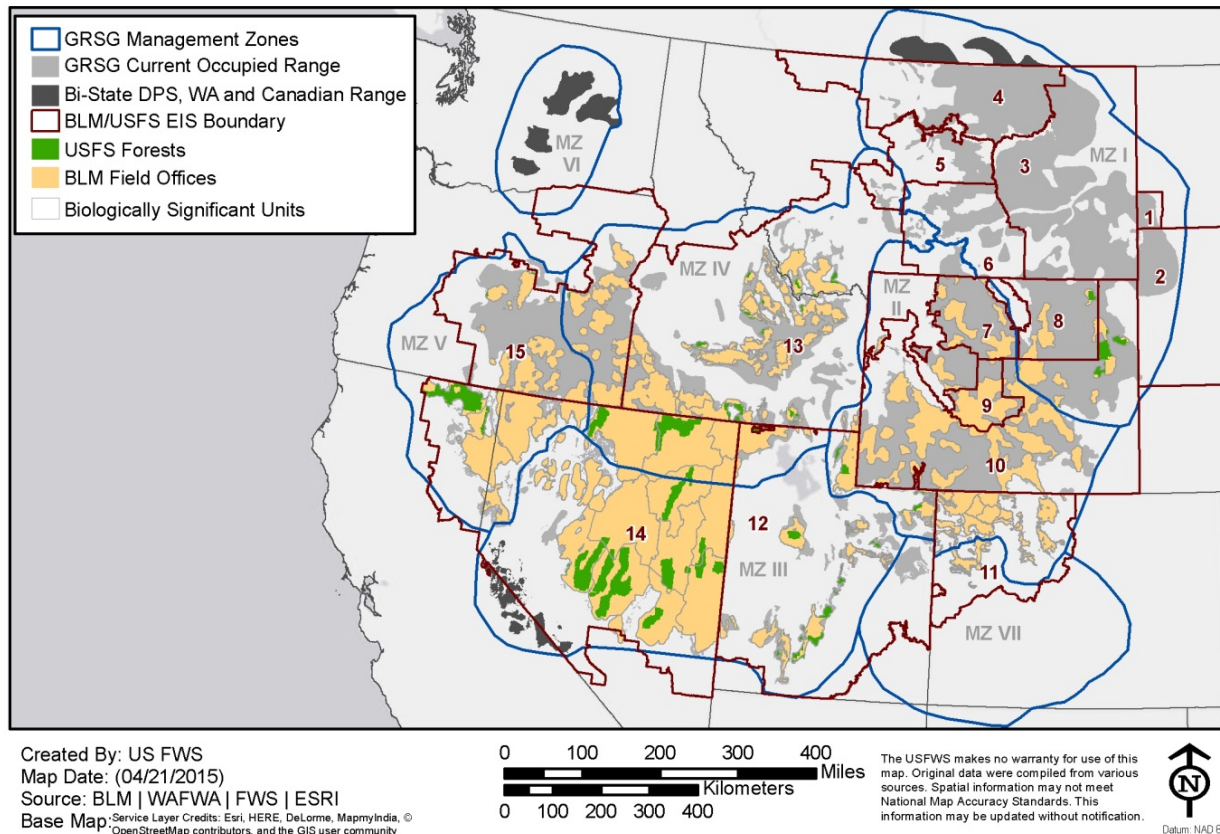


Figure 27-4. Biologically Significant Units (BSU) within BLM Field Offices and USFS Forests for use in disturbance monitoring as part of the new BLM and USFS LUPs. [note: GIS data for Montana BSUs was not available at the time this report was drafted].

Disturbance Caps

Anthropogenic disturbance has been identified as a key threat to sage-grouse (see **Impact Analysis** section). To limit new anthropogenic disturbance within sage-grouse habitats the BLM and USFS RMPs and LRMPs establish disturbance caps, above which no new development is permitted (subject to applicable laws and regulations; e.g., 1872 hard rock mining law, and valid existing rights). This cap acts as a backstop to ensure that any implementation decisions made under the RMPs and LRMPs will not permit significant new disturbance within the distribution of sage-grouse on BLM and USFS lands.

For all states, except Wyoming (which has a 5 percent cap consistent with the State plan), BLM and USFS have established a 3 percent disturbance cap at two spatial scales – the “Biologically Significant Unit” and at the project scale (Figure 27-4). The disturbance cap calculation will include all anthropogenic disturbance (does not include disturbance from fire or vegetation treatments except in Wyoming) in PHMAs within the BSU and project scale regardless of land ownership. Disturbance calculations will be completed on an annual basis by the BLM’s

National Operation Center. If 3 percent disturbance is reached then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the 1872 hard rock mining law, valid existing rights, etc.) will be permitted by BLM or USFS within PHMAs in any given BSU or project analysis area (depending on the spatial scale at which the 3 percent cap is hit) until the disturbance has been reduced to less than the cap.

In addition to the 3 percent disturbance cap at the BSU and project scales, the BLM and USFS will use a density cap related to the density of energy and mining facilities during project scale authorizations. If the disturbance density is greater than an average of 1/259 ha (1/640 ac), the project will either be deferred or co-located in an existing disturbed area (subject to applicable laws and regulations, such as the 1872 Mining Law, valid existing rights, etc.).

Lek Buffers

Sage-grouse leks are communal breeding centers that are most representative of breeding habitats. Conservation of the areas is crucial to maintaining sage-grouse on the landscape, and because leks represent focal points within populations, protective buffers around lek sites can be a useful tool to conserve seasonal habitats required by sage-grouse throughout their life-cycle (Manier *et al.* 2014, pp. 1–2).

To develop “biologically relevant and socioeconomically practical” lek buffer distances for use in the LUPs, the DOI commissioned the USGS to review the scientific information on conservation buffer distances for sage-grouse. The result was the publication of a USGS Open-File Report, entitled “Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review” in 2014 (Manier *et al.* 2014, entire). The BLM and USFS will apply the lek buffer distances specified as the lower end of the interpreted range in the report unless justifiable departures are determined to be appropriate (see below). The lower end of the interpreted range of the lek buffer distances are presented in Table 27-14. In determining lek locations, the BLM will use the most recent active or occupied lek data available from the state wildlife agency.

Table 27-14. Lek buffer distances in LUPs.

Disturbance	Lek Buffer
Linear Features (e.g., roads)	3.1 miles
Infrastructure related to energy development	3.1 miles
Tall structures (communication or transmission towers, transmission lines)	1.2 miles
Low structures (e.g., fences, rangeland structures)	1.2 miles
Surface disturbance (human activities that alter or remove natural vegetation)	3.1 miles
Noise and related disruptive activities	0.25 miles

The LUPs recognize that justifiable departures to decrease or increase from these distances, based on local data, best available science, landscape features, and other existing protections

(e.g., land use allocations, state regulations) may be appropriate for determining activity impacts. All variations in lek buffer distances require “appropriate analysis and disclosure as part of activity authorization.”

For Actions in PHMA, the BLM and USFS will apply the lek buffer distances in Table 27-14 as required conservation measures. The BLM and USFS may approve actions in PHMA that are within the applicable lek buffer distance identified above only if the BLM, with input from the state fish and wildlife agency, determines, based on best available science, landscape features, and other existing protections, that a buffer distance other than the distance identified above offers the same or greater level of protection to sage-grouse and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area. The BLM or USFS will explain its justification for determining the approved buffer distances meet these conditions in its project decision.

For actions in GHMA, the BLM and USFS will generally apply the lek buffer distances in Table 27-14 as required conservation measures to fully address the impacts to leks as identified in the NEPA analysis. However, if it is not possible to relocate the project outside of the applicable lek buffer distance(s) identified above, the BLM or USFS may approve the project only if: (1) based on best available science, landscape features, and other existing protections, (e.g., land use allocations, state regulations), the BLM or USFS determine that a lek buffer distance other than the applicable distance identified above offers the same or a greater level of protection to sage-grouse and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area; or (2) the BLM or USFS determines that impacts to sage-grouse and its habitat are minimized such that the project will cause minor or no new disturbance (e.g., co-location with existing authorizations); and, (3) any residual impacts within the lek buffer distances are addressed through compensatory mitigation measures sufficient to ensure a net conservation gain, as outlined in the Mitigation Strategy (see below).

Required Design Features

Required Design Features (RDFs) are required for certain activities in all GRSG habitat. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts. However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area). All variations in RDFs would require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable;
- An alternative RDF is determined to provide equal or better protection for GRSG or its habitat;

- A specific RDF will provide no additional protection to GRSG or its habitat.

Adaptive Management

Adaptive management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity.

Adaptive management will help ensure sage grouse conservation measures in the LUPs are effective; and if they are not effective, corrective actions will be implemented. Each planning area (with the exception of Lander,³ and North Dakota) has identified adaptive management soft and hard triggers and responses. Soft triggers represent an intermediate threshold indicating that management changes are needed at the project/implementation level to address habitat and population losses. If a soft trigger is identified, the BLM will apply more conservative or restrictive implementation conservation measures to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. These types of adjustments will be made to preclude tripping a “hard” trigger (which signals more severe habitat loss or population declines). Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from sage-grouse conservation objectives as set forth in the LUPs. Hitting a hard trigger will result in BLM or USFS switching to a more restrictive alternative from the FEIS either in whole or in part to address the causal factors (e.g., immediate cessation of authorizing land use authorizations within the area). After the hard-trigger is tripped, the BLM or USFS will determine the causal factor and develop and implement a corrective strategy.

Mitigation

All of the BLM and USFS LUPs require that impacts to sage-grouse habitats are mitigated and that mitigation provides a net conservation gain to the species that accounts for any uncertainty associated with the effectiveness of that mitigation. All mitigation will be achieved by avoiding, minimizing, and compensating for impacts following the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g., avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM/USFS management actions and authorized third party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species.

³ Lander is currently operating under the adaptive management strategy outlined in the Wyoming Core Area Strategy and is working on adding an Adaptive Management Strategy to the LUP in an amendment.

Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

The BLM/USFS will establish a WAFWA Management Zone Greater Sage-Grouse Conservation Team (hereafter, Team) to help guide the conservation of sage-grouse, within 90 days of the issuance of the Record of Decision. This Team will develop a WAFWA Management Zone Regional Mitigation Strategy using the BLM's Regional Mitigation Manual MS-1794 as a framework. The team will also compile and report on monitoring data (including data on habitat condition, population trends, and mitigation effectiveness) from States across the WAFWA MZs and will use these data to either modify the appropriate Regional Mitigation Strategy or recommend adaptive management actions.

U.S. Fish and Wildlife Service

Refuges are administered under the National Wildlife Refuge Administration Act (NWRAA) of 1966 (16 U.S.C. §668dd–668ee) and the National Wildlife Refuge System Improvement Act (Public Law 105-57), which amended the NWRAA. The Refuge Improvement Act consolidated existing refuge law and articulated a system-wide mission statement uniquely focused on putting wildlife first: “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations.” The Refuge Improvement Act specifically calls for managing the Refuge System to conserve biological diversity by applying the latest scientific information and methods to refuge management and its evaluation and by expanding the refuge system through planned land acquisition. The Refuge Improvement Act also requires each refuge to develop a 15-year Comprehensive Conservation Plan (CCP) to guide management.

The National Wildlife Refuges that support the most substantial populations of sage-grouse are: Hart Mountain National Antelope Refuge (MZ V), Sheldon National Wildlife Refuge (MZ V), and Charles M. Russell NWR (MZ 1) (see Land Ownership and Management section, above).

