

GREATER SAGE-GROUSE RANGE-WIDE COMPENSATORY MITIGATION FRAMEWORK

[insert date], 2013

PURPOSE OF THIS DOCUMENT

In 2010 the U. S. Fish and Wildlife Service (Service) determined that the Greater Sage-Grouse (*Centrocercus urophasianus*; hereafter sage-grouse) warranted protections under the Endangered Species Act (ESA). This finding was based on two primary factors: 1) the present or threatened destruction, modification, or curtailment of habitat or range, and 2) the inadequacy of existing regulatory mechanisms.

The purpose of this document is to communicate how the Service will evaluate the efficacy of mitigation programs when assessing the status of the sage-grouse and the overall conservation value of mitigation programs. The framework is intended to assist states and other partners as they develop or refine mitigation programs to offset development impacts to sage-grouse. Our goals in providing this framework are twofold:

1. Help partners develop robust mitigation programs and processes across the range that may reduce threats and the potential need to list the species under the ESA; and
2. If the sage-grouse is eventually listed, application of these recommendations will improve streamline permitting processes and contribute to sage-grouse recovery.

The Service recognizes that state wildlife agencies have management expertise, authority, and leadership for sage-grouse conservation. Given the variability in ecological and socio-economic conditions across the range of the species, can a range-wide mitigation framework be developed that is consistent across states while also being flexible? Consistency will better enable stakeholders to implement meaningful mitigation actions that positively affect sage grouse conservation while also enabling the Service to assess the biological impacts of these mitigation efforts at the range-wide scale. However, the Service also believes it is important to maintain flexibility in this framework to accommodate the many differences in the regulatory, economic, and ecological environments between and within states and allow for and encourage local innovation as programs are developed and tested.

As we refine this framework with our partners, the challenge will be how to provide the right amount of consistency to meet the basic biological and legal requirements range-wide, while also encouraging local stakeholders to tailor this framework to their individual situations. The Service is sensitive to this challenge, and we invite feedback from our many partners on how best to strike an optimal balance.

UNDERLYING PHILOSOPHIES FOR THIS FRAMEWORK

As described above, we expect mitigation approaches across the various states to be flexible and innovative in how they offset development impacts to sage-grouse. However, we recommend that mitigation programs incorporate the following general principles. Including these principles in mitigation programs will increase likelihood of success.

1. **Strive to achieve net positive conservation.** Although not all individual mitigated actions will result in positive conservation outcomes, programs should be strategically designed to result in net overall positive outcomes at a landscape scale. This may include “*off-site*¹” and “*out of kind*” mitigation to best address population-level or landscape-level threats.
2. **Simplify and streamline project approval processes.** The program should allow for well-sited, well-designed, and mitigated actions to move forward smoothly and quickly.
3. **Don’t reinvent the wheel – use existing state or local processes.** The program should utilize existing regional, state, and local-level processes as the authorizing, implementing, and enforcement tools for a mitigation program.
4. **Make sage-grouse an asset, not a liability.** The mitigation program should provide economic incentives for private landowners to voluntarily conserve and restore sage-grouse.
5. **Use the best science.** The program should use accepted scientific principles, standards and practices for mitigation based on state-of-the-science for sage-grouse.
6. **Be consistent and fair.** The program should apply consistently to the activities that impact sage-grouse (e.g., energy, transmission, roads and transportation, agricultural conversion, commercial and residential development, mining, etc.).

The remainder of this document focuses on more specific technical recommendations for implementation of *compensatory mitigation* (aka “offsets”) that should cover the full *mitigation hierarchy* (first avoid impacts, then minimize, rectify, then offset unavoidable impacts).

PART I - provides context for the demand for compensatory mitigation within broader mitigation programs, including different development activities that may impact sage-grouse and the role of regulatory mechanisms and regulatory predictability within the context of the ESA in driving mitigation programs.

PART II - provides overarching principles and recommendations for the development of compensatory mitigation organized in seven specific elements:

1. Governance
2. Service Areas
3. Conservation Actions & Outcomes
4. Baseline & Additionality
5. Durability, Ratios & Reversals
6. Land Tenure
7. Metrics & Accounting

As you read this draft framework, keep in mind that there is no one right or correct design for a mitigation program. There is only the program that key stakeholders agree is fair, implementable, compensatory, and effective. Our hope in providing this draft framework is that it helps our many partners develop strategies that simultaneously conserve sage-grouse while maintaining or enhancing economic opportunities throughout the sage-grouse range.

¹ The first use of glossary terms (Appendix I) are italicized.

