2016

Greater Sage-grouse Habitat Implementation Guide

VERSION 1.0

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Greater Sage-grouse Habitat Implementation Guide

Introduction

This Habitat Implementation Guide provides guidance for the implementation of portions of the *Greater Sage-grouse (GRSG) Records of Decision (RODs) and Land Management Plan (LMP) Amendments*. Specifically this guide provides information for the management and monitoring of GRSG habitats on National Forest System (NFS) lands covered by these decisions.

Two RODs were completed; 1) Record of Decision for Idaho and Southwest Montana, Nevada and Utah (Great Basin ROD) (USDA 2015a), which produced four separate LMP Amendments (Idaho and Southwest Montana, Nevada, Utah, and Wyoming (Ashley and Uinta-Wasatch-Cache National Forests)); and 2) Record of Decision for Northwest Colorado and Wyoming (Rocky Mountain ROD) (USDA 2015b) which resulted in two LMP Amendments (Northwest Colorado and Wyoming (Bridger-Teton and Medicine Bow National Forests and Thunder Basin National Grassland)).

This guide is a companion to other implementation guides comprising the Forest Service Sage-Grouse Implementation Strategy (e.g. range, vegetation, fire, minerals) that also provide guidance for the implementing portions of the LMP Amendments. The combination of implementation guides, web-based frequently asked questions, fact sheets, and information sheets provide guidance and direction on the full implementation of the RODs and associated LMP Amendments. This guide is not designed to be a step-by-step instruction manual to implement projects. Nor is it designed to be inclusive of all implementation issues or questions. It is focused on three main topics: 1) Summarizing habitat mapping by state and how habitat management areas were designated, 2) Providing guidance on how and under what circumstances changes can be made to the LMP amendments and habitat management areas, and 3) introducing the process used for broad, mid, and fine scale monitoring associated with GRSG habitat.

Habitat Mapping Overview

In collaboration with state fish and wildlife agencies, the Bureau of Land Management (BLM) and the US Forest Service (USFS) identified important habitat across the current range of the GRSG as preliminary priority habitat (PPH) and preliminary general habitat (PGH). Maps were revised and refined as further mapping was conducted and state fish and wildlife agencies,

often in collaboration with GRSG experts and researchers, provided more detailed analysis of habitat characteristics and populations. LMP Amendments reflect this input to designate two main categories of GRSG habitat management areas. Priority Habitat Management Areas (PHMAs) largely coincide with areas identified as Priority Areas for Conservation (PACs) in the Conservation Objectives Team (COT) Report (USFWS 2013) (http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf). Remaining suitable habitat is designated as General Habitat Management Areas (GHMAs). Note that LMP Amendments in Idaho, Nevada, and Wyoming include additional habitat management area categories.

Preliminary seasonal habitat mapping was identified during the Final Environmental Impact Statements (FEISs) analyses. Seasonal habitats are defined as breeding/nesting, brood-rearing (summer) and winter (fall/winter) habitats. It is anticipated that seasonal habitat maps will be refined as new information becomes available such as; research, state-specific information, and monitoring. Forests will be responsible for these refinements in cooperation with agencies, local working groups, and states. These updates to the preliminary seasonal habitat maps can be completed using the Third Order habitat mapping and assessment process in the Habitat Assessment Framework (HAF) (Stiver et al. 2015).

Habitat management areas (e.g. PHMA, GHMA) can overlay multiple seasonal habitats and seasonal habitats can overlap one-another. Most of the LMP Amendment components are related to the habitat management areas and for each LMP Amendment, the maps of the habitat management areas are a component of the RODs. The decision area for GRSG management is defined as NFS lands within GRSG habitat management areas and lek buffers outside habitat management areas.

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*The Land Management Plan (LMP) Amendments also identify **sagebrush focal areas (SFAs) as a subset of PHMAs.** SFAs correspond to the areas identified by the US Fish and Wildlife (USFWS) as important greater sage-grouse "strongholds," as detailed in an October 27, 2014, memo from USFWS Director Ashe to BLM Director Kornze and USFS Chief Tidwell that identified "a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection" (USFWS 2014). The SFAs identified in the LMP Amendments reflect the areas identified by the USFWS as strongholds which are administered by the USFS and are that are inside the planning area boundaries.*

Habitat management area maps and the GIS data to support those maps can currently be found on the Intermountain Region Intranet website (http://fsweb.r4.fs.fed.us/unit/nr/sagegrouse/index.shtml) and at the following locations:

T:\FS\Reference\GIS\wo_nfs_gstc\Data\GSRG

O:\NFS\Collaboration\SageGrouseConservation\08 Maps\Plan_Maps\District_Maps

A new website is in development that, when complete, will house all relevant GRSG information, including information found at the sites above.