Sheldon-Hart NWRC

Hart Mountain National Antelope Refuge (NAR) consists of 112, 459 ha (277,893 ac) of sagebrush-steppe in Lake County, Oregon. It was established in 1936, “as a range and breeding ground for antelope and other species of wildlife.” (Executive Order 7523, Dec. 21, 1936). The refuge published a Notice of Intent (NOI) to revise its CCP on May 25, 2012 (77 FR 31379). The NOI identifies key issues to be analyzed in the CCP, many of which can benefit the refuge's sage-grouse population: the impact of fire and juniper encroachment on the refuge's sagebrush habitat, invasive species control, and land protection and planning to reduce habitat fragmentation (USFWS, 2012). Feral horses and cattle were removed from Hart Mountain NAR in the 1990s and efforts are ongoing to remove juniper trees that are encroaching into sage-grouse habitats (G. Collins, pers. comm. 2015).

Sheldon National Wildlife Refuge (NWR), which encompasses 232,694 ha (575,000 ac) of sagebrush-steppe in northwest Nevada, finalized its CCP in 2013 (USFWS, 2013). Sage-grouse conservation is a major component of the CCP, which calls for, among other actions, removal of feral horses and burros from the refuge, designation of vehicle routes for public use, recommendation for 142,287 ha (351,598 ac) to be designated as wilderness by Congress and development of existing visitor facilities such as campgrounds, interpretive trails and the visitor contact station. The CCP's preferred alternative strategies support the Oregon sage-grouse conservation plan, which is currently in draft form. The management strategies outlined in the CCP's preferred alternative are in alignment with action guidelines described in the draft Oregon plan. The removal of all feral horses from Sheldon NWR was accomplished in the Fall of 2014. Livestock were removed from the Refuge in the 1990s, and efforts are ongoing to remove juniper trees that are encroaching into sage-grouse habitats (G. Collins, pers. comm. 2015).

Charles M. Russell NWR

Charles M. Russell NWR (which includes UL Bend NWR) encompasses 445,154 ha (1.1 million ac) along the Missouri River in central Montana. Of this total, almost half is managed exclusively by the Service; the remainder is under the primary jurisdiction of the Army Corps of Engineers, which manages the Fort Peck Reservoir. The refuge, which is the largest in Montana and second largest in the lower 48 states, was originally established as Fort Peck Game Range in 1936, and was co-managed by the Departments of Agriculture and Interior to maintain wildlife values and livestock (USFWS 2012, pp. 23–24). It was renamed as a National Wildlife Refuge in 1963. Limited portions of the refuge provide habitat for sage-grouse, mainly on the floodplain in UL Bend NWR and along the southern side of the reservoir (USFWS 2012, pp.190–191). Sage-grouse is identified as a focal bird species in the refuge's CCP(USFWS 2012, p. 219). The CCP's preferred alternative includes actions to maintain and improve habitat to benefit sage-grouse and other shrub-steppe species, including the maintenance of existing stands of big sagebrush and restoration of shrub diversity in sagebrush-steppe uplands; control of grazing by native and domestic ungulates to address more than a century of overgrazing by livestock; and management of fire and invasive plants to restore the natural fire-return interval and a mosaic of native shrub and grassland habitats.

Department of Defense

Of the nine military installations that overlap with the distribution of sage-grouse only the Joint Base Lewis-McChord Yakima Training Center (JBLM YTC) contains a significant percentage of the modeled breeding distribution within a given MZ. Therefore our evaluation of regulatory mechanisms on DoD lands focuses on this installation.

The JBLM YTC , formerly called Yakima Training Center, continues to manage habitat in Washington that supports one of two populations of sage-grouse in the state. As a joint base, JBLM YTC is now a sub-installation of the Fort Lewis McChord Army installation. Management of sage-grouse and its habitat at JBLM YTC is dictated by management direction described in their Western Sage Grouse Management Plan (1998 ENRD YTC), which is tiered to

their Cultural and Natural Resource Management Plan (CNRMP) (2002 ENRD YTC), combined with changes contained in the Fort Lewis Army Growth and Force Structure Realignment Record of Decision (2011) (also known as “Grow The Army” or GTA). The 2002 CNRMP is currently being updated into a newer Integrated Natural Resource Management Plan, but is not yet final. The GTA FEIS analyzed the environmental and socioeconomic impacts of stationing approximately 5,700 soldiers and their families at Fort Lewis and additional aviation, maneuver, and live fire training needs at both installations.

The CNRMP specifies management prescriptions and actions for sage-grouse and their habitat, including identifying conservation objectives and measures for habitat quantity and quality necessary for maintaining a sage-grouse population at or above the 10-year average of 200 birds. Direct protection of sage-grouse and their habitat (i.e., mating, nesting and brood-rearing behavior and habitat) is done through timing and area restrictions, including air space restrictions. Vegetation restoration of shrub-steppe is required to address habitat impacted by wildfire and military training activities. Wildfire protection measures are required to prevent, contain, and rapidly extinguish wildfires. Monitoring of sage-grouse and their habitats, including monitoring of habitat restoration activities, are conducted within JBLM YTC jurisdictional boundaries. Army participation in sage-grouse recovery planning efforts and adaptive management through implementation reviews are also required.

The GTA Record of Decision (ROD) realigned sage-grouse habitat and core use area protection boundaries to incorporate new sage-grouse habitat use information and updated habitat management objectives. New leks were incorporated into the management scheme, sage-grouse protection areas (SGPAs) were reconfigured, vegetation management of fire primary containment areas within SPGAs were changed to fit with wildfire management objectives, flight restrictions were revised to cover newly proposed SPGAs, WNV surveillance and control was increased, and construction of forb greenhouse facilities were proposed for use in habitat restoration projects. SGPAs currently protect almost all active leks at JBLM YTC. The GTA ROD also established Army commitment to updating their Sage-Grouse Management Plan; participating in shrub-steppe conservation partnerships to promote shrub-steppe conservation, restoration, and protection from wildfire in and around the PAC; and establishment of a candidate conservation agreement with the Service.

Department of Energy

DOE’s main land holdings within the range of the sage-grouse are within the Idaho National Energy Lab (INEL). Since 2010, the INEL has developed, and is implementing a non-regulatory CCA to protect key sage-grouse habitats on DOE lands (see *Non-regulatory Conservation Efforts* section).

National Park Service

The primary National Park units that support breeding habitat for sage-grouse are Grand Teton National Park, and Craters of the Moon National Monument and Preserve.

Grand Teton National Park

Grand Teton National Park was established as a unit of the National Park System to protect the scenic and geological values of the Teton Range and Jackson Hole, and to perpetuate the park's indigenous plant and animal life. Eleven leks have been documented in Grand Teton National Park, but only four were consistently occupied throughout the breeding season with substantial male attendance in 2012 (Grand Teton National Park 2012; http://www.greateryellowstonescience.org/download_product/3968/0). The maximum number of males documented at leks in 2012 was 79, with a mean and standard deviation of 77 and 30, respectively, for the period from 1998 to 2012.

Craters of the Moon National Monument and Preserve

Craters of the Moon National Monument and Preserve contains three administrative units: Craters of the Moon National Monument managed by the NPS (no hunting or grazing permitted), Craters of the Moon National Monument managed by the BLM (hunting and grazing are permitted) and Craters of the Moon National Preserve managed by the NPS (hunting is permitted, but no grazing). The lands incorporated into the National Park System to protect the unique natural and geologic features of the area. The portion of the National Monument that is managed by BLM is undergoing a Management Plan amendment as part of the BLM/USFS planning process to incorporate sage-grouse conservation measures. There are 121 known historic and current leks on BLM lands in the Monument, but only 18 out of the 57 surveyed leks were documented as active in 2013 (BLM 2014, p. 36).

Craters of the Moon National Preserve and Monument institute approximately 269 km (167 mi) of seasonal road closures to protect sage-grouse leks during the breeding season (BLM 2007, p. 2). In addition, areas within 1 km (0.6 mi) of a lek are closed to bedding of sheep from March 15 to May 1 and from 6pm to 9am. During these times, trailing of livestock off designated roads and primitive roads within 1 km (0.6 mi) of a lek is also prohibited (BLM 2007, p. 2). Active lek areas are updated on an annual basis (BLM 2007, p. 3).

Tribal Laws and Regulations

Tribal lands were retained by tribes or were set aside for tribal use pursuant to treaties, statutes, judicial decisions, executive orders or agreements. These lands are managed by tribes in accordance with tribal goals and objectives, within the framework of applicable laws. Each tribal government operates according to its own constitutional rules and can promulgate their own laws and regulations that apply on tribal lands under their jurisdiction (Robertson and Viersen 2001, entire).

Tribal wildlife codes or executive orders outline hunting regulations on tribal lands. Tribes with the most substantial amount of modeled breeding habitat within their respective MZs are The Yakima Reservation, Duck Valley Reservation, and the Uintah and Ouray Reservation. The

Yakima Nation Wildlife Code (Title XXXII) prohibits sage-grouse hunting by non-members of Yakima Nation (32.110.05) and only allows sage-grouse hunting by members via a Special Permit. Sage-grouse hunting on the Duck Valley Reservation is limited to members (Ordinance Number 2010-SPO-05). Sage-grouse hunting on the Uintah and Ouray Reservation is generally closed to non-members, but the season can be opened if the Fish and Wildlife Advisory Board finds that there is an increase in bird numbers and they are not in danger of being exterminated (Title VIII, §8-1-23).

Canadian Federal and Provincial Laws and Regulations

Sage-grouse were first listed in Canada in 1997 as threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) because of very small and declining populations in Saskatchewan and Alberta. The species' status was changed to endangered in 1998, and sage-grouse are now federally protected in Canada as an endangered species under schedule 1 of the Species at Risk Act (SARA). This designation protects sage-grouse and their nests and eggs on federal lands and prohibits unauthorized killing, harming, harassing, capturing, taking, possessing, collecting, buying, selling or trading of individuals of the species (SARA 2002, p. 17). SARA also provides for identification of habitat on federal lands that is critical to the survival and recovery of species designated as threatened or endangered, and the Canadian government is responsible for ensuring that critical habitat is protected. Although voluntary measures are the preferred method for protecting critical habitat, SARA provides the means for the government to promulgate regulations to ensure that critical habitat is not destroyed (SARA 2002, pp. 27–30). Currently, no such regulations have been developed for sage-grouse critical habitat; instead, federal and provincial initiatives have been developed to facilitate voluntary action to protect critical habitat (see *Non-regulatory Conservation Measures*, below).

On December 4, 2013, the Canadian government issued an Emergency Order for the protection of the greater sage-grouse under SARA (CWS 2013, entire). The order prohibits construction of new tall (greater than 1.2 m) structures, new roads, and new fences and destruction of native plants, and requires nightly noise reduction in April and May (CWS 2013, p.112). These restrictions apply to critical habitat identified on 1,672 km² (646 mi²) of federal and provincial crown lands in southeastern Alberta and southwestern Saskatchewan (CWS 2013, p. 111; Figure 27-5).