PART I

DEMAND FOR COMPENSATORY MITIGATION

Demand for a compensatory mitigation program originates from a variety of drivers: regulatory, risk management, market speculation, and philanthropic or voluntary incentives. State or local regulatory policy may require or recommend mitigation for proposed or existing disturbances. The potential constraints that future regulation might require can also be a driver. Developers, especially those in the energy industry, have expressed interest in *advance credit acquisition*. By securing credits early, future impacts for as yet to-be-determined activities may be covered by present conservation actions. The requirements for a compensatory mitigation program that would qualify for advance credit acquisition would be more prescriptive than the guidelines in this Framework. The Service is currently developing the guidelines that would allow for advance credit acquisition.

The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report², which recommends an avoidance first strategy for potential impacts to Priority Areas for Conservation (PACs) and other important sage-grouse habitat. When avoidance and minimization of impacts to sage-grouse are insufficient to prevent a net loss to the species, and these disturbances are unavoidable, project developers may offset their impact (a *debit* to be mitigated) through identified eligible conservation actions (*credits* that mitigate debits). Employing offsets, or compensatory mitigation, within an overall mitigation program requires a consistent set of guidelines to be successful.

Before developing a mitigation program, the Service recommends that one first consider the types of development activities, the regulatory mechanisms that relate to those activities, and considerations of regulatory predictability with the context of the ESA. All of these ultimately drive demand for compensatory mitigation.

DEVELOPMENT ACTIVITY IMPACTS

A robust mitigation program will clearly identify the development activities and impacts that are at issue and the avoidance, minimization, and compensatory mitigation standards for addressing them. The program should also describe the impact assessment methodology that will be used to measure a development activity's remaining direct and indirect effects to sage-grouse over the life of a development's impact, and quantify the potential direct and indirect impact "debts" that likely accrue from each of the specific development types. The COT Report describes the types of developments that cause the greatest direct and indirect impacts to sage-grouse and its habitats, and it provides initial guidance on impact avoidance, minimization, and mitigation for each of these development activities that should be applied in the mitigation program.

REGULATORY MECHANISMS

Regulatory mechanisms are the strongest and most consistent drivers of compensatory mitigation. The combination of increased development and a lack of regulatory mechanisms requiring proposed

² <http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/COT/COT-Report-with-Dear-Interested-Reader-Letter.pdf>

development to avoid or mitigate impacts is a pressing issue for sage-grouse conservation. States hold the primary responsibilities for the management of sage-grouse, while federal agencies manage almost two-thirds of the total sagebrush habitat. The Service recommends clearly identifying the federal, state, local and Tribal regulatory mechanisms for siting and permitting for each major development type that impacts sage-grouse. It is important to note if environmental review is triggered for each development type and how that review may result in avoidance, minimization, and offset recommendations. A lack of clear regulatory incentives for mitigation will increase challenges for developing a robust mitigation strategy and the Service's ability to assess the long-term likelihood of successful implementation.

REGULATORY PREDICTABILITY AND ESA

Users and suppliers of compensatory mitigation may wish to know from the Service that their actions contribute to larger efforts that could preclude the need to list sage-grouse. Suppliers of compensatory mitigation credits may also want regulatory predictability that, should the species become federally listed, the management to which they agreed would not change and incidental take coverage would be provided for these management actions. Developers may also want the ability to purchase credits well in advance of proposed developments. A program that utilizes advanced credit acquisitions could provide a major market driver for a compensatory mitigation program. In the event of a listing, coverage for incidental take under the ESA may be desired for those advanced credits. The standards required for programs to be eligible for future incidental take would be more prescriptive than those found in this framework. The Service could work closely with interested states or other stakeholders to provide greater regulatory predictability for implemented mitigation actions.

Programs with advance credit acquisition options that wish to have these credits treated as measures to minimize and mitigate the impact of the take, should sage-grouse be listed, will need to enter into an agreement with the Service. The Service is currently developing guidance for advanced credit acquisition.

If a species is listed, robust mitigation programs implemented prior to the listing decision can provide many benefits. Most importantly, programs will already be contributing to conservation and recovery. In addition, the Service may propose a special rule under section 4(d) of the ESA to allow for take incidental to activities conducted pursuant to the mitigation program if it provides a net conservation benefit. Other existing tools, such as *Candidate Conservation Agreements with Assurances* (CCAAs), *Habitat Conservation Plans* (HCPs), or *Conservation Banking Agreements* could be used to provide regulatory predictability to both the Service and the agreement holders.