Each state completed habitat mapping in cooperation with federal and state agencies. This lead to some variations in mapping depending on the distribution of GRSG populations, and movement patterns of these populations. A brief synopsis of each state's process is follows.

Habitat Mapping in Idaho

The process used for initial habitat delineation is found in Appendix V of the Idaho-Southwest Montana Final Environmental Impact Statement (FEIS) for Greater Sage-grouse Land Use Plan Amendments. This appendix details the process used for development of preliminary priority habitat and preliminary general habitat. Appendix N of the FEIS describes the mapping adjustments that were made between the DEIS and the FEIS. Prior to the map becoming final, each of the southern Idaho national forests had two opportunities for review and editing to reflect local conditions. The final map includes:

- **Priority Habitat Management Areas (PHMA):** – NFS lands identified as having the highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the Preliminary Priority Habitat boundaries. Areas of PHMAs largely coincide with areas identified as Priority Areas for Conservation (PACs) in the COT report (USFWS 2013).
- **Important Habitat Management Areas (IHMA**): This designation is unique to Idaho. High value habitat and populations that provide a management buffer for the priority habitat management and sagebrush focal areas and connect patches of priority habitat management and sagebrush focal areas. The areas encompass areas of generally moderate to high conservation value habitat and/or populations and, in some conservation areas, include areas beyond those identified by USFWS as necessary to maintain redundant, representative, and resilient populations. The areas are typically adjacent to priority habitat management and sagebrush focal areas but generally reflect somewhat lower GRSG population status and/or reduced habitat value due to disturbance, habitat fragmentation, or other factors. No important habitat management areas are designated within the southwestern Montana conservation area.

- **General Habitat Management Areas (GHMA):** NFS lands that are occupied seasonally or year-round habitat outside of PHMA where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the Preliminary General Habitat boundaries.

Habitat Mapping in Utah

Throughout preparation of the LMP Amendment, the Forest Service in Utah coordinated closely with the Utah Division of Wildlife Resources personnel in developing maps depicting Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA). Both the Forest Service and the state prioritized occupied greater sage-grouse habitat into two categories, though there were variations between the agencies and each labeled and mapped them differently. The state's highest priority areas are referred to as Sage-grouse Management Areas (SGMAs) and the Forest Service highest priority areas are referred to as PHMA. As reflected in July 2012 SGMA draft maps, the state elected to not map low density GRSG habitats that included occupied habitat outside the SGMAs. The Forest Service mapped areas of occupied seasonal or year-round habitat outside of these priority habitats and designated these lower priority areas as GHMA in the LMP Amendment.

Habitat Mapping in Nevada

GRSG habitat mapping in Nevada occurred through a number of stages. BLM in coordination with Nevada Department of Wildlife (NDOW) initially mapped habitat identified as:

- **Preliminary Priority Habitat (PPH):** Areas that have been identified as having the highest conservation value to maintaining sustainable GRSG populations. These areas would include breeding, late brood-rearing, and winter concentration areas.
- **Preliminary General Habitat (PGH**): Areas of occupied seasonal or year-round habitat outside of priority habitat.

The Draft Land Use Plan Amendment and Environmental Impact Statement (Draft LUPA/EIS) identified "unmapped habitat" which was defined as GRSG habitat within the planning area not considered to be Priority or General habitat, but where GRSG use has been observed or suspected.

