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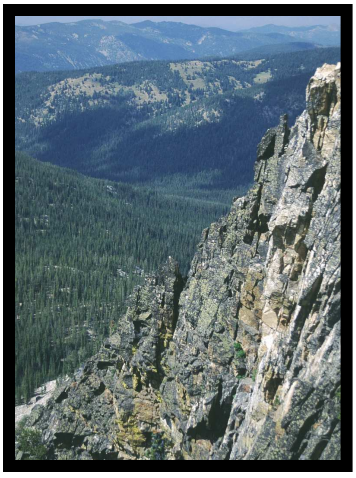
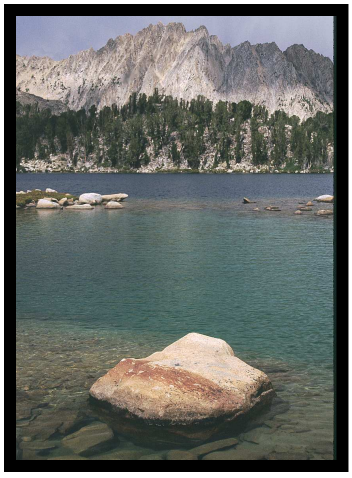


Boise National Forest

Payette National Forest



Sawtooth National Forest

Photos by David Ede

Final Supplement to the Final Environmental Impact Statement for the Southwest Idaho Ecogroup Land and Resource Management Plans

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Abstract: This Final Supplement to the July 2003 Final Environmental Impact Statement (FEIS) for the Southwest Idaho Ecogroup Land and Resource Management Plans (Forest Plans) documents the analysis completed to address the requirements of 36 CFR 219.20 Grazing Resources, relative to Management Indicator Species (MIS). Specifically, the regulation at 36 CFR §219.20 Grazing Resource requires:

> "In forest planning, the suitability and potential capability of National Forest System lands for producing forage for grazing animals and for providing habitat for management indicator species shall be determined as provided in paragraphs (a) and (b) of this section. Lands so identified shall be managed in accordance with direction established in forest plans.
>
> (a) Lands suitable for grazing and browsing shall be identified and their condition and trend shall be determined. The present and potential supply of forage for livestock, wild and free-roaming horses and burros, and the capability of these lands to produce suitable food and cover for selected wildlife species shall be estimated. The use of forage by grazing and browsing animals will be estimated. Lands in less than satisfactory condition shall be identified and appropriate action planned for their restoration."

The analysis documented in this Supplement, supplements the Rangeland Resources section of the 2003 FEIS to: identify capable MIS habitat on National Forest System (NFS) lands within the Southwest Idaho Ecogroup; to identify capable MIS habitat in less than satisfactory condition where risks associated with livestock grazing have contributed to the less than satisfactory condition; and to identify Forest Plan direction that addresses restoration needs for those lands.

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Chapter 3 - Rangeland Resources

INTRODUCTION

The Rangeland Resources section of the Final Environmental Impact Statement for the Southwest Idaho Ecogroup Land and Resource Management Plans (2003 FEIS) included an analysis of capable and suitable rangeland pursuant to 36 CFR §219.20. The 2003 FEIS also included an analysis of suitable rangelands relative to terrestrial wildlife species, finding that "all lands, with the exception of talus slopes, water and rock, are suitable for grazing and browsing by wildlife" (2003 FEIS pg 3-674). However, the 2003 FEIS did not include a capability analysis of management indicator species (MIS) habitat.

Specifically, the regulation at 36 CFR §219.20 Grazing Resource requires:

> "In forest planning, the suitability and potential capability of National Forest System lands for producing forage for grazing animals and for providing habitat for management indicator species shall be determined as provided in paragraphs (a) and (b) of this section. Lands so identified shall be managed in accordance with direction established in forest plans.
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Consistent with 36 CFR §219.20(a), this analysis will supplement the Rangeland Resources section of the 2003 FEIS to: identify capable MIS habitat on National Forest System (NFS) lands within the Southwest Idaho Ecogroup (SWIEG) by identifying watersheds where MIS source habitat[1] is coincident with open domestic livestock grazing allotments; identify capable MIS habitat in less than satisfactory condition where risks associated with livestock grazing have contributed to the less than satisfactory condition; and identify Forest Plan direction that addresses restoration needs for those lands. NFS lands that exist outside open allotments, while important to MIS species, are not addressed in this supplement, as they are not affected by domestic grazing animals. MIS for the three forests are:

- White-headed woodpecker – Boise and Payette NFs
- Pileated woodpecker – Boise, Payette and Sawtooth NFs
- Greater sage-grouse – Sawtooth NF

[1] **Source habitat:** Those characteristics of vegetation that support long-term wildlife species persistence, or characteristics of vegetation that contribute to stable or positive population growth for a species in a specified area and time.