PART II

COMPENSATORY MITIGATION PRINCIPLES AND PROGRAM ELEMENTS

Compensatory mitigation is to be considered after all avoidance and minimization measures have been explored. Any compensatory mitigation program is best developed with the philosophies outlined in the beginning of this document and with the following overarching principles:

- The mitigation program should be developed in conjunction with, or guided by, a landscape-level conservation plan.
- Overall outcomes should result in *no net loss* to the species at the population or landscape scale; however, achieving a *net benefit* would improve overall conservation status.

The following discussion provides specific technical elements to consider when developing a compensatory mitigation program:

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|------------------------------------|-----------------------------------|
| 1. Governance | 5. Durability, Ratios & Reversals |
| 2. Service Areas | 6. Land Tenure |
| 3. Conservation Actions & Outcomes | 7. Metrics & Accounting |
| 4. Baseline & Additionality | |

1. GOVERNANCE

A compensatory mitigation program requires a broad array of functions to operate. While many of the functions (project development, monitoring, etc.) can be carried out by third parties, the program administrator is a more critical role. The program administrator will be the entity with enforcing authority for the establishment, operation, and management of compensatory mitigation projects. The degree of authority granted to the administrator ensures that conservation benefits from compensatory mitigation will persist. The administrator(s) must have the ability to reconcile any funding (e.g. separately manage, collect and distribute funds), perform or enforce management actions, incorporate adaptive management, track credits, report results, etc.

While technically any entity with sufficient stability and capacity to perform these functions can administer a mitigation program, the Service recognizes that state agencies have a direct connection to the potential regulatory drivers that require compensatory mitigation. Because the states hold the primary responsibility for the protection and management of the sage-grouse, the program administrator should be recognized by the state through a formal agreement to facilitate enforcement of the requirements of the compensatory mitigation program. In lieu of administration of a mitigation program by a state agency or formal agreement with the state, endorsement of a program administrator by the state is recommended. Agreements should also be developed with major stakeholders, including land managers such as the Bureau of Land Management (BLM) and the U.S. Forest Service, and with the Service if regulatory predictability is sought. A legally binding credit agreement should be in place between any party generating credits and the program administrator, and credit agreements should outline and demonstrate the durability of a mitigation program (see *Durability*, below).

Conservation banking agreements with the Service have a proven track record of implementation and represent a familiar and durable type of mitigation program. Conservation banking, however, may not be a feasible option in all situations. While some deviations may be needed to develop a commercially viable and biologically relevant sage-grouse compensatory mitigation program, the closer the requirements of a compensatory mitigation program line up with those of conservation banking, the more likely the program is to provide certainty of implementation and effectiveness in improving the status of the species.

All lands being used for compensatory mitigation should comply with an active management plan that includes goals and objectives specific to maintaining habitat for the continued use of sage-grouse for the life of mitigation credits. Management plans should include a process for adaptive management and also address uncertainties. Each plan should also identify discrete *performance standards* (measurable attributes used to determine if the management plan meets the agreed upon goals and objectives), how both ecological and administrative performance standards are to be met, and possible contingencies for not meeting standards. Monitoring should be designed to contribute to knowledge gaps and improve the program. Provisions to require existing participants to adopt improved conservation strategies in the future would strengthen the program.

To demonstrate stability, the administrator of a compensatory mitigation program should identify an adequate funding source to provide for interim and long-term operation, management, monitoring, enforcement, and documentation costs. One vehicle often used for long-term funding in mitigation is a non-wasting management endowment (i.e., a fund that generates enough interest each year to cover the costs of the yearly management). For any funding vehicle proper portfolio management is critical to providing sufficient investment growth to keep pace with inflation. Overall success will be determined by establishing appropriate risk and return objectives, asset allocation guidelines and suitable investments for funding, and a framework for ongoing monitoring of investment performance.

The Service recognizes that some participants in voluntary agreements, whether directly with the Service or indirectly through a program administrator, may be concerned regarding the potential for public disclosure of their information. To properly assess the effectiveness in the program in adequately reducing threats to the species, the Service needs to be able to evaluate individual actions. The Service is sensitive to this concern and will work with stakeholders to minimize this risk. We recommend that any mitigation program provide for a transparent review process of the entire program and that individual agreement holders be made aware of the review process.

2. SERVICE AREAS

Identifying areas where offsets can be and are best focused is critical to ensuring that unavoidable impacts are adequately offset by mitigation. In traditional mitigation terms this is known as a *service area*, the geographic area within which impacts to species' habitat can be offset. In general, larger service areas provide greater flexibility to exchange credits and debits and thus are more commercially viable. Landscape, economic, and regulatory realities will inform and constrain decisions on service areas.