In October 2014, BLM received a final map from the State of Nevada. This map was based on the GRSG habitat suitability modeling by the USGS (Coates et. al 2014). For this map, a Space Use Index (SUI) was developed coupled with the probability of GRSG occurrence relative to distance to the nearest lek. The SUI was then intersected with the habitat suitably index to identify management categories. These management categories are defined as follows:

- **Core Areas**: Defined as the intersection between all suitable habitats (high, moderate, and low categories) and the high use category. This habitat management class is intended to incorporate all suitable habitats that have relatively high certainty of current GRSG occupancy.
- **Priority Areas**: Defined as both high suitability habitat that is present within the low-to-no use category and non-suitable habitat occurring within the high use category. This habitat management class encompasses: (1) high-quality habitats based on environmental covariates with a lower potential for occupancy given the current distribution of GRSG; and (2) GRSG incursion into areas of low quality habitat that is potentially important for local populations (for example, corridors of non-habitat connecting higher quality habitat).
- **General Areas**: Defined as moderate and low habitat suitability that is present within the low-to-no use SUI category. This habitat management class represents areas with appropriate environmental conditions, but is less frequently used by GRSG.
- **Non-habitat Areas**: Defined as non-suitable habitat that is present within the low-to-no use SUI. This scenario represents habitat of marginal value to GRSG populations.

Core and priority habitat areas correlate to priority and general habitat management areas, respectively. General habitat area is consistent with "unmapped" areas and in the Final LUPA/EIS was designated as Other Habitat Management Areas (OHMA). Finally, Sagebrush Focal Areas (SFA), which are a subset of priority habitat management areas (PHMA), were identified by the USFWS and represent recognized strongholds for GRSG that have the highest densities of GRSG and other criteria important for the persistence of the species. In the final habitat mapping for the Great Basin ROD (USDA 2015a), habitat classifications are defined as:

- **Priority Habitat Management Area (PHMA) (Including Sagebrush Focal Areas (SFAs))** - lands identified as having the highest value to maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA are derived from and generally follow the Preliminary Priority Habitat boundaries and the core areas as modeled by Coates et al. (2014). Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report (USFWS 2013). (**Note: Sagebrush Focal Areas (SFAs) are a subset of this management area designation**).
- **General Habitat Management Area (GHMA**) - lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMA are derived from and generally follow the Preliminary General Habitat boundaries and the priority areas as modeled by Coates et al (2014).
- **Other Habitat Management Area (OHMA)** - lands previously identified as unmapped habitat that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data the areas containing

characteristics of unmapped habitat were identified as general areas (Coates et al. 2014) and are now referred to as OHMAs.

It is worth noting that because the PHMA, GHMA, and OHMAs were identified in part by modeling, that these management areas contain areas of non-habitat, and management direction specific to PHMAs and GHMAs would not apply to those areas of non-habitat. However, management direction would apply to all areas within sagebrush focal areas (SFAs) including non-habitat (Nevada Plan Amendment – USDA 2015a).

Habitat Mapping in Wyoming

The Wyoming LMP Amendment is complementary to the updated *Governor's Executive Order 2011-05, Greater Sage Grouse Core Area Protection* (Core Area Strategy) (Wyoming Office of the Governor 2011) and updated Executive Order (Mead 2011), by establishing conservation measures and focusing restoration efforts for key areas considered most valuable to GRSG. To protect the most important GRSG habitat areas, the planning effort began with mapping areas of important habitat across the range of the GRSG in Wyoming. In collaboration with Wyoming Game and Fish Department, the BLM and the USFS identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH).

PPH and PGH correlate with Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA), respectively, in the LMP Amendments for Wyoming to identify management decisions applying to those areas. The following definitions apply to GRSG habitat management areas on National Forests and Grasslands in Wyoming.

- **PHMA—** NFS lands identified as having the highest habitat value for maintaining sustainable GRSG populations. In Wyoming, priority habitat management areas are sub-identified as either core or connectivity habitat.
    - **Priority-Core Habitat Management Areas** – In Wyoming, areas of priority habitat management areas that are the most important breeding and nesting habitat.
    - **Priority-Connectivity Habitat Management Areas** – In Wyoming, areas of priority habitat management areas that are known migration corridors that connect populations or population segments.
    - A small area on the Bridger-Teton National Forest (3,300 acres) also includes a **Sagebrush Focal Area (SFA)** that is a sub-set of PHMA. SFAs are defined as "Areas identified by the USFWS that represent recognized "strongholds" for greater sage-grouse that have been noted and referenced as having the highest densities of greater sage-grouse and other criteria important for the persistence of the species" (USFWS 2014).