CURRENT CONDITIONS

Background

Analysis supporting the 2003 SWEIG Forest Plans relied upon a multi-scale analysis using the principles and science generated in support of the Interior Columbia Basin Ecosystem Management Project (ICBEMP MOU and Strategy, 2003; Raphael et al. 2000; and, Wisdom et al. 2000). Through the 2006 Forest Plan annual monitoring reports, the SWEIG Forests announced their intent to develop a Forest Plan-level comprehensive wildlife conservation strategy (WCS) as part of accomplishing Forest-wide Wildlife Objective WIOB03[2]. Development of the WCS relies upon an updated multi-scale analysis using the same principles and science as the 2003 Forest Plans. The updated analysis incorporates new information generated after the revised Forest Plans were implemented in September 2003. New information includes mid-scale assessments such as the Comprehensive Wildlife Conservation Strategies for the State of Idaho and Utah, respectively (Idaho CWCS 2005 and Utah CWCS 2005), and the Conservation Plan for the Greater Sage-Grouse in Idaho (2006 Public Review Draft).

The WCS, in conjunction with the existing Aquatic Conservation Strategy (ACS) and current Forest Plan direction, will provide a comprehensive mid-scale spatial strategy for managing the biophysical resources of the three National Forests. As part of the WCS effort, wildlife analyses supporting the 2003 FEIS disclosures are being updated to address new information from recently completed mid-scale assessments, such as those cited above. The 2003 analyses are also being refined as part of the WCS effort to provide the information in a format that allows for the spatial assessments needed to identify the appropriate restoration type and priority for various habitats, including habitats for MIS, across SWIEG at the scale of 5th code hydrologic units (HUC)[3].

In support of this Rangeland Resources MIS capability supplement, completion of WCS analyses pertaining to MIS species and their associated habitat were identified as a high priority and were completed in the winter of 2007[4] (herein after referred to as the 2007 Analysis). This supplement uses information generated from the 2007 analyses to define and spatially locate MIS source habitat in SWIEG; to identify MIS habitat in less than satisfactory condition where domestic livestock grazing may be a contributing factor; and to identify the appropriate type and priority for restoration of MIS habitat determined to be in less than satisfactory condition where domestic livestock may be a contributing factor.

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[2] WIOB03 - Prioritize wildlife habitats to be restored at a mid- or Forest-scale, using information from sources such as species habitat models, and fine-scale analyses. Initiate restoration activities on priority wildlife habitats to move current conditions toward desired conditions.

[3] 5th code HUCs within SWIEG typically range from 30,000 to 100,000 acres.

[3] WCS assessments completed in 2007 to support this MIS supplement include (1) Low Elevation, large and old forest habitat family 1 account; (2) Broad Elevation, large and old forest habitat family 2 account; (3) Sagebrush habitat family 11

[4] WCS assessments completed in 2007 to support this MIS supplement include (1) Low Elevation, large and old forest habitat family 1 account; (2) Broad Elevation, large and old forest habitat family 2 account; (3) Sagebrush habitat family 11 account; (4) Pileated Woodpecker Species Account; (5) Whiteheaded Woodpecker species Account; (6) Greater sage-grouse Species Account.

Analysis Methods

The following subsections provide a brief description of the analysis methods used to generate the information summarized in this supplement. A more detailed description of modeling methods used to estimate current and historic source habitat; estimation and validation of vegetation occurrence data; assessing changes in source habitats from historical to current conditions for species; and mapping risk factors in relation to source habitats can be found in the project record for this supplement.

Definitions of Key Terms used in this Supplement:

Source Habitat – those characteristics of macrovegetation that contribute to stationary or positive population growth for a species in a specified area and time.
Source Habitat Capacity – those acres capable of developing source habitat although at any one point in time acres may, or may not, be in source habitat condition
Capable MIS Habitat – source habitat occurring within allotments within the range of the Forest-designated Management Indicator Species.

Determination of Capable MIS Habitat:

A spatial assessment of acres of source habitat for each MIS was completed using models developed by Nutt et al. Source habitat capacity was depicted by mapping forested Potential Vegetation Groups (PVGs) and non-forested covertypes identified in the models that were capable of developing the structural conditions necessary to meet the source habitat definition. Information was displayed by watershed (5^{th} HUC) unit across the three National Forests. (Refer to Appendix A, 2003 Forest Plans, for PVG and cover type descriptions).