States have already undertaken considerable efforts to identify and map key habitats necessary for sage-grouse conservation in the development of their state management plans. These areas are also broadly identified in the COT report as PACs, defined as key areas across the landscape necessary to maintain redundant, representative, and resilient populations. Local sage-grouse population considerations should factor strongly into compensatory mitigation siting decisions. Additional finer scale planning efforts by states or federal land management agencies may be necessary to determine if other essential habitats exist, particularly for connectivity, population expansion opportunities, and flexibility in managing habitat changes that may result from climate change. Generally, compensatory mitigation should target providing the greatest benefit to sage-grouse that is allowable given jurisdictional and other constraints.

Jurisdictional issues may play a significant role in siting of compensatory mitigation. Many large-scale development projects cross state and county boundaries. Where compensatory mitigation programs line up across jurisdictions, efficiencies and greater conservation benefits for sage-grouse could be realized. The BLM, for example, is taking a regional approach to mitigation with its 2013 draft MS-1794 policy³ which focuses on attaining the highest compensatory mitigation benefit, regardless of land ownership. Bundling of credits from multiple debit sources may provide more concentrated landscape level conservation benefits. If policy requires that compensatory mitigation occur locally, and local opportunities are limited or do not fit well into a given sage-grouse conservation strategy, higher mitigation ratios may be used to compensate for spatial deficiencies.

The Service recommends working with stakeholders such as the BLM to clearly define service areas early in the compensatory mitigation program development process. The geographic extent of a service area should be guided by the COT report and current state sage-grouse conservation plans. PACs represent an ideal starting point. For service areas that are shaped based on jurisdictional or policy considerations, provide justification.

3. CONSERVATION ACTIONS & OUTCOMES

As a guide that will improve conservation benefits to the sage-grouse, the Service recommends following the broadly identified project types and conservation measures that address threats identified in the COT Report at the range wide scale. Compensatory mitigation programs are encouraged to adapt the list to address local conditions and threats. If the conservation actions of compensatory mitigation programs are consistent across the range and address the greatest threats in a PAC or defined service area, that should help maximize the value of programs for status assessment. It is equally important to demonstrate that the conservation actions used are providing the intended conservation outcomes. Measurement of outcomes could be achieved using a stratified sample approach to improve efficiencies.

In addition to targeting recommended conservation actions, offset projects should also meet the test for *additionality* (i.e. actions proposed as mitigation must provide benefits beyond those that would be achieved anyway under applicable regulations and/or land-use management plans; see *Baseline & Additionality*, below). In general, actions that are unproven or have significant lag time before providing conservation benefits shouldn't be prioritized for compensatory mitigation. *Out of kind* compensatory mitigation may be appropriate where high priority recovery needs can be addressed.

4. BASELINE & ADDITIONALITY

Baseline refers to the habitat and/or species population conditions at any given point in time against which conservation actions are measured to determine uplift, or additionality. Baseline conditions should be assessed and measured using the same methodology employed to predict future conditions during project planning stages and ultimately to verify project conditions and associated credits during

³ http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2013/IM_2013-142.html

periodic and final monitoring. The Service strongly recommends that a consistent methodology also be applied to predict impacts to sage-grouse and sage-grouse habitat (see *Metrics*, below).

The Service has not developed nor endorsed any one specific methodology for determining baseline conditions at a given site. States and other management entities may find it useful to cooperatively develop, adapt, adopt, or align methods that can be consistently applied across larger landscapes. Conservation banking agreements and similar documents provide informative examples to facilitate such efforts.

Actions proposed as compensatory mitigation must provide a level of conservation benefit beyond what would have been achieved anyway under applicable (non-mitigation related) regulations and/or land-use management plans. Corrective actions applied to existing sage-grouse management requirements that are not being met (on public lands, for example), would not be considered additional to normal requirements or management. Some temporal credit consideration may be appropriate for contributions to substantively accelerated management actions on a case-by-case basis where benefits can be quantified.

Additionality and potential credit associated with proposed restoration and enhancement activities should be evaluated on a given site in comparison with both baseline and projected future condition that would be expected in the absence of the proposed mitigation activity. Additionality of preservation projects should be evaluated, and credits proportionately assigned, according to the magnitude and likelihood of existing and future threats to the habitat at hand and/or the value of that site to conservation of the species. *Restoration*, *enhancement*, and *preservation* projects should also consider the potential for future development and disturbance at these sites if they were managed as mitigation sites.