- **GHMA**— NFS lands that are occupied seasonally or year-round habitat outside of PHMA where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the Preliminary General Habitat boundaries.

The combination of PHMA and Priority-Core/Connectivity Habitat Management Areas on NFS lands largely reflect Wyoming's Core Area Strategy direction for NFS lands."

Habitat Mapping in Colorado

The Routt National Forest is the only USFS unit in Colorado amended under the LMP Amendment. Hence, the Record of Decision (ROD) for Wyoming and Northwest Colorado includes only the Routt National Forest for Colorado. Attachment A in the Rocky Mountain ROD (USDA 2015b) identifies LMP Amendment direction for GRSG on this National Forest.

To protect the most important GRSG habitat areas, the planning effort began with mapping areas of important habitat across the range of the GRSG, including those lands in northwest Colorado. In collaboration with Colorado Parks and Wildlife, the BLM and the USFS identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). PPH and PGH areas were further used as a basis for identifying Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) in the LMP Amendment to reflect the management decisions that apply to those areas. PPH and PGH areas largely correlate with Priority Areas for Conservation (PACs) in the Conservation Objectives Team Report (USFWS 2013).

The following definitions apply to GRSG habitat management areas on the Routt National Forest.

- **PHMA**— NFS lands identified as having the highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA areas are derived from, and generally follow, PGH and PAC boundaries.
- **GHMA**— NFS lands that are occupied seasonal or year-round habitat outside of PHMA where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the PGH and PAC boundaries.

Designated habitats on the Routt National Forest are largely peripheral to occupied habitats adjacent to the Forest. GRSG habitats on the Forest are at high elevation, and thought to function primarily as late summer brood-rearing habitats. On-going assessments will further clarify sagebrush habitat conditions and their relevance to GRSG populations using the Routt National Forest.

Habitat Mapping in Montana

The process for habitat mapping in Montana is included in Appendix V of the Idaho-Southwest Montana Final Environmental Impact Statement (FEIS). Montana Fish Wildlife and Parks (FWP) staff used a 10 km (6.2 mile) buffer around leks when designating Core Areas to capture the majority of seasonal habitat use. FWP and BLM biologists refined the Core Areas based on available habitat so the boundaries are not exactly 6.2 miles from leks, i.e., Core Area boundary could be closer or farther than 6.2 miles from a lek depending on available habitat. Some of Montana's GRSG populations are considered non-migratory, some are considered migratory. The non-migratory populations probably stay within 6.2 miles of a lek across seasons, while the migratory ones may not. Winter habitat has not been mapped due to variability in snow conditions among year.

Core areas are generally equivalent to PHMA and the remaining areas of habitat are equivalent to GHMA.

- **Priority Habitat Management Areas (PHMA):** – NFS lands identified as having the highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the Preliminary Priority Habitat boundaries. Areas of PHMAs largely coincide with areas identified as Priority Areas for Conservation (PACs) in the COT report (USFWS 2013).

- **General Habitat Management Areas (GHMA):** NFS lands that are occupied seasonally or year-round habitat outside of PHMA where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the Preliminary General Habitat boundaries.

Relationship to Existing Plans and Mapping Corrections/Changes

Existing Plans

In the joint BLM and Forest Service Final Environmental Impact Statements (FEISs) and subsequent Records of Decision (RODs), GRSG priority, important, other, and general habitat areas, were called "management areas," which is a term already used in existing Land Management Plans (LMPs). To avoid confusion, the mapped areas of these decisions with area-specific direction (priority, important, other, and general habitat management areas, Anthro Mountain, and sagebrush focal areas), are to be treated as "overlays" to existing management areas in existing LMPs, rather than replacing those existing management areas (USDA 2015a, USDA 2015b, pg. 17). As overlays, the habitat management areas provide areas where plan components (e.g. standards, guidelines) apply. Therefore, existing land allocations and management area (MA) boundaries as defined in the existing national forest/national grassland

LMPs are not spatially replaced by the habitat management areas (PHMA, IHMA, GHMA, OHMA, SFA, etc.). Direction in the RODs supersedes direction in existing LMPs related to GRSG or its habitat, unless existing direction provides equal or greater protection for GRSG or its habitat (USDA 2015a, pg. 71, USDA 2015b, pg. 65). Individual national forests/grasslands, during the process of incorporating the GRSG LMP Amendments into their existing LMPs, will make determinations about existing MA direction that would be replaced by the Amendments.