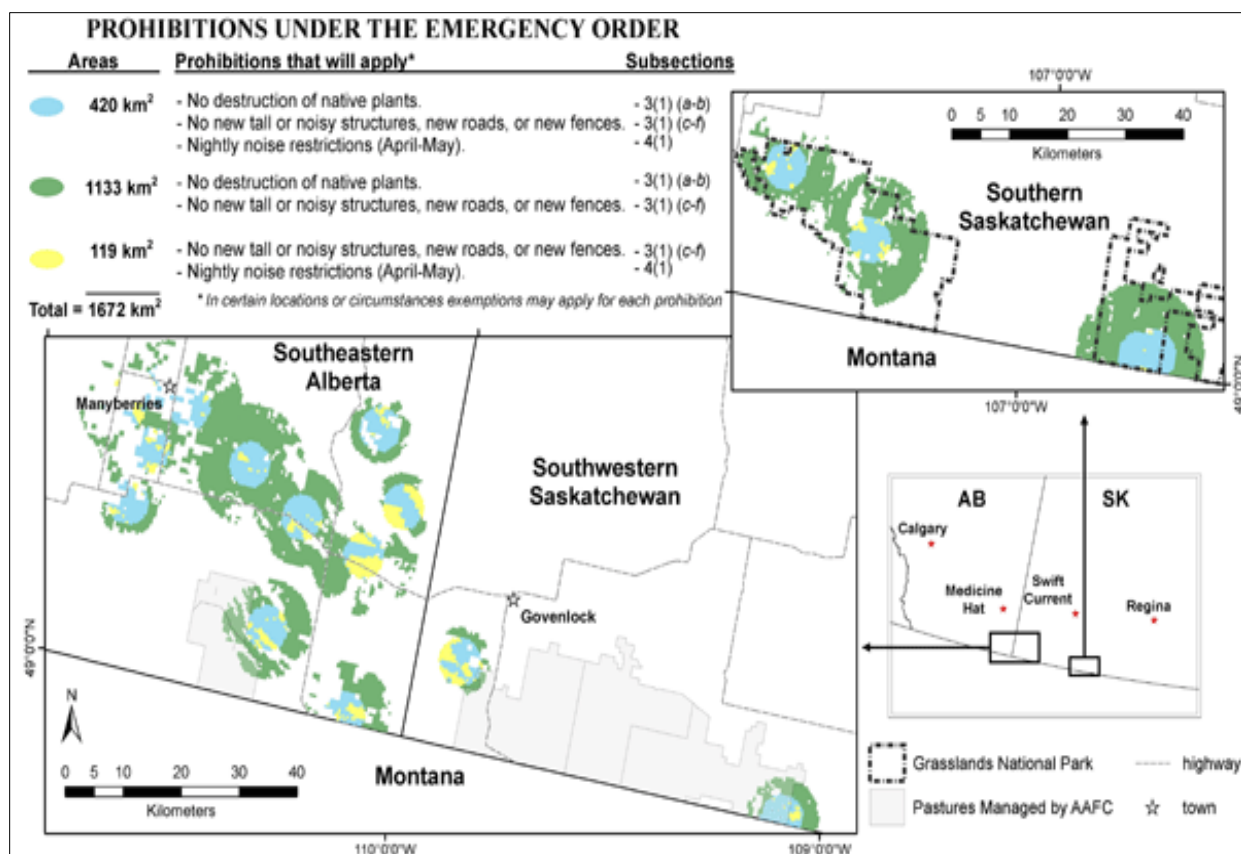


Figure 27-5. Map of the prohibitions associated with Canada's emergency order for the protection of sage-grouse (source: P.C. 2013-1245).

In December 2014, the Canadian Government finalized an amended recovery strategy for sage-grouse (Environment Canada 2014, entire). In addition to updating the 2008 document to reflect the most recent scientific information about the status of sage-grouse in Canada and establishing population objectives, the 2014 amended strategy completed the identification of critical habitat for the species in accordance with SARA (Environment Canada 2014, p. 23). The 2008 recovery strategy did not identify critical habitat, citing a lack of information (Lungle and Pruss 2008, p. 27). In 2009, a replacement for the critical habitat section of the strategy identified "necessary, but not sufficient" critical habitat in breeding, nesting, and brood-rearing habitat for sage-grouse in Alberta and Saskatchewan (Lungle and Pruss 2009, p. 2) for a total of 165 km² (63 mi²). The amended recovery strategy identifies 2,812 km² (1,086 mi²) of year-round habitat and 12.5 km² (4.8 mi²) of lek critical habitat in Saskatchewan and Alberta (Environment Canada 2014, pp. 23–30). Therefore, as a result of the amended recovery strategy and the Emergency Order combined, a total of 3,354 km² (1,295 mi²) of federal and provincial crown lands in Saskatchewan and Alberta, including Grasslands National Park in Saskatchewan, is identified as critical habitat for sage-grouse (Environment Canada 2014, p. iv; Parks Canada 2015, p. 693). The amended recovery strategy also includes numerous non-regulatory actions for the protection of critical habitat and the recovery and conservation of sage-grouse (see *Non-regulatory Conservation Measures*, below).

The sage-grouse is listed as endangered at the provincial level in Alberta and Saskatchewan, affording additional protections to the species on provincial and private lands. Harvest has been prohibited in Saskatchewan since at least the 1930s (Kerwin 1971, cited in Weiss and Prieto 2014, p. 1), and in Alberta since 1995 (Alberta Environment and Sustainable Resource Development 2013, p. 1). In Saskatchewan, sage-grouse were designated as threatened in 1987 under The Wildlife Regulations (1981), and as endangered in 1999 under the province's Wildlife Act of 1998 (Weiss and Prieto 2014, pp. 1, 13). The Wildlife Act states that without a license, no one may "kill, injure, possess, disturb, take, capture, harvest, genetically manipulate or interfere with or attempt to do any of those things...export or cause to be exported from Saskatchewan...[or] traffic in" designated species (The Wildlife Act 1998, p. 18). Sage-grouse habitat in Saskatchewan is protected under The Wildlife Habitat Protection Act, which prohibits sage-grouse habitat from being sold or cultivated (Wildlife Habitat Protection Act, p. 4). Restrictions put in place under the Wildlife Act formerly prohibited development within 500 m (1,640 ft.) of leks and prohibited construction activities within 1,000 m (3,281 ft.) of leks between March 15 and May 15 (Aldridge and Brigham 2003, p. 32). In our 2010 finding, we deemed these buffers inadequate to protect sage-grouse from disturbance. These activity restrictions were revised in 2012 to increase lek buffers to 3,200 m (10,499 ft.); include 1,000-m (3,281-ft.) buffers between development and lekking, brood-rearing, and wintering habitat; and make these restrictions apply year-round instead of only during the breeding season (Environment Canada 2014, p. 16; Weiss and Prieto 2014, p. 13).

Alberta's Wildlife Act requires that an Endangered Species Committee provide recommendations to the provincial Minister regarding designation of endangered species in Alberta and development of recovery plans, which may include population goals, conservation strategies, and the identification of critical habitat (Alberta Wildlife Act 2000, p. 13). The law states that "[a] person shall not wilfully molest, disturb or destroy a house, nest or den of prescribed wildlife" (Alberta Wildlife Act 2000, p. 25), but does not require development and implementation of recovery plans for species designated as endangered. However, Alberta Environment and Sustainable Resource Development has designated more than 1,500 mi² (3,880 km²) as conservation habitat for sage-grouse, including areas adjacent outside of federally identified critical habitat (J. Nicholason, pers. comm. 2015). All known active and inactive leks are protected by 30-acre Protective Notations (PNTs) designated by the province, and PNTs that covering the range of sage-grouse in Alberta prohibit public land sales and potentially restrict surface development (Alberta Environment and Sustainable Resource Development 2006, pp. A-1–A-3; Alberta Environment and Sustainable Resource Development 2013, pp. 19–20). In addition, in 2013 the Alberta Department of Energy restricted all new surface access for oil and gas development through subsurface addenda to leases or other drilling rights accorded to private businesses (J. Nicholson, pers. comm. 2015). Aside from PNTs, regulation of new surface access, and the protection of individual sage-grouse by provincial law, efforts to recover the species and protect its habitat in Alberta (e.g., Alberta Environment and Sustainable Resource Development 2013, pp. 18–21) are non-regulatory (see below).

CHAPTER 28: NON-REGULATORY CONSERVATION EFFORTS

WAFWA Conservation Strategy and Local Working Groups

The Western Association of Fish and Wildlife Agencies initiated formation of the Western States Sage-grouse Technical Committee in 1954 to develop strategies to monitor and manage sage-grouse (Connelly et al. 2004, p. 2-1). This committee had its first official meeting in 1959 and eventually evolved to include columbian sharp-tailed grouse. Contemporary sage-grouse conservation efforts began to focus in 1995 when the Western States Sage and Columbian Sharp-tailed Grouse Technical Committee determined, through harvest estimates and lek counts, that sage-grouse across the west were showing a sustained downward trend (Connelly et al. 2004, p. 2-1). The Technical Committee evaluated trends in number and distribution and recommended that WAFWA begin proactive conservation measures to protect sage-grouse and sagebrush habitats. In 1996, the Western Association of Fish and Wildlife Agencies developed their first Memorandum of Understanding (MOU) between their members regarding sage-grouse conservation.

An element of the 1996 MOU suggested that each state begin local area conservation planning groups to address sage-grouse conservation issues at population levels. Local working groups (LWG) were organized and by 2000, the number of LWGs focusing on sage-grouse numbered 12 with 44 groups organized by 2004, and more than 60 by 2008 (Connelly et al. 2004, pp. 2-12, 2-13; Stiver 2011, p. 38). Generally, LWGs are comprised of a diversity of stakeholders that establish conservation frameworks for their local area by identifying threats, proposing prescriptions for addressing threats, and developing monitoring and adaptive management strategies (Stiver 2011, p. 38). Local Work Groups and their progress are tracked on the LWG locator project as part of the National Biological Information Infrastructure (<http://greatbasin.wr.usgs.gov/LWG>).

The WAFWA entered into a contract with the Service in 2002 to produce a conservation assessment for sage-grouse and its habitat. The WAFWA choose to produce the assessment in two phases: Phase I consisted of a 2004 assessment of sage-grouse populations and sagebrush habitats upon which they depend (Connelly 2004, entire) and Phase II was the “Greater Sage-Grouse Comprehensive Conservation Strategy” (Conservation Strategy; Stiver *et al.* 2006, entire). This Conservation Strategy describes a rangewide framework to “maintain and enhance populations and distribution of sage-grouse” (Stiver et al. 2006, p. ES-1). Although this framework is important to guiding successful long-term conservation efforts and management of the sage-grouse and its habitats, by design the WAFWA Conservation Strategy is not regulatory in nature. In 2008 an MOU was signed among WAFWA and Federal agencies establish a structure and guidelines for implementing the 2006 Conservation Strategy. This MOU formed an Executive Oversight Committee (EOC) and a Range-wide Interagency Sage-grouse Conservation Team (RISCT), interagency groups that meet periodically to implement the Conservation Strategy. Although we lack information to ensure that the Strategy is reasonably certain to be implemented and effective across the range of sage-grouse, renewed regulatory

efforts that incorporate many of the principles of the WAFWA strategy have been undertaken to provide such assurances (see *Regulatory Mechanisms* section, above).

Conservation Efforts to Address the Fire and Invasives

Fire and Invasives Assessment Tool (FIAT) Step-down Assessments

Fire and invasives are recognized as the primary threat to sage-grouse habitat in the Great Basin in BLM and USFS LUPs. Finding that LUPs were not the best tool to address these threats, the BLM and USFS convened an interagency team to develop a rangewide assessment and approach to addressing these threats (i.e., the Fire and Invasives Assessment Tool or FIAT). The result was the “Greater Sage-Grouse Wildfire, Invasive Annual Grasses and Conifer Expansion Assessment” (hereafter referred to as FIAT; BLM 2014, entire) process, approved by the NPT in June 2014.

The FIAT process was used to develop collaborative step-down assessments that address threats to sage-grouse resulting from invasive annual grasses, wildfires, and conifer expansion. As part of the assessment process, IM 2014-134 was released August 28, 2014. This IM, in part, provided guidance for the BLM field offices to cooperate with interagency partners to complete FIAT assessments at local scales for five priority landscapes in sage-grouse habitat, which roughly corresponded to PACs in the Great Basin as identified in the COT Report (USFWS 2013, p. X) (i.e., Central Oregon, Northern Great Basin, Snake/Salmon/Beaverhead, Southern Great Basin, Western Great Basin/Warm Springs Valley).

For each priority landscape, regional findings were stepped down to describe local conditions by Project Planning Area (PPA) and associated treatment needs and management priorities. Each PPA contained emphasis areas, i.e., portions of a PAC with important habitat characteristics and sage-grouse populations that are impacted by wildfire, invasives, and conifer encroachment.