5. DURABILITY, RATIOS & REVERSALS

Actions or plans proposed as compensatory mitigation should demonstrate timeliness (i.e. achieve targeted biological conditions in a timeframe that benefits sage-grouse), biological effectiveness (i.e. ecological *durability*) and be accompanied by legal and financial assurances that secure and protect the conservation status of the mitigation site and credits for at least as long as associated impacts persist (protective durability). Durability may be compromised when the benefits of compensatory mitigation do not persist for the full duration that is required based on the impact that is intended to be offset. These types of *reversals* must be addressed in any compensatory mitigation program. Uncertainty in temporal, ecological, and legal considerations should be ameliorated by *mitigation ratios* or other means. Each of these concepts is explained further below.

Timeliness: Because most impacts typically begin to occur in the early stages of projects (i.e., construction and initial operations) benefits of proposed mitigation actions should also begin to accrue as early in the life of the project as possible. These benefits should be verified via standardized monitoring. When the success of compensatory mitigation is demonstrated prior to impacts occurring, ecological risk is reduced. Compensatory mitigation projects that are proposed after projects with impacts should not be allowed, due to uncertainty of implementation and time lag effects. One benefit of allowing for advanced credit acquisition in a compensatory mitigation program is that credits demonstrate benefits in advance of any impacts.

Ecological Durability: The length of time the intended improvements persist on and influence the landscape should meet or exceed the length of time that projected impacts to be offset negatively affect sage-grouse. Consistently striving to maximize biological durability of such projects can facilitate the “no net loss” and “net benefit” principles. Conservation actions are more likely to be meaningful if they are aggregated. Compensatory mitigation areas are most effective if they are large enough so that they will, either in themselves or in conjunction with adjacent landscape conditions, provide the targeted biological benefits. Compensatory mitigation is not effective if it occurs in areas impacted by a development project (“on site” mitigation), nor in areas where benefits are likely to be obviated over time by incompatible land-uses and surrounding landscape.

Protective Durability: An ecologically sound plan offers limited ecological value if affected by future development or disturbance. Durability is best achieved with real estate protections and plans (e.g., conservation easements, fee title transfers, habitat management agreements) and financial protections (e.g., bonding for construction, endowment for management). The amount of financing to deliver the mitigation is best determined by an appropriate cost-analysis for all elements of the mitigation, including acquisition or easement, restoration or enhancement, and long-term maintenance. Funds held in dedicated accounts and managed based on agreed-upon terms will ensure transparency in the system and that target biological conditions will be attained and maintained.

Ratios: Risk and uncertainty associated with durability can be addressed to a degree with higher credit to debit mitigation ratios; however, the point at which risk and uncertainty render an offset project as unsuitable is determined at the project level. Strong projected ecological durability should therefore favorably influence mitigation ratios. Lower levels of protective durability would result in higher mitigation ratios or other means to address uncertainty. For example, higher mitigation ratios may be warranted if the success of compensatory mitigation has not been verified prior to impacts occurring or if a time lag will exist from when impacts are incurred and offset benefits are realized.

Reversals may be caused by natural disturbances (unintentional reversal, such as wildfire) or anthropogenic disturbances (intentional reversal, such as development) which shorten the intended duration of compensatory mitigation. Requiring the credit provider to be responsible for unintentional reversals would likely make administration of a program more complex and decrease interest in providing credits. One recommended approach to address unintentional reversals is to establish insurance or *reserve pool*. For intentional reversals, the Service recommends compensation by the party responsible for the reversal. To address this issue up front, the Service recommends establishing policies such that intentional reversals are prohibited to the extent possible, and the conservation benefits from a compensatory mitigation project are not diminished due to replacements made necessary by unforeseen intentional reversals.

6. LAND OWNERSHIP/MANAGEMENT

Compensatory mitigation for the sage-grouse can occur on either private or publicly managed land. Generally, conservation actions used as compensatory mitigation should be limited to those identified as the most critical for sage-grouse conservation in the applicable geographic setting and that will yield the most substantial benefit, regardless of ownership. BLM’s 2013 draft MS-1794 policy echoes this consideration:

“Mitigation site, projects, and measures should be focused where the impacts of the use authorization can be best mitigated and BLM can achieve the most benefit to its resource and value objectives, regardless of land ownership. The most appropriate area for mitigation projects may be on Federal lands (the BLM or another agency) or on non-Federal lands.”

However, criteria related to additionality and durability present challenges with use of public lands and lands with *split estate* ownership, which often involve public lands. Land exchanges and consolidation of ownership or management of land may overcome some of these challenges.