Standards and guidelines in the LMP Amendments have been developed to provide direction for the potential activities that can occur in GRSG habitat management areas (USDA 2015a, pg. 26, USDA 2015b, pg. 25). A LMP amendment is required to add, modify, or remove one or more standards, or to change how or where one or more standards apply to all or part of the plan area (including management areas or geographic areas). Guidelines are written with inherent flexibility for site-specific project adjustments, so long as the purpose of the guideline is met. However, if an adjustment is necessary to effectively address specific circumstances, it must be supported by analysis demonstrating that the purpose for the guideline can still be effectively met. A LMP amendment is necessary to add, modify, or remove a guideline when implementation of a proposed action would not be consistent with the guideline. The Responsible Official has the discretion to determine whether and how to amend the plan.

As new information about GRSG habitat becomes available, including seasonal habitats, mapped in coordination with the state wildlife agencies and USFWS, and based on best available scientific information, the Forest Service may revise the GRSG habitat management area maps and associated management decisions through LMP amendment/revision, as appropriate (see below).

Projects with decisions made on or after the effective date of the RODs must be consistent with the LMP Amendments. Projects with decisions made before the effective date of the RODs may proceed unchanged (USDA 2015a, pg. 70, USDA 2015b, pg. 64)

Changes to Habitat Management Area Maps

Changes to habitat management area maps would be accomplished either through LMP amendment/revision or through administrative changes (without amendment/revision). This would be determined through the application of policies on Plan Amendment or Administrative Changes as described below and as determined by the Responsible Official.

FSH 1909.12 – Land Management Planning Handbook, Chapter – Zero Code.

The Forest Supervisor is responsible for developing, amending, or revising plans, except when the Regional Forester; the Chief; the Under Secretary, Natural Resources and Environment; or the Secretary acts as the ***Responsible Official*** *under Title 36,*

*Code of Federal Regulations, section 219.2(b)(3) (36 CFR 219.2(b)(3)).(*Section 04 – Responsibility*)*

Responsible Official: *The official with the authority and responsibility to oversee the planning process and to approve a plan, plan amendment, and plan revision (36 CFR 219.62).* (Section 05 – Definitions)

A plan amendment is required to add, modify, or remove one or more plan components, or to change how or where one or more plan components apply to all or part of the plan area (including management areas or geographic areas) (36 CFR §219.13 (a)). As noted above, the habitat management area maps are overlays and are not treated as a land allocation. As overlays, the habitat management areas provide areas where plan components (e.g. standards, guidelines) apply.

FSH 1909.12, Chapter 20, 21.5 states that an administrative changes are changes to plan content **except** for changes to the substance of plan components, or to the application of plan components to specific areas within the planning area. This implies that a change in where the plan components are applied would not be an administrative change. However, for example, clerical errors to habitat management area boundaries can be corrected with an administrative change (FSH 1909.12, Chapter. 20, 21.5). The Responsible Official has the discretion to determine whether and how to amend the plan or to apply administrative changes.

Habitat management areas should not be confused with seasonal habitats. Seasonal habitats were described in the GRSG LMP Amendments and modeling was used to establish preliminary seasonal habitat maps for analysis in the FEIS'. These preliminary seasonal habitat maps will be refined without plan amendments through working with state wildlife agencies and other stakeholders to reflect improving knowledge of how GRSG use these seasonal habitats.

36 CFR §219.13 Plan amendment and administrative changes

(a) Plan amendment. A plan may be amended at any time. Plan amendments may be broad or narrow, depending on the need for change, and should be used to keep plans current and help units adapt to new information or changing conditions. The responsible official has the discretion to determine whether and how to amend the plan. Except as provided by paragraph (c) of this section, a plan amendment is required to add, modify, or remove one or more plan components, or to change how or where one or more plan components apply to all or part of the plan area (including management areas or geographic areas).