Models were run against 30-meter resolution LandSat data collected in 1995, 1998 and 2000 (Redmond et al. 1997, Edwards and Homer, 1998; McClure et al. 2002). Results from the models used to assess MIS source habitat are not detailed enough to identify exact, per acre, habitat locations or quantities. The 30-meter resolution LandSat imagery is best able to depict spatial and quantitative patterns rather than an absolute representation of the landscape, therefore a classification was used to stratify results in a manner that distinguished areas of higher amounts of capacity to develop source habitat from those with less capacity. To allow for consistency across analysis scales, assessments were conducted at the watershed scale (5^{th} HU)[5] using analysis classes consistent with those used in Interior Columbia Basin assessments (Wisdom et al. 2000). The four classes of source habitat capacity are:

- >0% but < 25 % of the watershed acres capable of providing MIS source habitat;
- ≥25% but < 50% of the watershed acres capable of providing MIS source habitat;

[5] This scale was used as watersheds are the distribution unit used to identify species habitat networks and linkages and address distribution requirements.

- ≥50% but < 75% of the watershed acres capable of providing MIS source habitat; or
- ≥75% of the watershed acres capable of providing MIS source habitat.

It is important to note that, as implied by the analysis classes described above, just because a given watershed is identified as being capable of providing source habitat does not mean that every acre within that watershed is source habitat. At this scale, model results provide a representation of the spatial arrangement of the source habitat capacity across landscape scales, and the likely importance of one watershed over another in the distribution of habitat to support associated species across the forest.

Spatial data from the MIS source habitat capacity assessments were overlaid with open grazing allotment boundaries from the 2003 FEIS to determine where MIS habitat could be affected by domestic livestock grazing. Those areas coincident with open grazing allotments were identified as capable MIS habitat relative to the assessments required by 36 CFR 219.20.

Identification of Lands in Less Than Satisfactory Condition pursuant to 36 CFR219.20:

Once capable MIS habitat was identified, the condition of that habitat needed to be determined in order to discern lands in less than satisfactory condition consistent with requirements at 36 CFR 219.20. To accomplish this, we compared historic source habitat conditions to current by 5th HUC watershed. Current source habitat was modeled using the model papers referenced above developed by Nutt et al (2007). Historic source habitat was modeled using desired condition parameters defined by PVG and covertype in Appendix A of the Forest Plan (2003). Change in capable MIS habitat was evaluated through the following steps using a combination of species range maps and source habitat derived from vegetation and other criteria:

- The estimated historic capable MIS habitat amount was compared against the current quantity of Capable MIS habitat estimated to exist within a 5th HUC, and the relative extent of change within a watershed was estimated. (Obrien and Nutt, 2005).
- Watersheds were grouped based on the relative degree of change between current and historic Capable MIS habitat acres. To provide consistency across analysis scales (broad and mid-scales) five changes classes (two positive change classes, and three negative change classes) consistent with those used in Interior Columbia Basin assessments (Wisdom et al. 2000) were used. Only the negative change classes were used in identification of lands in less than satisfactory condition. The three negative change classes used are:

    - >0% but < 20 % decrease between historic and current Capable MIS habitat;

- ≥20% but < 60% decrease between historic and current Capable MIS habitat; or
- ≥60% decrease between historic and current Capable MIS habitat

Watersheds where a ≥20% decrease in Capable MIS habitat has occurred were identified as having lands in less than satisfactory condition (Wisdom et al 2000). Similar to that stated for earlier analyses, data used to assess where capable MIS habitat is likely in less than satisfactory condition is not detailed enough to identify exact, per acre, locations within watersheds of concern. The modeling can portray change classes by watershed showing patterns of change and their spatial arrangement within the watersheds of interest.

While this analysis displays where current Capable MIS habitat conditions are departed from historic, it does not differentiate the causal factors for that departure. For example, change in vegetative canopy closure from historic to current is one of the primary indicators of change in source habitat. The model utilizes satellite imagery to identify where such changes in vegetation have occurred, but cannot identify what caused those changes. Changes in Capable MIS habitat condition can be attributed to a variety of realized threats including but not limited to timber harvest, change in fire regime, road density, urban and agricultural development, invasive species and livestock grazing. The determination of specific threats that contributed to change in Capable MIS habitat must be assessed on a case-by case basis at the project or site level.

To ascertain where livestock grazing may be a contributing factor to the less than satisfactory condition, results of this analysis were overlain with open grazing allotment data. Due to the inherent habitat requirements for the individual species, the contribution of livestock grazing and its associated threats to lands in less than satisfactory condition varies considerably by MIS. In many cases, threats associated with livestock grazing contributing to less than satisfactory conditions are limited to isolated areas within the watershed rather than occurring across the watershed as a whole. A description of the threats associated with livestock grazing that contribute to lands in less than satisfactory condition by individual MIS is included in the species-specific assessments.