For public lands, if the biological values expected to result from public programs are the same as those required for compensatory mitigation, those lands may not meet the additionality test. Durability on public lands may be difficult to guarantee because of rules and policies (e.g. FLPMA) that preclude many legal land protection mechanisms that can assure protection and management commensurate with the life of project impacts. For lands with split estate ownerships, laws and policies (e.g. mining laws) may also prevent a particular site from meeting the durability test if land-use management instruments (e.g. conservation easements) cannot be applied. Use of public lands for compensatory mitigation purposes could also limit attainment of broader goals for sage-grouse conservation, specifically those related to providing economic benefits to landowners and increasing incentives for private landowners to engage in conservation actions.

To show that compensatory mitigation projects will persist, the agency responsible for oversight of public lands on which the mitigation occurs should be responsible for providing alternative adequate mitigation if subsequent changes in management direction result in incompatible uses on those lands. Similarly, if subsurface development occurs on split estate lands, alternative mitigation at a higher ratio or using other means is recommended so as not to result in any net loss of conservation benefit. This contingency responsibility should be identified in the administrative and regulatory documents (e.g. Records of Decision) that enable the original mitigation.

The Service recommends that compensatory mitigation programs clearly define how additionality and durability will be addressed on various land ownership types. Close coordination with large public land managers such as the BLM will be necessary in most states so that BLM regional mitigation strategies and state, local, and Tribal mitigation plans align. A Step Down Key (Appendix 2 – Table 1) provides general guidance for evaluating additionality as it pertains to proposed offset projects.

7. METRICS, EQUIVALENCE AND ACCOUNTING SYSTEMS

The methodologies, or metrics, used to determine the expected impacts of actions (debits) and the measures necessary to avoid, minimize, restore and/or offset those impacts (credits) must be based solely on biological conditions and upon reliable and repeatable methods and result in a common “currency” between credits and debits.

A formal, consistent, rigorous but relatively simple methodology⁴ to assess impacts should be used and applied to all land development activities that impact sage-grouse. The methodology should address

⁴ Refer to *Measuring Up* document submitted to USDA for examples of developing robust metrics:
<http://willamettepartnership.org/measuring-up/Measuring%20Up%20w%20appendices%20final.pdf>

direct impacts (habitat removal), indirect impacts and disturbance, and ecological site conditions. Metrics that are comparable or the same across jurisdictional boundaries will allow for more biologically meaningful exchanges in a landscape context. Approaches such as sound propagation, distance-based disturbance bands, habitat weighting, and ratios are acceptable, especially in conjunction with defined thresholds of allowable impact in defined geographies.

Credits must be reasonably likely to deliver expected conservation benefits (see *Durability*, above). The Service recommends providing phased credit releases based on both ecological and administrative performance. Monitoring and adaptive management are important components of mitigation programs to ensure success. Ultimately, the metrics used must tie back to populations and clearly show the conservation benefit to the species. Programs that provide only no net loss will be evaluated more conservatively by the Service.

Mitigation ratios may be used to address uncertainty in the program and ensure durability. Ratios may be determined based on several factors including temporal considerations (impact versus mitigation timing), functional quality and importance of proposed impacted areas, projected functional quality of proposed mitigation areas, likelihood of restoration success, degree of threat to proposed preservation areas, durability, etc.

A robust compensatory mitigation program will provide an accounting system⁵ whereby credits and debits can be tracked. The accounting system should foster transparency, accountability, and credibility and facilitate the connections between compensatory mitigation providers at the lowest transaction costs.

CONCLUSION

The Service's primary goal for any sage-grouse compensatory mitigation program is to support conservation of the species by working with others in managing threats, protecting populations, and reversing declines. Implementation of a robust and transparent compensatory mitigation program would contribute to reducing the need to list the species or reduce adverse regulatory implications of a listing while allowing for well-sited actions to move forward smoothly. This will take a collaborative, unified approach between the Service, state(s), federal land managers and other stakeholders. We encourage managers to utilize existing regional, state, and local-level processes as the primary mechanisms to implement mitigation strategies if these mechanisms are in place.

If we are able to work together on landscape scale mitigation strategies for the sage-grouse, we anticipate many benefits to accrue, including a streamlined permit process, increased public transparency and confidence, increased economic incentives and opportunities for landowners, and legal and scientific defensibility for actions taken under such a program. Most importantly, we will have reduced the threats to the species in a manner consistent with the socio-economic needs of the local communities and states where the sage grouse occurs.

⁵ See Willamette Partnership's *General Crediting Protocol* for an example of an ecosystem credit accounting system.