(b) Amendment process. The responsible official shall:

(1) Base an amendment on a preliminary identification of the need to change the plan. The preliminary identification of the need to change the plan may be based on a new assessment; a monitoring report; or other documentation of new information, changed conditions, or changed circumstances. When a plan amendment is made together with, and only applies to, a project or activity decision, the analysis prepared for the project or activity may serve as the documentation for the preliminary identification of the need to change the plan;

(2) Provide opportunities for public participation as required in §219.4 and public notification as required in §219.16. The responsible official may combine processes and associated public notifications where appropriate, considering the scope and scale of the need to change the plan; and

(3) Amend the plan consistent with Forest Service NEPA procedures. The appropriate NEPA documentation for an amendment may be an environmental impact statement, an environmental assessment, or a categorical exclusion, depending upon the scope and scale of the amendment and its likely effects. A proposed amendment that may create a significant environmental effect and thus require preparation of an environmental impact statement is considered a significant change in the plan for the purposes of the NFMA.

(c) Administrative changes. An administrative change is any change to a plan that is not a plan amendment or plan revision. Administrative changes include corrections of clerical errors to any part of the plan, conformance of the plan to new statutory or regulatory requirements, or changes to other content in the plan.

21.5 – Administrative Changes (FSH 1909.12 Land Management Planning Handbook, Chapter 20 – Land Management Plan)

Administrative changes: An administrative change is any change to a plan that is not a plan amendment or plan revision. Administrative changes are:

1. Corrections of clerical errors to any plan content, including plan components.
2. Any changes to plan content, including plan components, when necessary to conform the plan to new statutory or regulatory requirements, for which there is no discretion.
3. Any other changes to plan content except for changes to the substance of plan components, or to the application of plan components to specific areas within the planning area.

The Responsible Official shall give public notice before issuing an administrative change (36 CFR 219.13(c)(2)). The public notice may be made in any way the Responsible Official deems appropriate, except for, at a minimum; the notice must be posted online on the administrative unit's planning website.

- A substantive change to the monitoring program made outside of the process for plan revision or amendment may be made only after notice to the public of the intended change and consideration of public comment. Administrative changes to the monitoring program must have at least 30 days for public comment.
- All other administrative changes may be made following public notice.

After reviewing comments on the proposed change, if any, the Responsible Official may make the change effective by posting the change online. Administrative changes are not subject to the objection process (36 CFR 219.50). The Responsible Official should be transparent with the public and governmental entities when making administrative changes to "other plan content" by reaching out to the public early. When considering public and governmental participation, the Responsible Official should consider the importance of the need to change the plan and conduct appropriate outreach that is commensurate with the change to be made and the level of public and governmental interest. Public involvement may be minimal for correction of clerical errors.

Habitat Monitoring and Assessment

Overview

The Great Basin ROD (USDA 2015a) at page 36 and the Rocky Mountain ROD (USDA 2015b) at page 34 describes how the Forest Service will accomplish habitat monitoring. Monitoring will be based on criteria identified in the Greater Sage-grouse Monitoring Framework (Appendix A of the Great Basin ROD and of the Rocky Mountain ROD). Specifically, the RODs state:

> *To monitor habitats, the Forest Service expects to measure and track attributes of GRSG habitat management areas at the broad scale and attributes of habitat availability, patch size, linkage/connectivity habitat, edge effect, and human disturbances at the mid-scale... The Framework also describes the need for fine-scale and site-specific habitat monitoring that may vary by area depending on existing conditions, habitat variability, threats, and land health. Indicators at the fine and site scales should be consistent with the Sage-Grouse Habitat Assessment Framework; however, the values for the indicators could be adjusted for local conditions.*

Fine and site scale habitat monitoring will be consistent with the Sage-grouse Habitat Assessment Framework (HAF) indicators, however the values for the indicators could be adjusted for local conditions when research data supports a modification. These indicators and monitoring elements will be included in Forest Monitoring Plans which will be completed by each Forest.

Greater Sage-grouse Monitoring Framework and the HAF

The Sage-grouse Habitat Assessment Framework (HAF), BLM Technical Reference 6710-1, (Stiver et al. 2015) adapts recommendations from Johnson (1980), who identifies hierarchical orders of habitat selection useful in defining species habitat selection criteria at various scales (from broad to fine). The HAF focuses on four hierarchical orders (scales) and identifies attributes for each that are considered important in understanding sage-grouse as a landscape species. Broad-scale assessments focus on species at the range-wide scale. Mid-scale assessments focus on species at the population scale. Forests typically assess habitats at the fine (seasonal habitats for a population) and the site scale (use areas within seasonal habitats).