The following pages supplement the information found on page 3-669 of Chapter 3 of the Southwest Idaho Ecogroup Land and Resource Management Plans Final Environmental Impact Statement.

Rangeland Capability – Management Indicator Species

As described above, this supplement is being prepared to address the requirements of 36 CFR §219.20 Grazing Resources, relative to MIS. To be addressed in this supplement, the following criteria must be met for each MIS:

a. MIS source habitat must occur within open domestic grazing allotments,

and …

b. Domestic livestock grazing must pose a direct or indirect effect that either (a) is measurably[6] contributing to the less than satisfactory condition of capable MIS habitat within an open allotment, and/or (b) measurably threatens the ability to restore capable habitat.

The following discussion assesses each MIS relative to criteria (a) and (b).

Pileated woodpecker:

The pileated woodpecker is an MIS for the Boise, Payette and Sawtooth NF's. Unlike white-headed woodpecker and Greater sage-grouse, pileated woodpecker is considered to be apparently secure (S4) within Idaho (NatureServe 2005).

Source habitats for the pileated woodpecker are generally late-seral stages of the subalpine, and montane community group/types (Wisdom et al. 2000; vol. 3, appendix 1, table 1). Cover types and structural stages that provide source habitat include: Engelmann spruce-subalpine fir, structural stage old-forest multi-story; and Interior Douglas-fir, Western Larch, and Grand Fir, in the old forest multi-story and old forest single story, structural stages (Wisdom et al. 2000; vol. 3, appendix 1, table 1).

Source habitats as defined by Wisdom et al. (2000) have been correlated with Potential Vegetation Groups (PVGs), tree size, and crown closure structural stages on the three National Forests. Based on a literature review of the species' habitat requirements and the correlation of habitat needs to potential vegetative groups (Ecosystem Diversity Matrix- Southern Idaho Batholith Landscape), PVGs 3, 6, 8, and 9 were identified as having the structural and compositional capability to develop suitable tree sizes, canopy layers, and crown closure conditions under historic disturbance conditions (Nutt et al 2007). Specifically, PVGs 3, 6, 8, and 9; the large tree size class (>20 inches d.b.h.); and crown closure classes of moderate and high (>40 percent) are expected to provide source habitat for pileated woodpeckers (Nutt et al 2007). In addition to PVGs 3, 6, 8 and 9, PVGs 2 and 5, when functioning outside their historic range of variability, are capable of developing source habitat conditions that this species may utilize (large trees >20 inch

[6] Measurable Change = A measurable change is one that can be meaningfully detected, measured, or evaluated using accepted analysis or monitoring methods. A measurable change would not result from an insignificant or discountable effect. (Forest Plan glossary, page GL-23) Note: Refer to the glossary for definitions of insignificant or discountable effects.

DBH) and moderate or high canopy closures (>40% closure)). These conditions in PVGs 2 and 5 typically occur when historic disturbance processes (e.g. wildfire) are not operating which results in the higher canopy closures desired by this species.

The major threats to pileated woodpeckers have been identified as: (1) conversion of forest habitats to non-forest habitats; (2) short rotation, even-age forestry; (3) monoculture forestry; (4) forest fragmentation; (5) removal of logging residue, downed wood, and pine straw that would ultimately put nutrients back into the ecosystem and provide foraging substrate; (6) lightning striking cavity/roost trees because they are the oldest, tallest trees around as a result of cutting priorities; (7) deliberate killing by humans; and (8) toxic chemicals. The first four threats have been a major concern for some time (Nature Serve 2005, section "Management Summary"). While pileated woodpecker habitat does occur within open allotments (criteria #1), livestock grazing is not identified as a major threat to pileated woodpecker habitat. Threats to pileated woodpecker habitat from livestock impacts are believed to be incidental and limited to localized areas where livestock tend to congregate. Relative to the capability criteria for livestock grazing, PVGs 3, 6, 8 and 9 do not include habitat types capable of producing 200 pounds of livestock forage (Diem 1999, Rangeland Resources Technical Report 1#). These PVGs typically provide sparse or little livestock forage, an indication that grazing, should it be present, has a low likelihood of posing a risk to development or maintenance of source habitat characteristics such as large tree development or dense conditions.

PVGs 2 and 5 contain habitat types capable of producing 200 pounds/acre of livestock forage only when tree densities are consistent with historic conditions (i.e. typically less than 40% canopy) (Diem 1999, Rangeland Resources Technical Report 1#). When tree canopy closures exceed 40%, as is typical when these PVGs are functioning outside their historic condition, forage production is substantially reduced. PVGs 2 and 5 provide source habitat conditions for pileated woodpeckers only when they are departed from historic condition (i.e. denser). As a result, impacts associated with livestock grazing are believed to be incidental due to the reduced livestock forage production levels and higher tree densities in the understory that restrict travel and use by domestic livestock in these forests. Therefore, livestock grazing represents no measurable threat to the restoration of capable MIS habitat identified as in less than satisfactory condition.