The basis of the FIAT protocol was the recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers *et al.* 2014c, entire) and NRCS soil surveys that include geospatial information on soil temperature and moisture regimes (BLM 2014, p. 2). While the FIAT is applicable across the range of sage-grouse, the current analysis is limited to MZs III, IV, and V (e.g., the Great Basin region). In addition, the focal habitat model limits restoration opportunities outside of the focal areas. Consequently, the FIAT process does not address the full suite of actions needed to maintain the current distribution and connectivity of sage-grouse habitats across the Great Basin. The utility of the FIAT is dependent on incorporating improved information and geospatial data as it becomes available. Future efforts designed to maintain and connect habitats across the range of the species will be needed as current focal areas are addressed and additional resources become available.

Treatment needs and management actions for FIAT assessments are described below. Management to resolve resource issues were divided into proactive approaches (e.g., fuels management and habitat recovery/restoration) and reactive approaches (e.g., fire operations and

post-fire rehabilitation) (BLM 2014, p. 3). Proactive management strategies can favorably modify wildfire behavior and restore or improve desirable habitat with greater resistance to invasive annual grasses and/or resilience after disturbances such as wildfires. Reactive management strategies are employed to reduce the loss of sage-grouse habitat from wildfires or stabilize soils and reduce impacts of invasive annual grasses in sage-grouse habitat after wildfires. Proactive management strategies will result in long-term sage-grouse habitat improvement and stability, while reactive management strategies are essential to reducing current impacts of wildfires on sage-grouse habitat, thus maintaining long-term habitat stability (BLM 2014, pp. 2-3).

Proactive Strategies:

1. Fuels Management includes projects that are designed to change vegetation composition and/or structure to modify fire behavior characteristics for the purpose of aiding in fire suppression and reducing fire extent.
2. Habitat Restoration/Recovery
 - a) Recovery, referred to as passive restoration (Pyke 2011, pp. 536–539), is focused on changes in land use (e.g., improved livestock grazing practices) to achieve a desired outcome where the plant community has not crossed a biotic or physical threshold.
 - b) Restoration is equivalent to active restoration (Pyke 2011, pp. 539–540) and is needed when desired species or structural groups are poorly represented in the community and reseedling, often preceded by removal of undesirable species, is required. The Fuels Management program supports recovery/restoration projects through its objective to restore and maintain resilient landscapes.

Reactive Strategies:

1. Fire Operations includes preparedness, prevention, and suppression activities.
2. Post-Fire Rehabilitation includes the BLM's Emergency Stabilization and Rehabilitation (ESR) Program and the USFS's Burned Area Emergency Response (BAER) Program. Policy limits application of funds from 1 to 3 years, thus treatments to restore or enhance habitat after this period of time are considered habitat recovery/restoration.

Cumulatively, the five FIAT assessments identify over 16,000 km (10,000 mi) of potential linear fuel treatments, nearly 3 million ha (approximately 7.4 million ac) of potential conifer treatments, over 2 million ha (5 million ac) of potential invasive plant treatments, and over 7.7 million ha (over 19 million ac) of post-fire rehabilitation (Table 28-1). The FIAT also identifies site-appropriate management strategies for fire operations and post-fire decisions. These assessments were designed to provide Service with regulatory certainty on the extent, location, and rationale for management opportunities to address significant threats to sage-grouse. However, most potential treatments identified in the FIAT assessments will require further NEPA analysis. Consequently, many potential treatments identified in the FIAT assessments are subject to change as a result of refinement during NEPA and implementation and effectiveness of proposed treatments is uncertain. While we do not know the extent to which this proposed treatments will alleviate the fire and invasives threat to sage-grouse (as described in the *Fire and Invasive Plants*

chapters), we believe that this strategic approach to ameliorating the threat is appropriate and significant.

Secretarial Order 3336, Rangeland Fire Prevention, Management, and Restoration

On 5 January 2015, the Secretary signed Secretarial Order 3336, Rangeland Fire Prevention, Management and Restoration (Order); an outcome from “The Next Steppe: Sage-grouse and Rangeland Fire in the Great Basin” conference. The Order sets forth enhanced policies and strategies for preventing and suppressing rangeland fire and for restoring sagebrush landscapes impacted by fire across the Great Basin region. In addition, the Order establishes a Rangeland Fire Task Force (Task Force) chaired by the Deputy Secretary. The first Task Force meeting was convened on January 12, 2015 to discuss the Order and provide direction to senior officials at the DOI. A Federal Interagency Working Group (Working Group) comprised of principal program area leadership met the week of 20 January 2015, to review the Order and build the Implementation Plan.

The Implementation Plan, completed on January 31, 2015, established a roadmap to accomplish the objectives of the Order and lays out the timeline and methodology to be used in developing two separate reports on short- (2015 western fire season) and long-term (2016 western fire season) actions and activities that will be implemented to further address the threat of rangeland fire in the Great Basin. The Task Force delivered SO 3336 - The Initial Report: A Strategic Plan for Addressing Rangeland Fire Prevention, Management, and Restoration in 2015. to the Secretary on March 1, detailing activities that can be undertaken in advance of the 2015 Western fire season. The Final Plan, due May 1, 2015, will outline the actions and activities that can be implemented in conjunction with the 2015 fire season and beyond. The Order places a priority on “protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, sage-grouse habitat, while maintaining safe and efficient operations,” and looks to the allocation of fire resources and assets associated with wildland fire to reflect that priority. The Task Force considered a wide variety of possible actions for conserving habitat for the sage-grouse as well as other wildlife species and economic activity, such as ranching and recreation, associated with the sagebrush-steppe ecosystem in the Great Basin. This effort will build upon the experience and success of addressing rangeland fire, and broader wildland fire prevention, suppression and restoration efforts to date, including the National Cohesive Wildland Fire Management Strategy, and ensure improved coordination with local, State, Tribal, and regional efforts to address the threat of rangeland fire at a landscape level.

1448 Table 28-1. Treatments Identified in the FIAT Assessments, by MZ and treatment type. Numbers are acres unless otherwise indicated.

FIAT Assessment Area						
Treatment Type	MZ III	MZ IV		MZ V		Totals
	Southern Great Basin	Northern Great Basin	Snake/Salmon/ Beaverhead	Central Oregon	Western Great Basin/ Warm Springs Valley	
Habitat Restoration	2,973,499	4,821,300	1,492,000	1,078,835	2,076,367	12,442,001
Fuels Treatments	18,092	458,400	87,300	571		564,363
Linear Fuels Treatments (mi)	1,490	5,300	400	97	3,299	10,586
Fire Operations	9,117,260	11,934,300	5,241,500	893,643	5,605,006	32,791,709
Post-Fire Rehabilitation (ESR) ¹	17,625	9,787,600	3,713,900	503,760	5,113,853	19,136,738
Conifer Treatments	2,357,606	3,100,500	508,100	554,824	875,126	7,396,156
Invasive Plant Treatment ²	2,957,796	407,100	223,400	526,109	979,024	5,093,429

1449 ¹ Post-fire rehabilitation includes the BLM's ESR Program and the USFS's BAER Program (i.e., should a fire occur in the FIAT assessment areas the post-fire
1450 rehabilitation identifies what areas BLM priorities for management would be). Program policies limit available funding from one to three years.

1451 ²For the purposes of FIAT, invasive species were limited to invasive annual grasses.

1452

WAFWA Wildfire and Invasive Working Group

In an effort to more pro-actively address the threats of wildfire and invasives, WAFWA, in cooperation with the Service, established an Initiative. This Initiative was designed to compile and coordinate existing information and management efforts to address the fire and invasive threat to sage-grouse. Moreover, the Initiative strategically developed new tools, as well as a set of concise, prioritized, and integrated actions land managers and policy maker can take to effectively preclude the dominance of invasive species and reduce their influence on the fire cycle in sagebrush ecosystems. By summarizing what is known, elucidating critical data gaps, and looking ahead to future opportunities and strategies to maintain and/or improve sagebrush-steppe habitats across the range of sage-grouse, the Initiative provided the Service with comprehensive information and suggested paths forward relative to the fire-invasives complex and provided land managers with guidance with respect to how and where conservation efforts can be successful.

As part of this effort, the Service worked with the Initiative to address the gaps identified in the 2013 WAFWA Gap Report, “Wildfire and Invasive Species in the West: Challenges that Hinder Current and Future Management and Protection of the Sagebrush-steppe Ecosystem,” (Mayer *et al.* 2013, entire). The WAFWA Gap Report identified and summarized the policy, fiscal, and science challenges that land managers encounter related to the control and reduction of the invasive plant/fire complex, especially as it relates to the status of the sage-grouse. In an effort to provide managers an opportunity to address the most important issues, the Gap Report identified the top five gaps. Beyond these top five, the Gap Report identified 17 additional gaps that should be evaluated by both Federal and State agencies as a means to help ameliorate the fire and invasive threat in the West.

In addition, the Initiative developed a technical report, "Using Resistance and Resilience Concepts to Reduce Impacts of Invasive Annual Grasses and Altered Fire Regimes on the Sagebrush Ecosystem and Greater Sage-Grouse – A Strategic Multi-scale Approach," (Chambers *et al.* 2014c, entire). This strategic approach integrates both landscape prioritization and site-scale decisions tools for the conservation of sagebrush habitats across the range of sage-grouse, with an emphasis on the western portion of the range. The use of landscape cover of sagebrush as an indicator of sage-grouse habitat, and the use of soil temperature and moisture regimes as an indicator of landscapes resilient to disturbance and resistant to invasive annual grasses can be used together to determine potential management strategies at the landscape scales at which sage-grouse depends (Wisdom and Chambers 2009, p. 740; Chambers *et al.* 2014c, p. 12).

The Initiative also summarized the current state of fire operations and fuels management functions in the Intermountain West into a status report, “Fires and Fuels Management Contributions to Sage-Grouse Conservation” (Havlina *et al.* 2014, entire). While other status reports have been conducted, there has been no synthesis of the fire and fuels management programs at the private, local, State, and Federal agency scales. The intent of the status report was to illustrate the type and responsiveness of efforts being made to facilitate the conservation

of sage-grouse and concludes with a series of recommendations to inform future policy and allocation decisions associated with fire and fuels management.

In addition to fuels management, invasive plant management also plays a role in the fire-invasives feedback loop. The Center for Invasive Species Management (CISM) was funded by the Great Basin LCC to assist the Initiative with a survey to gather and analyze data on agency and State weed management efforts within the range of the greater and Gunnison sage-grouse (CISM; Montana State University, Bozeman, MT). CISM received >200 completed responses to the survey. The on-line assessment provided information used to document the status and function of local, State and Federal invasive plant management programs, encompassing 11 western states, with additional information and data provided by western weed management experts. Using this information, the Initiative develop the “Invasive Plant Management and Greater Sage-Grouse Conservation: A Review and Status Report with Strategic Recommendations for Improvement,” (Lelmini et al. 2015, entire) which described the infrastructure, activities, and challenges of the western weed management community and offered recommendations to improve sage-grouse conservation.

Cooperative Weed Management Areas

Cooperative Weed Management Areas (CWMAs) provide a voluntary approach to control invasive species across the range of sage-grouse. Cooperative Weed Management Areas are partnerships between Federal, State, and local agencies, Tribes, individuals, and interested groups to manage both species designated by State agencies as noxious weeds, and invasive plants in a county or multi-county geographical area. As of 2015, Nevada, Utah, Colorado, Washington, Idaho, Montana, Wyoming, and North Dakota had between 95 and 100 percent of their States covered by CWMAs or county weed districts (Table 28-2; Goodwin 2015, pers. comm.). Oregon had between 65 and 85 percent coverage, while South Dakota had between 85 and 90 percent coverage (Table 28-2; Goodwin 2015, pers. comm.). Cooperative Weed Management Areas and county weed organizations are powerful tools to combat increasing invasive plant populations and degradation of sagebrush habitat. These cross-jurisdictional entities provide a collaborative approach to invasive plant management, coordinating control, and consolidating resources and workloads. However, because CWMAs are voluntary partnerships we cannot be assured that they will be implemented nor can we predict their effectiveness. In addition, the high coverage listed in Table 28-2 does not suggest high coverage of effectively implemented management. It is difficult to determine effectiveness across programs because each program has unique ecological settings and social contexts. Local differences make these factors prone to large variability, which include circumstances such as vegetation type, geographic area, the nature and extent of the invasives problem, resources available for treatment, workforce, collaboration, relationships, as well as concerns of the public and policy tools (Goodwin 2015, pers. comm.).