The HAF further defines protocols for quantifying these attributes, identifies habitat suitability indicators, and makes recommendations for data collection methods. The HAF introduces broad and mid-scale assessment needs, however it particularly focuses on the fine and site scale. The Greater Sage-grouse Monitoring Framework (Appendix A of the Great Basin ROD and

of the Rocky Mountain ROD) outlines the process and data sets used in the broad and mid-scale analyses completed to date.

Tables 1-7 in the HAF identify the habitat metrics and suitability characteristics for these various orders of selection (scales). Table 8 identifies published literature that can be used as data sources for the various scales. These tables are not reiterated here, but should be consulted prior to project analyses.

The following **Table H-1** summarizes some of the available data sources that are useful in assessing sage-grouse habitat conditions for the four orders of assessment. Geospatial data is widely available for the higher order scales (broad, mid, and fine). Historical data collected at the site (project) scale may also be available for some areas and may be transferrable to the HAF analysis process.

New habitat monitoring and assessment techniques may be considered as they become available to improve data collection methodologies. However the overall intent of monitoring and data collection is to collect data in a manner at the fine and site scales that will facilitate data consolidation across administrative boundaries consistent with principles in the Greater Sage-grouse Habitat Monitoring Framework.

For most projects, we do not have large data sets at site (project) scales to address all of the vegetation metrics listed in the HAF. However, data collected at this scale should be at a level sufficient to meet NEPA standards, and analyses needs to provide sufficient information to support management decisions.

Table H-1 should not be viewed as a comprehensive step by step approach to assessments, but rather identifies the types of data available for various scale assessments and the responsible units for compiling or collecting this data.

Third Order HAF (Fine Scale) and Fourth Order HAF (Site Scale)

The Habitat Assessment Framework (HAF), (Stiver et al. 2015) will be used to determine whether GRSG habitat exists and the condition/suitability of that habitat when analyzing the effects of projects or activities on GRSG habitat. The Third Order HAF provides a process to identify seasonal habitats, this process should be completed using all available data, such as information from local state fish and wildlife agencies, local working groups, published research, existing data, etc.

The RODs (USDA 2015a, USDA 2015b) and associated LMP Amendments include Habitat Desired Conditions. The Desired Conditions in Table 1 (Tables 1a and 1b for Nevada) of the LMP Amendments are GRSG habitat attributes that will be evaluated at the Third Order Scale as described on pages 22-27 of the HAF (Stiver et al. 2015).

Seasonal habitat maps are used in the Third Order assessment. The federal and state agencies are currently developing seasonal habitat maps that better define breeding/nesting, brood-rearing (summer) and winter (fall/winter) habitats. Until those maps are available, Forests are advised to use lek buffers for assessing breeding habitat. Lek buffers were developed specifically for each state based on the distance of nest sites from leks. Suitable habitats within these lek buffers are defined as breeding habitats. Monitoring plots for nesting will be within these buffer areas. Plots focusing on suitable brood-rearing habitat could include plot sampling both within and outside of the lek buffer areas depending on identified seasonal habitats. We recognize that there can be overlap among these areas, but plot sampling and analysis should focus on the specific season use in question.

For Fourth Order (Site Scale) assessments, the USFS will work in cooperation with BLM to establish training teams; to provide training to USFS and BLM field staff in the spring of 2016. This training will include field sampling, during which an evaluation will be conducted of whether the site/habitat has the site potential to achieve the Desired Conditions in Table 1 (Tables 1a and 1b) and whether the site has the ability to achieve the vegetation heights found in Table 3 (Table 2 for Wyoming) for Livestock Grazing Management.

Details concerning this evaluation and protocols used to determine the sampling sites and data collection are described in the GRSG Vegetation Implementation Guide.