In summary, while MIS source habitat for pileated woodpecker does occur within open allotments (criteria #1), detailed analyses contained in the project record have determined that livestock grazing:

a. has ***not*** measurably contributed to the less than satisfactory condition of MIS source habitat within an open allotment, nor would it

b. measurably threaten the ability to restore source habitat.

Therefore, pileated woodpeckers will not be carried forward into detailed analysis in this supplement.

White-headed Woodpecker:

White-headed woodpecker is an MIS for the Boise and Payette NFs. Source habitat for this species is found mainly in open and mature ponderosa pine and mixed ponderosa pine/Douglas-fir forests in Idaho (Frederick and Moore 1991, Groves et al. 1997). White-headed woodpeckers feed on conifer seeds during the fall and winter; during other times of the year, flying insects are important. Nests are usually excavated in large-diameter snags that have a moderate degree of decay (Bull et al. 1986, Bull et al. 1997). Nesting stands of ponderosa pine used by white-headed woodpeckers have a low canopy cover, generally less than 30 percent (Frederick and Moore 1991).

Source habitats as defined by Wisdom et al. (2000) have been correlated with Potential Vegetation Groups and structural stages. PVGs 1- Dry Ponderosa Pine/ Xeric Douglas-fir, 2- Warm Dry Douglas-fir/ Moist Ponderosa Pine, 3- Cool Moist Douglas-fir, 5- Dry Grand Fir, and 6- Cool Moist Grand Fir, have the structural and compositional capability to develop suitable tree sizes, canopy layers, crown closures and conditions for white-headed woodpeckers, under historic disturbance conditions. Specifically, PVGs 1, 2, 3, 5, and 6 with structural stages for large trees (>20 inches d.b.h.); and low crown closures (10-30 percent) are expected to provide source habitat.

Timber harvesting, agriculture, road construction, wildland fire exclusion, and domestic livestock have contributed to the decline of white-headed woodpecker habitat. Timber harvest has had the most significant impact on suitable habitat for white-headed woodpeckers (Wisdom et al. 2000). Removal of large-diameter trees (live and dead) and downed woody materials has resulted in elimination or reduction of nest and roost sites, and foraging habitat. Large numbers of unregulated livestock in the early to mid-1900's resulted in a loss of fine-fuels and created extensive areas of mineral soil seedbeds that resulted in numerous successful conifer seedlings[7, 8]. Fire suppression efforts and the lack of herbaceous understories to carry fire that historically helped thin regeneration resulted in increased stand densities in these once open forests[9]. In addition, Douglas-fir and grand fir in PVG5, which are less tolerant of fire than ponderosa pine, established at greater numbers than had occurred historically. Increases in stand densities from shade-tolerant conifers, ladder fuels, and high levels of dead and down woody fuel in overstocked areas has contributed to the risk of large stand-replacing wildfires. These same conditions have also made stands more vulnerable to insects, disease, and mortality during drought. Commensurately, increasingly dense forested conditions contribute to a decrease in livestock forage production.

Although current grazing is not identified as a risk or threat to white-headed woodpeckers

[7] Sloan, J.P. 1998. Historical density and stand structure of an old-growth forest in the Boise Basin of central Idaho. Pages 258-266 *in* T.L. Pruden; L.A. Brennan (eds.). Fire in ecosystem management: shifting the paradigm from suppression to prescription. Tall Timbers Fire Ecology Conference Proceedings, No. 20. Tall Timbers Research Station, Tallahassee, FL.

[8] Borman, M. 2005. Forest stand dynamics and livestock grazing in historical context. Conservation Biology, Vol 19 (5): 1658-1662

[9] Belsky, A.J.; Blumenthal, D.A. 1997. Effects of livestock grazing on stand dynamics and soils in upland forest of the interior west. Conservation Biology, Vol 11 (2): 315-327.

in the literature (ICWCS, Wisdom et al 2000, Garrett et al 1996, Ritter 2000 Idaho PIF), livestock grazing may indirectly influence some of the factors affecting white-headed woodpecker source habitat. Current livestock grazing across the range of the species within SWIEG is believed to have some localized effects to the development of younger forests and aspen stands including incidental trampling of reproducing tree seedlings, localized areas of increased soil erosion, and potential for introduction and spread of invasive weeds and other non-natives. However, livestock grazing likely has not had an important affect on the presence and abundance of large tree structure (living and dead) on the landscape. Conditions in most areas across the west including PVGs 1, 2, and 5 on the Payette and Boise are the result of historic, not current management activities[10].