APPENDIX 1 -GLOSSARY

Additionality - A property of a biodiversity offset, where the conservation outcomes it delivers are demonstrably new and additional and would not have resulted without the offset.

Advance Credit Acquisition - securing credits early for future impacts for as yet to-be-determined activities, including those that may occur in a post-listing scenario and may be used as measures to minimize and mitigate the impact of incidental take.

Baseline - the pre-existing condition of a defined area of habitat that can be quantified by an appropriate metric to determine level of function or value and re-measured at a later time to determine if the same area of habitat has increased, decreased, or maintained the same level of function or value.

Candidate Conservation Agreement (CCA) – a formal agreement between the USFWS and one or more Federal or non-Federal parties to address the conservation needs of proposed or candidate species, or species likely to become candidates for listing under the Endangered Species Act, in which participants voluntarily commit to implementing specific actions that will remove or reduce the threats to these species, so that listing is no longer necessary.

Candidate Conservation Agreement with Assurances (CCAA) – a formal agreement between the USFWS or NMFS and one or more non-Federal parties who voluntarily agree to manage their lands or waters to remove threats to candidate or proposed species and in exchange receive assurances that their conservation efforts will not result in future regulatory obligations in excess of those they agreed to at the time they entered into the Agreement.

Conservation Bank - a site, or suite of sites, that contain natural resource values that are conserved and managed in perpetuity for specified at-risk species expressly for the purpose of offsetting impacts occurring elsewhere to the same resource values. The establishment, operation and use of a conservation bank are governed by a conservation bank agreement.

Conservation Bank Agreement (CBA) - the legal document for the establishment, operation and use of a conservation bank. This contract may also be referred to as a Mitigation Bank Instrument (MBI), Conservation Bank Instrument (CBI), Conservation Bank Enabling Instrument (CBEI), or Bank Enabling Instrument (BEI).

Compensatory Mitigation (Offset) - the preservation, enhancement, restoration and/or establishment of habitat for at-risk species to compensate for unavoidable adverse impacts to the species or habitat elsewhere.

Credit - a defined unit of trade related to habitat representing the accrual or attainment of habitat functions or value at a habitat offset site. A credit may be expressed as a measure of surface area (e.g., an acre or hectare), linear distance, number of individuals, stage of maturity of a particular habitat type, or other appropriate metric that can be consistently quantified and traded.

Debit - a defined unit of trade related to habitat representing the loss of habitat functions or value at an impact or project site. The unit of measure should be the same as that for a credit within a specific mitigation system.

Durability - Actions or plans proposed as compensatory mitigation should demonstrate timeliness (i.e. achieve targeted biological conditions in a timeframe that benefits sage-grouse), biological effectiveness (i.e. ecological *durability*) and be accompanied by legal and financial assurances that secure and protect

the conservation status of the mitigation site and credits for at least as long as associated impacts persist (protective durability).

Enhancement – manipulation of existing habitat to heighten, intensity, or improve a specific resource function(s). Enhancement results in a gain of selected resource function(s), but may also lead to a decline in other resource function(s).

Establishment (creation) – construction of habitat of a type that did not previously exist on a site. Compare with “*Restoration*”.

Habitat Conservation Plan (HCP) – a conservation plan that specifies the anticipated effects of a proposed activity on the taking (see “*Incidental take*”) of federally-listed species and how those impacts will be minimized and mitigated. The HCP is submitted with an incidental take permit application to the USFWS or NMFS. Incidental take permits are available to private landowners, State and local governments, Tribal governments and other non-Federal landowners through section 10 of the Endangered Species Act.

Incidental take – take of listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity (see “*Take*”). Incidental take may be authorized through section 7 or 10 of the Endangered Species Act.

In Kind - habitat of a similar structural and functional type to the habitat impacted or individuals of the same species as those impacted

Mitigation - Measures which aim to reduce impacts to the point where they have no adverse effects ; the offset of an environmental impact with a compensatory environmental benefit, typically generated through ecological protection, restoration, or enhancement and verified through a crediting program.

Mitigation Hierarchy - The mitigation hierarchy is defined as:

- i. Avoidance: measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity.
- ii. Minimization: measures taken to reduce the duration, intensity and / or extent of impacts (including direct, indirect and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible.
- iii. Rehabilitation / restoration/ rectification: measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and / or minimized.
- iv. Offset: measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimized and / or rehabilitated or restored, in order to achieve no net loss or a net gain of biodiversity.