Table H-1: *Key Indicators from the Habitat Assessment Framework for each of the spatial scale orders, potential data sources available, and the responsible USFS units for compiling or collecting data to be used in analyses.*

Scale	Key Indicators/Metrics (HAF)	Potential Data and Information Sources	Responsible NFS Unit
Broad Scale 1st Order (Range-wide)	1) Range-wide Distribution 2) Range-wide Threats	The process for the broad scale analysis is described in the Greater Sage-grouse Monitoring Framework (Appendix A of the RODs). See Tables 1, 3, and 6 of the Greater Sage-grouse Monitoring Framework for GIS data sets and descriptions useful at broad and mid scales. <u>Publications informing the broad scale analysis:</u> Schroeder et al. (2004) – Range-wide map of historical and current species range. USFWS (2013) – The COT Report Identifies threats by management areas and population trends by management zones. Manier et al. (2013) – Quantitative data for threats at Management Zone scales.	Washington/Regional Offices - Provide web-link to data sets - Coordinate with other agencies and organizations - Ensure accuracy of data on NFS lands - Provide guidance for use of broad-scale data in analysis and monitoring *Note, data compilation is ongoing and updated periodically in coordination with BLM **Note, this is tracked and reported by BLM and the NOC
Mid-Scale 2nd Order (Population)	3) Habitat Availability 4) Patch Size and Number 5) Patch Connectivity 6) Linkage Characteristics 7) Landscape Matrix 8) Anthropogenic Disturbances	FEISs - PHMA/GHMA/habitat management area maps Greater Sage-grouse Monitoring Framework (Appendix A of the RODs) <u>Publications informing the mid-scale analysis:</u> USFWS (2013) -PACs from COT, Threats, Population Trend FIAT (2013) – Great Basin Chambers et al. (2014) and Chambers et al. (in press) Resilience/Resistance Analyses for Great Basin and Rocky Mountain Sage-grouse Habitat Suitability Maps (in prep.) Populations Crist et al. (2015) – Connectivity	Regional Offices - Provide web-link to data sets - Provide guidance for data use in analysis and monitoring - Coordinate with other agencies and states - Review data for reporting consistency *Note, data compilation is ongoing and updated periodically in coordination with BLM **Note, this is tracked and reported by BLM and the NOC

Scale	Key Indicators/Metrics (HAF)	Potential Data and Information Sources	Responsible NFS Unit
Fine Scale 3rd Order (Seasonal Habitats within populations)	1) Seasonal Habitat Availability 2) Seasonal Use Area Connectivity 3) Anthropogenic Disturbances	Defined in Forest Plan Amendments Table 1 (Tables 1a and 1b in Nevada) (Desired Conditions) <u>Publications informing the fine scale analysis:</u> Coates et al. (2014) – Nevada/NE CA habitat modeling State seasonal habitat maps Infrastructure data bases (e.g. FEIS, INFRA) Crist et al. (2015) – Connectivity	Regional Office/Supervisor's Offices - Fine and Site Scale Assessment and Monitoring Training - Provide guidance for use of fine scale data analysis and monitoring - Coordinate with other agencies, local working groups, and states - Review and ensure data accuracy
Site Scale 4th Order (Use Areas within Seasonal Habitats)	1) Sagebrush Cover (all seasons) 2) Sagebrush Height (all seasons) 3) Predominant Sagebrush Shape (breeding only) 4) Perennial Grass and Forb Heights (breeding) 5) Perennial Grass Cover (breeding and summer/late brood-rearing) 6) Perennial Forb Cover (breeding and summer/late brood-rearing)	The type/nature of a project will dictate the information that needs to be collected in the field. Almost all of these data will require metrics from field data. Some guidance: - Data Collection Standards/Forms – Available in the HAF. - Existing vegetation analyses can be used as a proxy, or transferred to the HAF forms, if feasible. - Collect data specific to analyze and support management decision at project (site) scale. - Goal is to eventually have this information available at the site scale for use in multiple projects, and for inventory and monitoring purposes. *Note, the values for these indicators could be adjusted for local conditions when research data supports a modification.	National Forests/Ranger Districts - Participate - Fine and Site Scale Assessment and Monitoring Training - Coordination with region, agencies, local working groups, and states to ensure consistency - Field data collection - Data quality review

Scale	Key Indicators/Metrics (HAF)	Potential Data and Information Sources	Responsible NFS Unit
	7) Preferred Forb Availability (breeding and summer/late brood-rearing) 8) Riparian Stability (summer/late brood-rearing) 9) Availability of Sagebrush Cover (leks and summer/late brood rearing – riparian/wet meadow) 10) Proximity of Detrimental Land Uses (leks) 11) Proximity of Trees or Other Tall Structures (leks)		

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