Over the last 100 years structure and composition of PVGs 1, 2, and 5 on the Boise and Payette National Forest have changed dramatically. Historically, these forests consisted of widely-spaced, large fire tolerant ponderosa pine and occasionally Douglas-fir, and dense herbaceous layers. These large trees produced an abundance of cones. Frequent non-lethal fire helped produce cavity trees and contributed to mortality that created snags. PVGs 1, 2 and 5 contain habitat types capable of producing 200 pounds/acre of livestock forage only when tree densities are consistent with historic conditions (i.e. typically less than 40% canopy) (Diem 1999, Rangeland Resources Technical Report 1#). When tree canopy closures exceed 40%, as is typical when these PVGs are functioning outside their historic condition, forage production is substantially reduced. PVGs 3 and 6 typically provide sparse or little livestock forage, indicating that grazing, should it be present, has a low likelihood of posing a risk to development or maintenance of source habitat characteristics such as large tree development or dense conditions. PVGs 3 and 6 are also departed from historic conditions, but to a much lesser degree than PVGs 1, 2 and 5 (2003 FEIS, pg 3-445 to 3-446).

White-headed woodpecker habitat does occur within open allotments (criteria #1) on the Boise and Payette. However, due to the reduced livestock forage production levels and higher tree densities in the understory that restrict travel and use by domestic livestock in these forests, livestock impacts to white-headed habitat are believed to be incidental and limited to localized areas. Because of the localized nature of effects from livestock grazing to white-headed woodpecker habitat, livestock grazing represents no measurable threat to the restoration of capable MIS habitat identified as in less than satisfactory condition.

In summary, while MIS source habitat for white-headed woodpecker does occur within open allotments (criteria #1), analyses contained in the project record have determined that livestock grazing does ***not*** currently pose a direct or indirect effect that either:

a. has measurably contributed to the less than satisfactory condition of MIS source habitat within an open allotment, and/or

b. measurably threatens the ability to restore source habitat.

[10] Borman, M. 2005. Forest stand dynamics and livestock grazing in historical context. Conservation Biology, Vol 19 (5): 1658-1662

Therefore, white-headed woodpecker will not be carried forward into detailed analysis in this supplement.

Greater sage-grouse

Greater sage-grouse is an MIS on the Sawtooth National Forest. While both the Boise and Payette NFs have source habitat for Greater sage-grouse, Greater sage-grouse is not an MIS on these Forests and therefore, no further consideration is given to the species on the Boise or Payette as part of this analysis.

Greater sage-grouse occur predominantly in sagebrush communities and is considered a sagebrush obligate species. Lek sites, where males display during the breeding season, are characterized by low, sparse vegetation or bare ground. Nesting habitat is typically characterized by moderate sagebrush canopy cover (generally ranging from 15-25 percent) and an herbaceous understory of native grasses and forbs. Hens and their broods typically inhabit wet meadows and other mesic sites supporting a variety of forbs. During winter, Greater sage-grouse rely on sites where they can forage on sagebrush exposed above snow.

Greater sage-grouse source habitats include two of the three structural stages of big sagebrush and mountain big sagebrush (open canopy, low-medium shrub and closed canopy, low-medium shrub) and low sagebrush (0-10% canopy cover and 11-20% canopy cover) (Wisdom et al. 2000: Vol. 3, appendix 1, table 1). These source habitats also typically include an understory composed of native grasses and forbs. Greater sage-grouse also rely heavily on shrub/herbaceous wetland/riparian habitats in close proximity to sagebrush habitat, where native forbs provide spring and summer food for hens and their broods. In addition, special habitat features for this species include the need for large landscapes with a juxtaposition of habitats, presence of a native herbaceous understory, and access to succulent forbs.

The analysis of capable MIS habitat documented in this supplement considered the effects of livestock grazing on capable habitat for the Greater sage-grouse. Fire, invasive species, and sagebrush habitat fragmentation and loss from development were considered the more significant contributing factors to Greater sage-grouse decline and where restoration priorities and direction should be established (Wambolt et.al., 2002). The shift from historic to current percentages of cover type extent on the Forest is believed to be the result of the following influences, in descending order of importance:

- The suppression of wildfires for several decades has contributed to a reduced fire return interval. This has had a significant influence on the extent of non-forested vegetative cover types on the Sawtooth. As a result, forest cover types such as Douglas fir, ponderosa pine, and subalpine fir have replaced areas that were historically grasslands and shrublands; sagebrush shrublands have replaced grassland cover types because of the lack of fire disturbance; and, more recently, burned forested cover types and sagebrush shrublands have been replaced by large blocks of herbaceous and other shrublands such as rabbitbrush and snakeweed.