1537 Table 28-2 Proportion of States covered by CWMAs and county weed organizations within the range of
 1538 greater sage-grouse.

State	2005 Coverage (%) ¹	2015 Coverage (%)
Oregon	75–89	65–85 ²
Nevada	75–89	95–100
Utah	75–89	95–100
Colorado	75–89	95–100
Washington	90–100	95–100
Idaho	90–100	100
Montana	90–100	95–100
Wyoming	90–100	95–100
North Dakota	50–74	95
South Dakota	<25	85–90

1539 ¹ Center for Invasive Plant Management (2008).

1540 ² To date CISM has not received verification of coverage from Oregon.

1541

1542 *Draft National Seed Strategy for Rehabilitation and Restoration 2015-2020*

1543

1544 The National Seed Strategy (Strategy; BLM 2015, entire) is being developed to coordinate
 1545 efforts of land management agencies to conserve, restore, and rehabilitate landscapes,
 1546 ecosystems, and plant communities that have been altered by fire, development, or climate
 1547 change. The focus is on four aspects surrounding conservation and restoration through the
 1548 application, identifying needs, and ensuring the supply and availability of locally-adapted seed
 1549 and plant materials. It also includes identifying research needs and conducting research to
 1550 develop stocks, improve production and restoration of genetically appropriate seed and other
 1551 plant materials native to the sagebrush-steppe ecosystem as well as developing decision tools for
 1552 land managers, and developing communication strategies for land management agency
 1553 personnel and the general public. The Strategy is national in scope and engages both Federal and
 1554 non-Federal partners working toward restoration on public, Tribal, State, municipal, and private
 1555 lands over the next 50 years. Products and collaborations developed through the Strategy will
 1556 help land managers select appropriate plant materials to use in public and private ecological
 1557 restoration efforts at all scales. Use of genetically appropriate plant materials is strongly
 1558 encouraged; however, the Strategy does not preclude the use of non-native plant materials in the
 1559 instances where and when they are appropriate.

1560

1561 **Conservation Efforts Database**

1562

1563 The CED was developed by the Service and the USGS with the aim of collecting and analyzing
 1564 conservation efforts for sage-grouse as part of the Service's status review. This compilation of
 1565 conservation projects and plans at all scales and all stages of implementation across the range of
 1566 sage-grouse permits visualization, quantification, and assessment of the extent to which stressors
 1567 to the species are being addressed. The spatially explicit, web-based CED allows: (1) multiple
 1568 users to enter data and upload documents from different locations; (2) the linking of individual
 1569 conservation projects and plans to one or more of 13 threats to sage-grouse identified in the COT
 1570 Report (USFWS 2013, pp. 38–52); and (3) reporting that summarizes data at multiple spatial
 1571 scales (e.g., rangewide, MZs, and populations).

As part of our requirement to use the best available scientific and other information in our status review of the sage-grouse, on July 30, 2014, the Service sent a data request to 104 conservation partners (including U.S. federal agencies, States, Counties, Tribes, Canadian provincial agencies, and non-governmental stakeholders; hereafter, data providers). In addition to information about sage-grouse status, trends, and stressors, we requested that parties planning and implementing conservation activities for sage-grouse enter that information in the CED (USFWS 2014, pp. 1–2). The CED opened for data entry on August 11, 2014, and we provided instructional webinars and extensive assistance to partners in entering their information. We captured all project and plan information entered in the CED between August 2014 and April 23, 2015.

As of April 23, 2015 a total of 6,236 projects were entered into the CED; of these, only about 3,500 were entered in the CED as completed and effective by data providers (hereafter, completed acres). Given limited time to review and verify thousands of projects, we prioritized our assessment, focusing on CED projects that addressed the primary threats in each MZ, as identified in the COT Report (Table 28-3). This first filter yielded 2,705 projects, or approximately 75 percent of all “completed” projects in the CED, spanning more than 1.2 million ha (3 million ac), and 30,000 km (19,000 mi) (Table 28-4).

Table 28-3. Priority threats to sage-grouse and their habitat associated with each WAFWA Management Zone (MZ). Shaded cells indicate threats determined to be most important, or priority, in each MZ.

Management Zone	Agricultural Conversion	Conifer Encroachment	Energy Development	Fire	Infrastructure	Mining	Noxious Weeds/ Annual Grasses	Urbanization
I								
II								
III								
IV								
V								
VI								
VII								

We next filtered our assessment by reviewing the effectiveness of the largest projects in the database (200 ha; 500 ac or greater). We prioritized the largest projects to ensure that the extensive time invested by numerous Service biologists resulted in review of the majority of “completed” acres in the CED. This second filter lead to the Service’s review of 1,074 individual projects, representing more than 800,000 ha (2 million ac) and 29,000 km (18,000 mi) of conservation effort, or nearly 40 percent of all projects addressing priority threats (Table 28-4). Service biologists used a combination of information entered in the CED by data providers, the published literature, communications with experts, and their professional knowledge and experience to assess whether each project was reasonably certain to be effective and documented their rationale in the CED.

Eight hundred, or 75 percent, of all reviewed projects were determined to be effective (hereafter, “effective acres”) by Service biologists. These projects represent approximately 700,000 ha (1.8

million ac) and 26,000 km (16,000 m)⁴. (Tables 28.4). For perspective, the approximate total of effective acres represents approximately 1.1 percent of the current occupied range of sage-grouse and 0.5 percent of the area of all MZs combined; completed acres cover 12.6 percent of the occupied range of sage-grouse, but most of completed areas addressed grazing and range management exclusively (Table 28-4). Management Zone II is the only MZ where effective acres reach one percent of the occupied range of sage-grouse. In comparing effective and completed acres with occupied range and MZ area by threat (Table 28-5), the effective acres amounted to more than one percent of the occupied range only for projects addressing agricultural conversion where this is a priority threat (MZ I). For additional details of CED projects that addressed individual threats, see the *Impacts Analysis* section of this report.

⁴ Many projects, especially large easements and land acquisitions, addressed multiple threats and/or occurred in multiple MZs. However, the number of acres reported for each project were not allocated among MZs or threats in the CED. The total number of acres calculated for projects addressing the priority threats in each MZ thus include considerable overlap. The major sources of this overlap are five projects that occur in MZs I, II, and IV. Combined, these projects account for a total of about 276,000 ha (681,000 unique acres) that address: Agricultural Conversion, Energy Development, Noxious Weeds/Annual Grasses, Infrastructure, and Urbanization in Montana.

1617 Table 28-4. Summary of Phased Assessment process for CED projects.

CED Phased Assessment	No. of Projects	Acres	Miles^a	Structures Removed*
Projects entered in CED as completed and effective by data providers	3,505	21,963,122 ^b	19,571	53
Projects addressing priority threats in MZs where they occurred	2,705	3,016,650	19,564	53
Projects reviewed for effectiveness by USFWS	1,074	2,118,765	18,011	14
Projects assessed as effective in USFWS review	800	1,852,822	16,319	12

^a The Infrastructure chapter in the Impacts Analysis section of this report includes more detailed information about CED projects reported in miles and structures removed.

^b approximately 745 projects covering 19 million of these acres addressed only grazing/range management. These projects were not carried forward in our first phase of analysis because grazing was not considered a priority threat.

Table 28-.5. Summary by threat of CED acres assessed as effective in Service review and entered as "completed" by data providers.

PRIORITY THREAT	Agricultural Conversion	Conifer Encroachment	Energy Development	Fire	Infrastructure	Invasive Plants	Mining	Urbanization
Priority Threat MZs	I, VI	III, IV, V, VII	I, VII	III, IV, V, VI	ALL	ALL	II, III, V	II, III, IV, V
TOTAL EFFECTIVE ACRES^{a, c}	711,970	200,885	293,642	47,292	364,078	266,939	293,479	1,030,178
Percent of Occupied Range	0.41	0.12	0.17	0.03	0.21	0.15	0.17	0.59
TOTAL COMPLETED ACRES^{b, c}	804,149	363,303	683,648	275,788	378,988	1,304,782	311,241	1,094,251
Percent of Occupied Range	0.46	0.21	0.39	0.16	0.22	0.75	0.18	0.63

^a Completed and effective as assessed by data providers and FWS.

^b completed and effective as assessed by data providers.

^c Because numerous projects were associated with more than one threat in the CED, the total acres listed for each threat are not unique to that threat, and totals cannot be summed across threats to obtain grand totals for effective acres or completed acres.

Relatively few completed projects with metrics reported in kilometers and/or miles or structures removed were entered in the CED (109 and 14 projects, respectively). We reviewed nearly all of these, prioritizing the projects with the greatest metric values and those that addressed priority threats in the MZs where they occurred. The majority of these projects addressed the threat of infrastructure.

Approximately 25 percent of CED projects reviewed were not deemed effective by Service biologists. In the majority of these cases, the CED records lacked sufficient explanation of the project's effectiveness in addressing the identified threat to sage-grouse.

Projects entered in the CED as completed and effective by data providers but not included in our phased assessment addressed threats that we determined were not primary drivers of sage-grouse status in the MZs where they were conducted. We will review these projects if needed, depending on the outcome of our initial status recommendation.

Farm Bill Conservation Programs

Conservation programs for sage-grouse have been implemented by the USDA-NRCS and Farm Service Agency (FSA) for many years, starting with the CRP in 1985. This species report focuses on the programs authorized under the Food, Conservation, and Energy Act of 2008 (hereafter the 2008 Farm Bill), and continued with the Agricultural Act of 2014 (hereafter, the 2014 Farm Bill). The Farm Bill conservation programs provide both technical and financial assistance to landowners in the form of conservation planning assistance, payments to offset a portion of the cost associated with applying conservation practices, and easement or rental payments for long-term conservation.

Sage Grouse Initiative

The NRCS Sage Grouse Initiative (SGI) is a collaborative effort across all 11 States that have sage-grouse populations that works to implement conservation practices which alleviate threats to sage-grouse while improving the sustainability of working ranches (NRCS 2015, entire). The SGI started in 2010 using programs authorized under the 2008 Farm Bill and continued with the 2014 Farm Bill to help landowners plan and implement conservation practices and Resource Management Systems to maintain and enhance sage-grouse habitat.

Although participation in SGI programs is voluntary, participants that receive financial assistance enter into binding contracts or easements to ensure that conservation practices are applied according to schedule and in compliance with NRCS standards and specifications. As part of implementation, the SGI includes a monitoring and evaluation component that measures the response of sage-grouse populations and associated vital rates in order to gauge effectiveness and provide an adaptive management framework to SGI delivery.

The Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentive Program (WHIP; WHIP was combined with EQIP in the 2014 Farm Bill), are used to fund and implement habitat improvement practices of SGI. NRCS also works closely with the Farm Service Agency to further sage-grouse conservation through CRP. Grassland Reserve Program (GRP) and Farm and Ranch Lands Protection Program (FRPP) are critical to ensure more long-term habitat protection through rental agreements and conservation easements. The GRP, FRPP, and Wetland Reserve Program were combined to create the Agricultural Conservation Easement Program (ACEP) in the 2014 Farm Bill.

The SGI will result in restoration of habitat by either seeding/planting (active restoration) or by implementing grazing practices and fire prevention measures to allow the natural re-establishment of sagebrush to occur (passive restoration) during the term of the individual contracts (between 2 and 10 years). The SGI also strategically targets sage-grouse core areas, which receive the highest priority for financial and technical assistance. Participating owners are less likely to convert sage-grouse habitats to unsuitable habitat, or to subdivide their properties while enrolled in the cost-share contracts offered by NRCS through the SGI.