Net Conservation Benefit - the actual gain above baseline conditions, after deductions for impacts, in habitat function or value to at-risk species covered by a habitat credit trading system.

No Net Loss - impacts on biodiversity caused by the project are balanced or outweighed by measures taken to avoid and minimize the project’s impacts and offset any residual impacts so that no loss remains.

Off Site - an area that is neither located on the same parcel of land as the impact site, nor on a parcel of land contiguous to the parcel containing the impact site.

Out-of-kind – habitat of a different structural and functional type from the impacted habitat or individuals of a different species than those of the species impacted.

Priority Areas for Conservation (PAC) - key areas that states have identified as crucial to ensure adequate representation, redundancy, and resilience for conservation of its associated population or populations of Greater sage-grouse.

Performance Standards - observable or measurable physical, chemical, or biological attributes that are used to determine if a compensatory mitigation project meets the agreed upon objectives.

Preservation – maintenance or retention of existing habitat with specific resource function(s) for covered species. This term usually implies legal protection of the habitat, for example a parcel of land protected under a conservation easement.

Ratio - the relationship between compensatory offset for, and impacts to, individuals of species or habitat for species.

Reserve (Insurance) Pool - a pool of issued credits, managed by the Program Administrator, intended to cover risks in the market from intentional or unintentional reversals. Reserve pools can be established several ways, including:

- i. The compensatory mitigation program administrator requires that each individual mitigation provider sets aside a small portion of credits in reserve, never to be sold. In the event of an unintentional reversal, the administrator could draw from the pool of credits to make up for the lost conservation.
- ii. An insurance premium, based on the likelihood of unintentional reversal (i.e. a natural disturbance that may lead to loss of habitat function), is added to the cost of compensatory mitigation for the debits requested. The insurance premium would then be used to generate additional compensatory mitigation projects that generate credits for the insurance pool. In the event of an unintentional reversal that generates unintentional debits, the compensatory mitigation program administrator would draw down credits from the pool to offset the debits.

Restoration – returning a site to its natural/historic habitat type with the same or similar functions.

Reversal – compensatory mitigation that does not persist for the full duration that is required based on the impact that is intended to be offset, whether through natural or man-made causes.

Safe Harbor Agreement (SHA) – formal agreement between the USFWS or NMFS and one or more non-Federal landowners in which landowners voluntarily manage land for listed species for an agreed amount of time providing a net conservation benefit to the species at the end of the time period and, in return, receive assurances from the Federal agency that no additional future regulatory restrictions will be imposed.

Service Area - the geographic area within which habitat credit trading occurs; the geographic area within which impacts to covered species' habitat can be offset at a particular habitat offset site as designated in an agreement or program.

Split Estate - surface rights and subsurface rights (such as the rights to develop minerals) for a piece of land are owned by different parties.

APPENDIX 2

TABLE 1. *Element 4 – Baseline & Additionality. Step Down Key*

Note: This key is only intended to assist with communicating the concept of additionality in regards to land ownership. It does not address every potential situation and is not inclusive of all parameters discussed in this document that are necessary to evaluate the viability, appropriateness, or credits that may be associated with a given proposed mitigation project.

1. Is the offset project site proposed on private (go to 2) or public (go to 4) land?
2. Does the proposed project site on private land contain a conservation easement purchased with public funds, or have lands that are restored, enhanced, or managed with public funds?
 - a. Yes: go to 3.
 - b. No: proposed offset project could be considered additional and resultant credits may be available for private landowner or third party use.
3. Does the proposed site on private land contain potential for additional easements, restoration and/or enhancement beyond that achieved with public funds that could measurably benefit sage-grouse?
 - a. Yes: new proposed offset project could be considered additional and resultant credits may be available for private landowner (original measures plus new offset project) or third party use (new offset project only).
 - b. No: proposed offset project would likely not be considered additional; credits from original measures could be considered for private landowner use only.
4. Is the public offset project site currently managed for sage-grouse, with development or disturbance excluded?
 - a. Yes: proposed offset project might not be considered additional. However, if restoration or enhancement is proposed, go to 5.
 - b. No: go to 5.
5. Is restoration and/or enhancement of the public offset project site (whether accomplished or not) required under existing mandate (statute, management or restoration plan, etc.)?
 - a. Yes: go to 6.
 - b. No: proposed offset project could be considered additional and resultant credits may be available for agency or third party use.
6. Is there opportunity to substantively accelerate implementation to measurably benefit sage-grouse?
 - a. Yes: proposed offset project could, on a case-by-case basis, be considered additional.
 - b. No: (or already implemented); proposed offset project would not be considered additional.