- Historic grazing contributed to changes of grassland, shrubland, and woodland cover types, as well as the structural characteristics of these cover types.

- The seeding of introduced grasses for site stabilization or forage production has contributed to cover type's changes within the perennial grass slopes and sagebrush types.

Current Conditions within Allotments - Sawtooth National Forest

The Sawtooth NF contains approximately 44% of its land base as shrubland vegetation. The remainder consists of forest vegetation, and non-vegetated areas. A large portion of the shrubland vegetation is composed of the various species and sub-species of sagebrush.

The Sawtooth National Forest provides primarily brood-rearing habitat distributed as patches, rather than continuous blocks. The proportions and distributions of sagebrush communities is the most important factor to habitat effectiveness for sage-grouse. Some subpopulations of Greater sage-grouse are isolated due to gaps where suitable environments are either absent or present in low abundance, limiting opportunity for intra-specific interactions. There are opportunities for subpopulations in most of the planning area to interact, but some populations are so disjunct or of such low density that they are essentially isolated from other populations.

Sixty out of 64 watersheds on the Sawtooth provided some degree of source habitat historically, although not all sagebrush acres may have been occupied by sage-grouse. The northern portions of the Sawtooth National Forest (i.e., Fairfield and Ketchum Ranger Districts and the Sawtooth National Recreation Area) have always been composed primarily of vegetation communities that do not provide suitable habitats for Greater sage-grouse. Thus, Greater sage-grouse populations have probably always been small, if existent at all, within these areas. Those populations that did occur were likely restricted to isolated patches on a seasonal basis. Conversely, suitable habitats for Greater sage-grouse were historically abundant throughout the southern portions of the Sawtooth National Forest (i.e., the Minidoka Ranger District). Therefore, divisions within this District likely contributed to large and widely-distributed populations of Greater sage-grouse.

Of the 60 watersheds that provided source habitat historically, all have open grazing allotments and are identified as capable MIS habitat for Greater sage-grouse (i.e. source habitat is, or historically was, present in currently open grazing allotments) (Table 1, and Figure 1). Approximately 63 percent of these watersheds (38/60) contain ≥25 percent Greater sage-grouse source habitat. These watersheds are located on the Fairfield (4), Ketchum (2) and Minidoka (32) Ranger Districts. Of these 38 Greater sage-grouse watersheds, 28 contain ≥50 percent Greater sage-grouse source habitat. All of these watersheds are located on the Minidoka Ranger District.

Table 1. Watersheds containing open allotments and historic Greater sage-grouse source habitat for the Sawtooth National Forest.

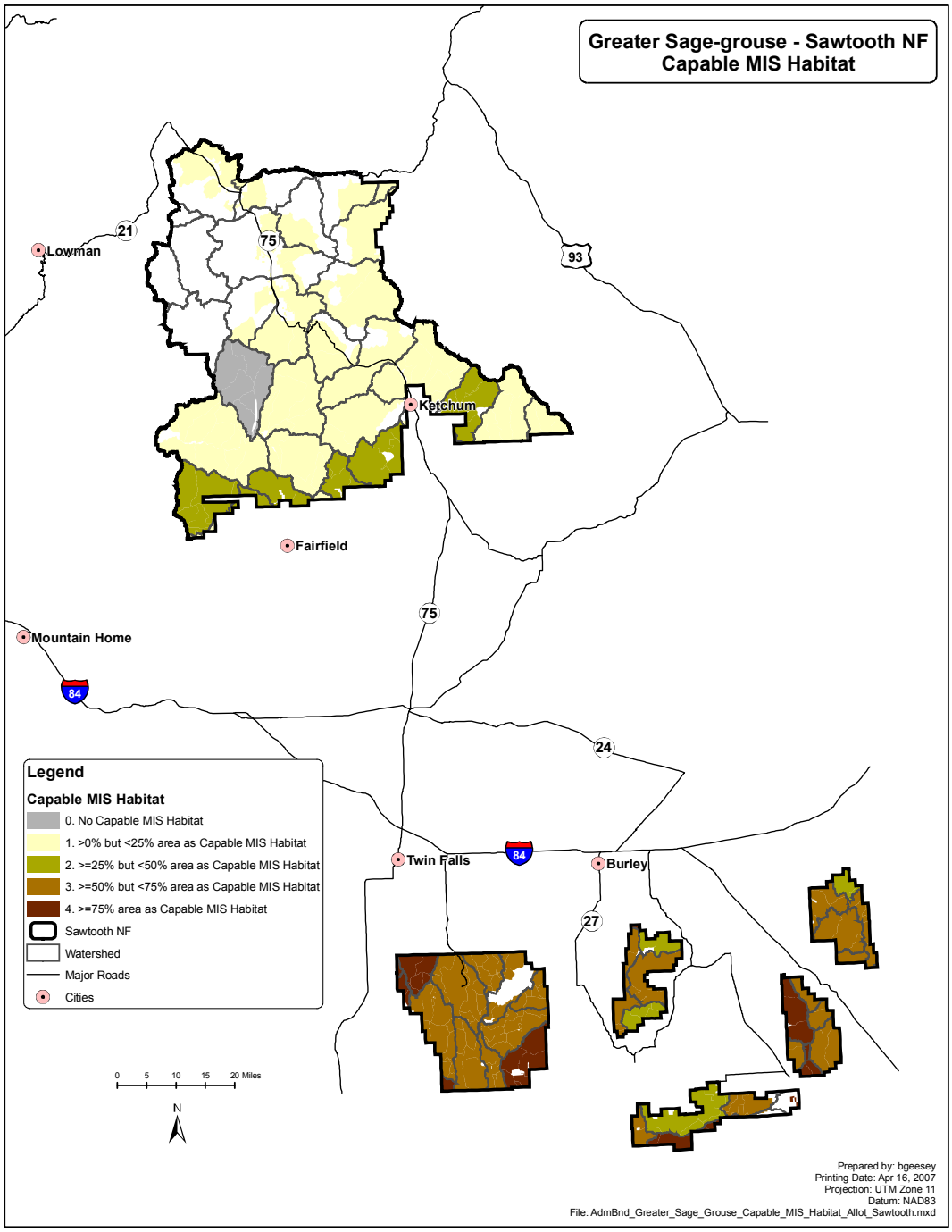
	Number of watersheds with historic Greater sage-grouse source habitat and open grazing allotments.				
Greater sage-grouse Source Habitat	>0 - <25% habitat	≥ 25 - <50% habitat	≥50 - <75% habitat	≥75% habitat	Total
Sawtooth National Forest	22	10	19	9	60