All conservation plans developed under the SGI have Upland Wildlife Habitat Management as the umbrella practice and are implemented specifically to benefit sage-grouse populations and their habitats. The Upland Wildlife Habitat Management practice standard requires a habitat evaluation be conducted and limiting factors be removed or reduced in their order of significance. The purpose of the practice is to treat upland wildlife habitat concerns identified during the conservation planning process to: (1) enable movement; or (2) provide shelter, cover, and food in proper amounts, locations and times to sustain sage-grouse during a portion of its life cycle. Specific practice standards are used by NRCS to address the limiting factors to the species and are implemented to achieve that objective.

In 2010, the Service worked in collaboration with the NRCS to develop specific conservation measures for 40 conservation practice standards used in SGI and developed an ESA Section 7 Conference Report (USFWS 2010, entire). In the Conference Report, the Service concluded that implementation of the specified conservation measures in SGI would be expected to benefit sage-grouse by maintaining, enhancing, and restoring sage-grouse populations and their habitats as well as by reducing the threats of direct mortality. The SGI conservation measures are designed to maintain and enhance habitat and decrease fragmentation which is the greatest threat to sage-grouse.

NRCS and their partners have made significant accomplishments under SGI for the conservation of sage-grouse. Conservation implementation of SGI prioritizes areas with the highest densities of sage-grouse and has been achieved through accelerated conservation easements, conifer removal, and improvements in range management. With participation in all 11 states, 1,129 ranches have participated in SGI. Table 28-6 summarizes the acres of conservation implemented by MZ and Population.

Table 28.6. Acres of certified complete or contracted in SGI by population, 2010 to 2014 (from NRCS 2015, p. X)

MZ	Pop.	Grazing Systems		Easements		Conifer Removal		Seeding		Fence Marked or Removed	
		acres	% in PAC	acres	% in PAC	acres	% in PAC	acres	% in PAC	miles	% in PAC
I	Dakotas	329,055	89					2,475	89	11	93
	Northern Montana	4,411	73	40,807	79						
	Powder River Basin	671,954	54	8,720	60	181	0			10	98
	Yellowstone Watershed	338,849	83	16,354	97			5,122	15	91	95
	Other	26,000	49							<1	100
II	Middle Park	16	100	1,288	100			11	100		
	Jackson Hole			70	100						

III	Wyoming Basin	327,652	83	166,831	72	1,099	94	4	100	5	100
	Rich-Morgan-Summit	8,596	100	465	100	455	100				
	Unitah	126,327	100			1,748	100			8	100
	North Park	12,182	100	6,067	100					<1	100
	Northwest Colorado	48,677	47	52,039	97	223	100	2,512	100	10	87
	Other	11,000	84	8,450	88	26	0			<1	100
	Strawberry					7	100				
	Sheeprock Mountains	3,959	100			1,204	100	720	100	1	100
	Parker Mountain-Emery			93	100	509	100	226	100	<1	100
	Panguitch	1,297	100	18	100	358	100	66	100	<1	100
	Ibapah			422	100						
	Hamlin Valley	7,248	100			3,181	100	1,917	100	1	100
	Southern Great Basin	1,188	33			5,858	83	1,072	100	7	100
	North Mono Lake	13	100	6,085	100	2,185	100			1	100
	Pine Nut					963	100				
	Other	23,852	63	4,573	100	4,590	77	1,533	19	<1	100
	Baker	10,295	100			5,795	100				
	East-Central ID			419	0						
	SW Montana	31,179	100	4,125	99					5	100
	Snake, Salmon, Beaverhead	198,284	100	64,314	99	290	100	1,730	100	62	100
	Belt Mountains	4,204				142	0	320	0	<1	0
	Weiser	11,593						257	0		
IV	Northern Great Basin	38,053	87	2,477	0	137,501	74	2,445	40	27	83
	Box Elder	2,992	100	16,230	100	59,990	100	22,861	100	1	100
	Other	18,330	33	10,602	4	2,381	100	2,127	73	<1	0
	Central OR	4,522	100	1,690	0	69,291	85	20		6	63
	Klamath	12	83	679	0	11,229	77	535	96	18	100
	Warm Springs Valley	3	100	902	100	15					
	Western Great Basin	64,359	78	20,253	81	75,685	76	496	97	54	56
	Other	19,410	27	5,347	23	19,375	72	34	100	2	78
	Moses	60,037	100	2,127	100			280	100	3	100
V											
VI											

	Coulee									
	Crab Creek	9,515	100	2,242	100					
	Other	13,521	15				397	0	26	37
VII	Other	9,061		8,193	962	0	960	0	<1	0
Tota		2,437,64		451,88	405,24		48,12			
I		5	75	4	79	1	81	0	76	350
										79

Approximately 425.5 million dollars has been invested through SGI over approximately 1,7=8 million ha (4.4 million ac), with 76 percent of investments made inside PACs (Figure 28-1). The Chief of NRCS has committed an additional 198 million dollars for SGI starting in 2015, through the life of the current Farm Bill (2018). Implementation of SGI has been accomplished through NRCS' Strategic Watershed Action Team (SWAT) since 2011, which increased the field capacity available to work with landowners. Additionally, SGI has a science advisor to help prioritize and guide SGI science.

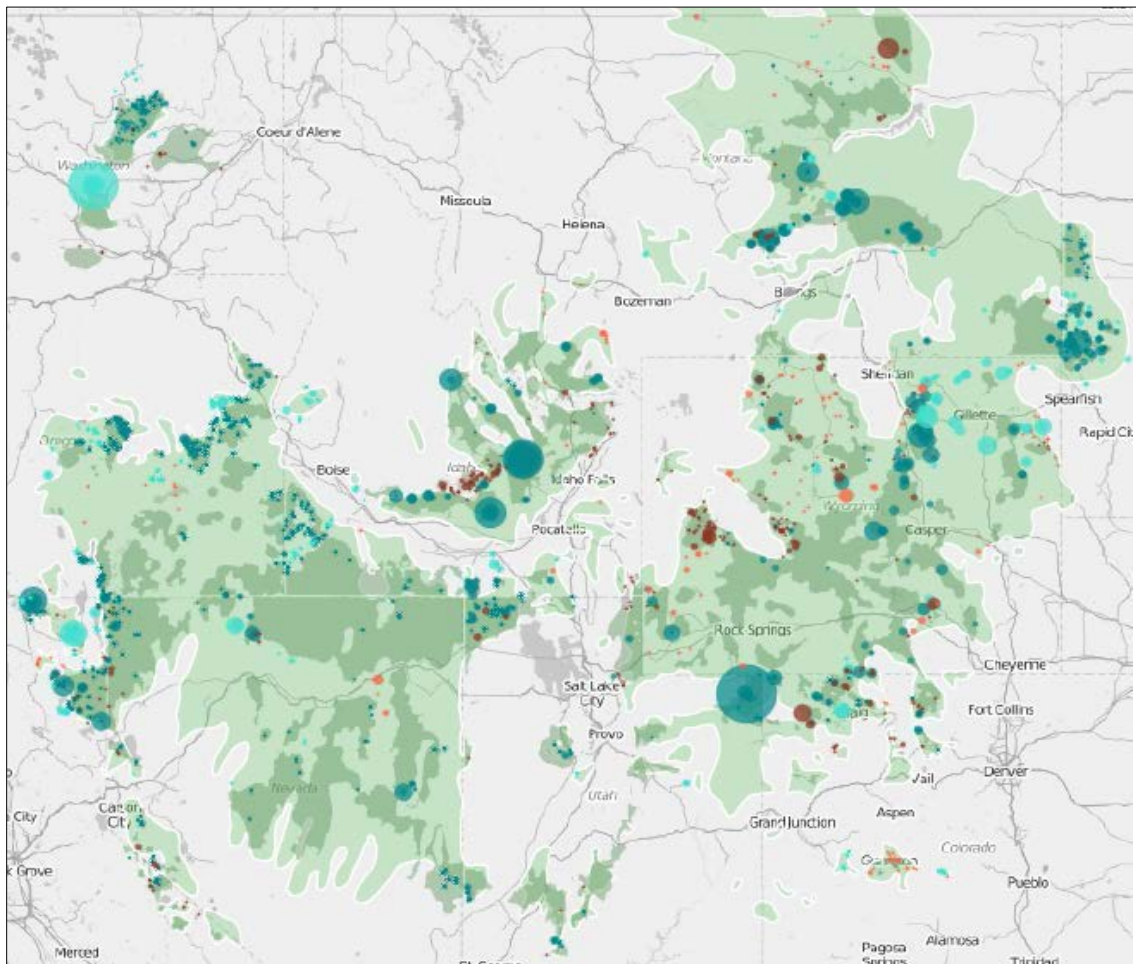


Figure 281. SGI (EQIP and WHIP; 2010-2014) contract locations are shown in blue. NRCS easements (WRP, GRP, FRPP; 1992-2013) are shown in brown. Light colors represent locations outside of PAC boundaries, and dark colors represent locations within PACs. (source: NRCS 2015, p. 5).

Conservation easements are an effective mechanism for keeping sage-grouse habitats intact by removing impacts of ex-urban development and agricultural conversion threats (USFWS 2013). Most easements for sage-grouse are located inside PACs (79 percent) and 94 percent provide permanent protection. Conservation easements through SGI totaled 182,870 ha (451,884 ac) through fiscal year 2013.

Conifer removal has been implemented as a primary SGI conservation practice, allowing restoration of sage-steppe (Baruch-Mordo *et al.* 2013, p. 240). The SGI has targeted mechanical removal of conifers in the early phases of woodland succession, reclaiming 163,995 ha (405,241 ac) of otherwise suitable habitat. Overall, 81 percent of cuts were located in PACs, targeting 84 percent of the removal towards populations most impacted by conifer expansion in the Great Basin.

Rangeland health inside PACs has been improved through SGI practices by applying grazing systems, re-vegetating former rangeland with sagebrush and perennial grasses, and controlling invasives. The SGI enacts a prescribed grazing approach, which balances forage availability with livestock demand and maintains ecosystem function by adjusting the timing, frequency, and duration of grazing. Grazing systems have been implemented on over 900,000 ha (about 2.4 million ac; 75 percent within PACs); seeding projects have occurred on over 19,000 ha (over 48,000 ac; 76 percent within PACs); and weed management projects were implemented on over 6,000 ha (over 15,509 ac; 83 percent within PACs).

SGI employs three levels of monitoring to implement and subsequently evaluate success of conservation practices. A first level of monitoring is at the ranch-scale conducted by property owners, a second level of monitoring of vegetation changes and response of sage-grouse populations conducted by independent scientists and a third level of monitoring detects status and trends in agriculture and land use across the U.S. using NRCS National Resource Inventory. The documented results will inform management of ways to improve effectiveness of NRCS programs. Measuring sage-grouse response to NRCS practices is a priority in conserving sage-grouse populations on working ranches in the West.

Conservation Reserve Program

The USDA-FSA manages the CRP. The CRP provides annual rental payments to agricultural producers to establish conservation cover on ecologically significant cropland and pastureland. The 2014 Farm Bill set enrollment at over 10 million ha (24 million ac) by fiscal year 2018 (reduced from 1.3 million ha [32 million ac]), and allowed for enrollment of over 800,000 ha (up to two million ac) of working grasslands in the CRP, similar to previous Farm Bills' contract option under the repealed GRP (Stubbs 2015, p. 9). Producers enrolling in CRP can choose from

a variety of CRP Conservation Practices (which are different from the NRCS National Conservation Practice Standards).

Enrollment in CRP is through the competitive General Sign-Up, the Continuous CRP (CCRP) Sign-Up, or through the State Acres for Wildlife Enhancement (SAFE) program. Under the General Sign-Up, offers for CRP contracts are ranked according to the Environmental Benefits Index and cost, and each eligible offer is ranked in comparison to all other offers nationwide. CRP contracts are generally for 10 years. General enrollment is only offered at specific times, and no general sign-up is expected for 2015 (Stubbs 2015, p. 9). Under CCRP, croplands that can provide habitat for priority wildlife can be enrolled at any time, are not subject to competitive bidding, and typically have 10 to 15 year contracts. CCRP contracts are selected based on the type of conservation practice the landowner chooses to install (NACBI 2015, p. 37). The SAFE program gives special consideration to wildlife in partnership with state fish and wildlife management agencies and/or tribes. SAFE is non-competitive, and typically has 10 to 15 year contracts (USDA 2013, p. 2). Grouse SAFE projects also prioritize enrollment of lands proximal to lek sites (Stinson and Schroeder 2014, p. 33). Generally, no more than 25 percent of a county's cropland can be enrolled in CRP any given time. However, FSA can waive this limit in order to enroll cropland in CCRP or SAFE, if the county agrees, as has occurred in Douglas County, Washington.

The CRP, CCRP, and SAFE can be successful at converting agricultural lands back into shrub-steppe. The quality of habitat depends on the length of time that the land is enrolled, the initial planting regime, and the frequency, intensity, and timing of grazing and haying in the CRP and SAFE fields. In some areas across the range of sage-grouse, and particularly in Washington, CRP lands provide important habitat for the species (Schroeder and Vander Haegen, 2011, p. 529). The CRP is considered a long-term investment since sagebrush requires years to mature, so the age of the CRP affects the value of the habitat to sage-grouse (Schroeder and Vander Haegen 2011, p. 517). The non-competitive element and wildlife-specific focus of the CCRP and SAFE programs help achieve value of habitat. Some of the CRP lands in Washington, have been enrolled for more than 20 years and are beginning to resemble native shrub-steppe habitat in structure (Stinson 2014, p. 16). For CRP and SAFE lands that have been enrolled for 10 or 20 years, the sagebrush may encroach and become established even if it was not in the original planting mix (Stinson and Schroeder 2014, p. 28). In 2010, a large lek (65 birds) was discovered on CRP land in Washington that was unsuitable cropland until relatively recently (Stinson and Schroeder 2014, p. 3).

However, reliance on CRP lands involves significant uncertainty as landowners may choose not to re-enroll lands in CRP, CCRP, or SAFE if there is a dramatic increase in the price of wheat or other crops (Stinson et al. 2004, p. 52). The 2014 Farm Bill also amended the emergency harvesting, grazing provisions for cases such as drought, and also permits other use of forage, in some cases, without a reduction in rental rate. The 2014 Farm Bill also allows a one time, penalty-free, early-out in Fiscal Year 2015 for contracts enrolled longer than five years and containing no environmentally sensitive practices (Stubbs 2015, p. 9). However, how this relates to sage-grouse conservation is not yet known.

The 2014 Farm Bill retained the BCAP, which provides financial assistance to agricultural producers to establish and produce eligible crops for the conversion to bioenergy products (USDA 2015, p. 1). As CRP contracts expire, the BCAP program could result in greater incentives to take land out of CRP and put it into production for biofuels (Walker 2009, pers. comm.). All of these changes could affect the amount of land in CRP, and in turn the habitat value provided to greater sage-grouse.

CSP Enhancement Activities

The 2014 Farm Bill also reauthorized the Conservation Stewardship Program (CSP), managed by NRCS. The CSP provides financial and technical assistance to promote the conservation of private working lands. Contracts (five years in length with the option of extension) are based on meeting or exceeding a “stewardship threshold.” Payments are based on the actual costs of installing conservation measures, any foregone income, and the value of the expected environmental outcomes. Enrollment is offered through a continuous sign-up and applications are accepted year-round. The 2014 farm bill amendments reduced the enrollment cap from over 5 million ha (about 13 million ac) annually to about 4 million ha (10 million ac) annually and provided more flexible transition options for land coming out of CRP (Stubbs 2015, p. 12).

The CSP practices are installed at a level of management intensity that exceeds the current level for a given resource concern, and those directly related to a conservation practice standard are applied in a manner that exceeds the minimum treatment requirements of the standard. In essence, NRCS is rewarding private landowners who are already performing good land stewardship and seeking to further enhance these resource benefits through financial incentives. The CSP is unique among Farm Bill Programs in that participants receive an annual land use payment for installing additional conservation activities: the higher the operational performance (benefits to the resource), the higher the payment. NRCS is preparing to offer CSP as part of SGI for the first time 2015. The SGI CSP will provide the participants financial incentives and planning assistance to maintain the highest possible quality of sage-grouse habitat on their land as well as the ability to address all outstanding threats to sage-grouse.

Regional Conservation Partnership Program

Created in the 2014 Farm Bill from four repealed programs, the Regional Conservation Partnership Program (RCPP) is administered by NRCS and provides financial and technical assistance for multi-state or watershed-scale projects. The RCPP creates partnership opportunities to target and leverage federal conservation funding for specific areas and resource concerns. Project areas are defined by eligible partners and are selected through a competitive state or national competition. Partnership agreements are for five years with a possible one-year extension and partners must provide a significant portion of the overall cost of the project (Stubbs 2015, p. 12).

The RCPP of significance for sage grouse conservation is titled, “The Oregon Model to Protect Sage-Grouse,” led by the Oregon Association of Conservation Districts. The NRCS awarded a 9 million dollar RCPP grant to eight Oregon Soil and Water Conservation Districts (SWCDs) with sage-grouse habitat. The funds will be provided to landowners who enroll in CCAAs to implement conservation measures to specifically remove or reduce the identified threats to sage-grouse on their lands. It provides the resources needed to implement six CCAAs in Oregon on about 1.4 million ha (3.4 million ac) of private land including all sage-grouse habitat on private lands in Baker, Cook, Deschutes, Grant, Harney, Lake, Malheur, and Union counties. This effort is tied to larger state population targets for implementing innovative comprehensive conservation across Oregon and relies on the collective efforts of many partners.

Sodsaver Provisions

The 2014 Farm Bill includes a geographically limited “Sodsaver” provision to discourage producers from converting native prairies and grasslands to annually tilled crops. Producers who break out new agricultural land from native grasslands after February 7, 2014 will be eligible only for reduced benefits on the broken out acres from the federal crop insurance and non-insured crop disaster assistance programs for four years. Although not nationally applicable, the provision does apply to the Prairie Pothole Region states (NABCI 2015, p. 23), which could be of significance for sage-grouse populations in Montana, North Dakota, and South Dakota.

Candidate Conservation Agreements

Multiple CCAAs and CCAs have been completed for sage-grouse (Tables 28-7 and 28-8). The majority of CCAAs and CCAs have focused on threats associated with range management, including grazing, ranch activities, and minor ranch development. A total of 636,243 ha (1,572,191 ac) are currently enrolled in CCAAs and 755,882 ha (1,867,826 ac) are enrolled in CCAs.

A CCAAs is a conservation agreement entered into by the Service, a landowner, and potentially other parties. The purpose of a CCAA is to facilitate the conservation of proposed and candidate species, and species likely to become candidates, to contribute to precluding the need to list the species. Any non-Federal property owner who has control over the threats on the property to be addressed by a CCAA and who meets general permit conditions (50 CFR Part 13) can enroll in a CCAA. Enrollment in a CCAA is entirely voluntary. Although we encourage participants to remain enrolled for the duration of a CCAA, they may terminate enrollment for cause.

The CCAA program provides regulatory assurances to property owners as an incentive for participation. The Service provides assurances to CCAA enrollees that we will not require additional conservation measures nor impose additional land, water, or resource use restrictions beyond those voluntarily agreed to and described in the CCAA, even if the covered species becomes listed and as long as the CCAA’s conservation measures are being properly implemented. Assurances apply only to those species adequately covered by conservation measures in the CCAA. These assurances are provided through the issuance of the section

10(a)(1)(A) enhancement of survival permit, which also authorizes a specified amount of take incidental to implementing the CCAA and covered land uses on the enrolled property. The permit would become effective if and when the species is listed.

Before the Service can enter into a CCAA and issue a permit, we must determine that the CCAA's conservation measures are designed to address all the threats on the enrolled properties over which the property owners would have control and that the CCAA standard would be met. The CCAA standard is that the benefits of the CCAA's conservation measures, when combined with the benefits that would be achieved if it is assumed that similar conservation measures were also to be implemented to address the threats on other necessary properties, would preclude or remove any need to list the covered species. "Other necessary properties" are other properties on which conservation measures would have to be implemented in order to preclude or remove any need to list the covered species. To determine whether a CCAA meets the standard, the Service primarily examines the extent of the reduction of threats on the covered area, the degree to which the conservation benefits offset the impacts from any incidental take that might occur, the level of additional conservation benefits to the covered species, and the hypothetical collective effects to the covered species if activities under the CCAA were conducted on all other necessary properties. The level of conservation benefit that meets the CCAA standard is more than just a net conservation benefit to the species – the CCAA's conservation actions must reduce all the threats on enrolled properties (over which the property owner has control) to the point, where, if comparable actions were undertaken on all properties in the species' range, the declining trend would be reversed and there would be no need to list the species. If no threats exist on the enrolled property, to meet the CCAA standard the property owner would simply continue ongoing practices and commit to prevent future threats.

The CCAs are similar to CCAAs but do not provide assurances. The CCAs can be between the Service and other Federal, State, or local agencies, or with private sector parties, and may include both Federal and non-Federal lands and waters. Under a CCA, no Enhancement of Survival Permit is issued. This means there is no permit that authorizes incidental take of the covered species in the event listing occurs, and no assurances are provided by the Service. In situations where a candidate or at-risk species is found on both non-Federal and Federal land, a CCA and a CCAA can be used in a complementary fashion to address threats and management needs on both.

1941 Table 28-7. Completed CCAAs for greater sage-grouse as of April 16, 2015.

Name/Location	Covered Area (acres)	Acres Enrolled	Number of landowners enrolled/Type of CCAA	Land Uses	Date Completed
WY Statewide GRSB Umbrella CCAA	Entire State of WY	372,632	28 - Umbrella CCAA	Ranch management (ranch operations and development, rangeland treatments, recreation)	11/8/2013
CCAA for Greater Sage-grouse for rangelands owned and leased by Mr. & Mrs. Moore., Baker and Malheur Counties, OR	7,290	7,290	1 - Individual CCAA with Mr. and Mrs. Moore	Ranch management (ranch operations and development, rangeland treatments, recreation)	11/13/2014
Greater sage-grouse Programmatic CCAA for Private Rangelands in Harney Co., OR	1,170,000	528,807	56 - Programmatic CCAA	Ranch management (ranch operations and development, rangeland treatments, recreation)	5/21/2014
Greater sage-grouse Programmatic CCAA for Private Rangelands in Baker and Union Counties, OR	485,000	45,550	9 - Programmatic CCAA	Ranch management (ranch operations and development, rangeland treatments, recreation)	3/18/2015

Name/Location	Covered Area (acres)	Acres Enrolled	Number of landowners enrolled/Type of CCAA	Land Uses	Date Completed
Greater sage-grouse Programmatic CCAA for Private Rangelands in Crook and Deschutes Counties, OR	486,000	246,900	8 - Programmatic CCAA	Ranch management (ranch operations and development, rangeland treatments, recreation)	3/18/2015
Greater sage-grouse Programmatic CCAA for Private Rangelands in Lake Co., OR	400,000	39,000	7 - Programmatic CCAA	Rangeland treatments, livestock management, recreation, farm operations, ranch developments	3/18/2015
Greater sage-grouse Programmatic CCAA for Private Rangelands in Malheur Co., OR	887,000	360,571	31 - Programmatic	Rangeland treatments, livestock management, recreation, farm operations, ranch developments	3/18/2015
Greater sage-grouse Programmatic CCAA for Private Rangelands in Grant Co., OR	57,000	4,715	1 - Programmatic CCAA	Ranch management (ranch operations and development, rangeland treatments, recreation)	3/18/2015

Name/Location	Covered Area (acres)	Acres Enrolled	Number of landowners enrolled/Type of CCAA	Land Uses	Date Completed
Programmatic CCAA for Greater Sage-grouse in the West Central Planning Area.	645,000	None anticipated	None to date - Programmatic CCAA	Ranch management (ranch operations and development, rangeland treatments, recreation)	2/1/2010
Greater sage-grouse CCAA Between OR Dept. of State Lands and USFWS	611,000	611,000 (Still in public comment, anticipated to be finalized soon for all)	1 - Individual CCAA with OR Department of State Lands	Rangeland management	TBD
Total		2,216,465 acres enrolled			

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1945 Table 28-8. Completed CCAs for greater sage-grouse as of April 16, 2015.

Name	Covered Area Size	Acres Enrolled	Landowners enrolled	Land Uses	Date of Completion
WY Statewide GSG CCA with BLM	Entire State of WY	94,854	1 - CCA with BLM	Range management on BLM land	11/8/2013
Greater Sage-Grouse CCA for Rangeland Management Practices on BLM lands in Oregon	10,210,000 acres	2,948,436	1 - CCA with BLM	BLM grazing allotment management	5/30/2013
CCA for Greater Sage-Grouse on the Idaho National Laboratory site	569,000 acres	569,000 acres	1 - CCA with Idaho National Lab	Maintenance and operations related to DOE activities on the site; Does not include grazing that is managed by BLM	10/2/2014
Total		3,612,290 acres enrolled			

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Mitigation Banking

Mitigation programs, such as conservation banks and habitat credit exchanges, offer a means to leverage environmental markets to aid in the conservation of sage-grouse. These programs can provide regulatory certainty, measurable conservation outcomes, and a streamlined means to mitigate for unavoidable impacts. Two mitigation banks specifically designed for sage-grouse conservation have been developed and approved by the Service and several state-wide habitat credit trading programs are in advanced stages of development (Table 28-9).

Table 28-9. Summary and status of mitigation banks for greater sage-grouse (current as of April 23, 2015).

Name of Mitigation Program	MZ	Acres	Type	Use	Regulatory Use
Sweetwater River Conservancy Greater Sage-Grouse Habitat Bank	I, II	Up to 50,576 acres of sage-grouse habitat on deeded ranches	Place-based Habitat Conservation Bank	Offset unavoidable impacts in WY.	FWS will consider credits for mitigation use post-listing.*
Barrick Nevada Sage-Grouse Bank Enabling Agreement	III	119,222 acres (includes the potential impact area for the mine and area for compensatory credits)	Place-based Single-user Debit and Credit System Agreement with Net Conservation Gain goal	Measure unavoidable impacts from mining operations and provide credits to offset them on Barrick sites	BLM and FWS will consider debit methods and credit use pre- or post-listing.*
CO Habitat Exchange	II, VII	Up to all sage-grouse habitat in the state.	Debit and Credit Program with Net Conservation Gain goal	Measure unavoidable impacts and provide credits to offset them in CO.	Not yet determined.
WY Credit Exchange	I, II	Up to all sage-grouse habitat in the state.	Debit and Credit Program with Net Conservation Gain goal	Measure unavoidable impacts and provide credits to offset them in WY.	Not yet determined.
NV Conservation Credit System	III, IV, V	Up to all sage-grouse habitat in the state	Debit and Credit Program with Net Conservation Gain goal	Measure unavoidable impacts and provide credits to offset them in NV.	Not yet determined.
Oregon Mitigation Program	IV, V	Up to all sage-grouse habitat in the state	Debit and Credit Program with Net Conservation Gain goal	Measure unavoidable impacts and provide credits to offset them in OR.	Not yet determined.

* An agreement has been signed with FWS.

1964 WY – *Sweetwater River Conservancy (SRC) Bank*

1965

1966 The SRC Bank followed a conservation banking review process and was signed by the Service,
1967 December 2014. The Bank may provide up to 20,467 ha (50,576 ac) of sage-grouse habitat on
1968 deeded ranch lands to service impacts from anywhere in the state. Credits are available through
1969 preservation of existing habitat (currently 32,000 credits) with additional credits possible in the
1970 future through restoration and enhancement activities. Credits will most likely be used to meet
1971 offset requirements when energy projects are developed on BLM sage-grouse habitat, but the
1972 Bank may sell credits to any user. The SRC Bank credit methodology is not directly connected
1973 to Wyoming or BLM debiting methodologies. Credits created pre- or post-listing can be
1974 recognized by the Service for use in mitigating impacts through ESA consultation in a post-
1975 listing environment.

1976

1977 NV – *Barrick Bank Enabling Agreement (BEA)*

1978

1979 The Barrick BEA, signed in March 2015, outlines a process for the Service and BLM approval
1980 on conservation projects to offset impacts from mining operations and also allows for the Service
1981 and BLM to continually advise Barrick on their methodology. Barrick has agreed to use a
1982 methodology developed by the Nature Conservancy to measure impacts (debits) generated by
1983 future mining actions and uplift (credits) generated by conservation actions on Barrick-controlled
1984 sage-grouse habitat, including their private holdings and federal grazing allotments. Barrick can
1985 use those credits pre-listing to satisfy BLM mitigation requirements or, if needed in a post-listing
1986 environment, to help meet any required compensatory mitigation from BLM and/or the Service
1987 to offset unavoidable impacts. The BEA is limited to Barrick property and allotments in two
1988 counties in Nevada though language in the agreement may allow interaction with the state
1989 conservation credit system in the future. The overall goal of the BEA is to provide net
1990 conservation gain.

1991

1992 CO *Habitat Exchange*, NV *Conservation Credit System*, OR *Mitigation Program*, WY
1993 *Conservation Exchange*

1994

1995 The intent of these four exchange programs are provide a consistent methodology to measure
1996 project development impacts (debits) and incentivize conservation benefits (credits) for a net
1997 conservation gain to sage-grouse. The programs would like confirmation from the Service on
1998 their methodologies, including how debits are measured. The programs would also like the
1999 Service to affirm that the value of credits generated prior to listing would be recognized and
2000 could be used by project developers, if needed in a post-listing environment, to count towards
2001 any required compensatory mitigation to offset unavoidable impacts.

2002

2003 The Colorado, Wyoming, and Oregon programs are still under development while the Nevada
2004 program is complete and operational. The Nevada and Oregon programs will be administered by
2005 the state while the Colorado and Wyoming programs will have a third party administrator with
2006 some level of state oversight. The Oregon program will operate primarily as an in lieu fee
2007 program. All programs provide a method for calculating compensatory mitigation, but the

process for ensuring avoidance and minimization (especially outside BLM/USFS authority) varies across programs and is generally uncertain.

The Service has not signed agreements with any of these programs to date, though all have or will request this. The Service Mitigation Review Team (MRT) is currently reviewing the Colorado Habitat Exchange to determine what level regulatory predictability can be provided. Wyoming is going through a state review team currently. The Wyoming and Nevada programs will be reviewed by the MRT once the Colorado review is completed. The Oregon program is expected to be submitted for review in July 2015.

Canadian Non-Regulatory Conservation Efforts

An interprovincial sage-grouse recovery team was formed in 1997 and has worked with numerous stakeholders to prepare a recovery strategy. First prepared in 2001, the strategy was updated by Canada's Minister of Environment in January 2008 (Lungle and Pruss 2008, entire). As noted above, an amended version of the strategy was published in December 2014 (Environment Canada 2014, entire). In addition to identification of critical habitat, the 2014 amended recovery strategy sets long-term population objectives and includes strategies and planned activities to halt and reverse sage-grouse population decline in Canada (Environment Canada 2014, pp. 14, 19–20). Saskatchewan produced a conservation plan for sage-grouse in 2014 to incorporate recent science and other information about the status and conservation of the species, but this is considered to be an interim document while the South of Divide Multi-species Action Plan initiative for southwest Saskatchewan, which includes sage-grouse, is completed in 2015 (Weiss and Prieto 2014, p. 2). The goals of the 2014 conservation plan are to ensure the persistence of sage-grouse in Saskatchewan and to manage sage-grouse habitat in an ecosystem context, and the plan provides recommended approaches to those ends (Weiss and Prieto, p. 17–21).

In 2014 the Canadian government implemented a new fund under its National Conservation Plan called Species at Risk Partnerships on Agricultural Land (SARPAL). Two million Canadian dollars per year (for five years, initially) has been allocated for habitat conservation and protection measures in prairie Canada through partnerships with agriculture producers or producer organizations. Much of this funding is expected to be allocated to protection, enhancement and active management of sage-grouse and associated sagebrush shrub-steppe habitats in Canada. The SARPAL initiative is intended to pilot conservation measures for securing critical habitat that avoid or act as alternatives to federal regulation under SARA (R. Bloom, pers. Comm. 2015).

The Alberta Greater Sage-grouse Recovery Plan 2005-2010 (Alberta Sage Grouse Recovery Action Group 2005) outlined strategies and actions required to facilitate sage-grouse conservation. However, despite implementation of many of the recommended actions in this plan, Alberta's sage-grouse population continued to decline, and a revised five-year recovery plan was published in 2013 with objectives focused on reversing this trend through population augmentation, predator control, and habitat restoration and protection (Alberta Environment and

Sustainable Resource Development 2013, p. vii). The Multiple Species at Risk (MULTISAR) program, established in 2002, is the province's lead non-regulatory initiative to address threats to sage-grouse through implementation of recommendations in Alberta's recovery plan for the species and especially through partnerships with grazing-lease holders to improve range management (MULTISAR 2014, pp. 1, 42–44).

Important types of non-regulatory actions undertaken by government or private organizations and cited as ongoing or completed in the national and provincial conservation plans for sage-grouse include population monitoring and modeling; research to assess sage-grouse habitat and habitat use and to examine the impacts of agriculture, grazing, energy development, and other land uses; development and distribution of recommendations for beneficial grazing practices; revision of recommended setbacks and seasonal restrictions on activity in proximity to leks and sage-grouse habitat in Alberta; numerous multilateral and cross-border agreements, collaborations, and planning initiatives intended to conserve habitat on a landscape scale for sage-grouse and other species; experimental translocation of sage-grouse from Montana to Alberta (see below); and protection and restoration of sage-grouse habitat (Alberta Fish and Wildlife Division 2011, p. 5; Alberta Environment and Sustainable Resource Development 2013, pp. 19–21; Environment Canada 2014, pp. 15–18; Weiss and Prieto 2014, pp. 5–7).

To address continued populations declines, translocations of sage-grouse from Montana were initiated in 2011 to augment the Alberta population. A total of 41 birds were translocated in 2011 and 2012. As of 2012, two nests initiated by translocated birds had hatched, and some of the translocated birds had been taken by predators (Alberta Environment and Sustainable Resource Development 2013, p. 19). Information about the effect of this pilot project on the Alberta sage-grouse population is not yet available; the intent is to continue translocations to Alberta, pending evaluation of the results of this pilot effort (Alberta Environment and Sustainable Resource Development 2013, p. 19).

Following a population and habitat viability assessment Workshop hosted by the Calgary Zoo in 2014 (Lloyd *et al.* 2014, entire), Environment Canada and Alberta Environment and Sustainable Resource Development committed a total of \$4.2 million Canadian dollars in government funds over the next 10 years for a greater sage-grouse captive breeding and rearing program at the Zoo. This is the first captive propagation program for the species. In its first year, the Calgary Zoo program successfully moved and hatched eggs collected in the wild, and has reared two birds to adulthood. Currently the Zoo is upgrading the captive facility and revising sage-grouse husbandry techniques (Calgary Zoo 2014, p. 2).