The Minidoka Ranger District provides the highest concentration of watersheds with historically, and currently, the most abundant source habitat for Greater sage-grouse on the Sawtooth National Forest in open allotments. The district contains sizable amounts of *key sage-grouse habitat* as described in the Conservation Plan for the Greater Sage-grouse in Idaho – July 2006 (2006 Conservation Plan) pg. 3-13.

Greater sage-grouse habitat on this district falls into the South Magic Valley Sage-grouse Planning Area (2006 Conservation Plan, pgs. 3-32 – 3-33). Within this planning area, the Bureau of Land Management administers 48% of the Greater sage-grouse habitat, 21% is located on private land, 5% is managed by the State and 26% (approximately 198,000 acres) is managed by the Minidoka Ranger District.

Historic livestock grazing has contributed to the current condition of Greater sage-grouse source habitat within most watersheds on the Sawtooth National Forest, and continues to present a risk. However, it is the cumulative impacts of wildfire, infrastructure (roads), annual grassland (i.e., cheatgrass), livestock grazing and human disturbance that are influencing landscape conditions and the current status of Greater sage-grouse in Idaho (2006 Conservation Plan, pg. 4-3) and on the Sawtooth National Forest. As described in the 2006 Conservation Plan, livestock management practices that promote the sustainability of desired native perennial grasses and forbs should sustain Greater sage-grouse habitat (2006 Conservation Plan, pg. 4-54). The 2006 Conservation Plan also recognizes that in some areas where successional pathways have been dominated by invasive species such as cheatgrass, that changes in livestock grazing management strategies or even the complete removal of grazing activity will not result in the improvement of some ecological states. These sites are generally off-Forest in the drier, low elevation sagebrush communities. The 2006 Conservation Plan goes on to state that "while subsequent changes in livestock management may be appropriate to nurture and maintain the restored area, such changes alone in the absence of restoration activities would likely provide little if any progress." (2006 Conservation Plan, pg. 4-55)

Figure 1. Capable MIS Habitat – Greater sage-grouse - on the Sawtooth National Forest



The following pages supplement the information found on pages 3-670-672 of Chapter 3 of the Southwest Idaho Ecogroup Land and Resource Management Plans Final Environmental Impact Statement.

Factors Affecting Rangeland Management and Suitability:

The regulations at 36 CFR 219.20 require that in forest planning, Forests identify lands suitable for grazing and browsing. The 2003 FEIS defines suitable rangeland as those "capable National Forest System lands that are allocated to grazing based on decisions related to social, economic, or environmental choices and uses foregone." Suitability is established to provide prescriptive management direction for project-level analysis and subsequent NEPA decisions, or as a decision not to graze specific designated areas. (2003 FEIS, pg. 3-666) The following section describes consideration of capable MIS habitat relative to rangeland suitability.

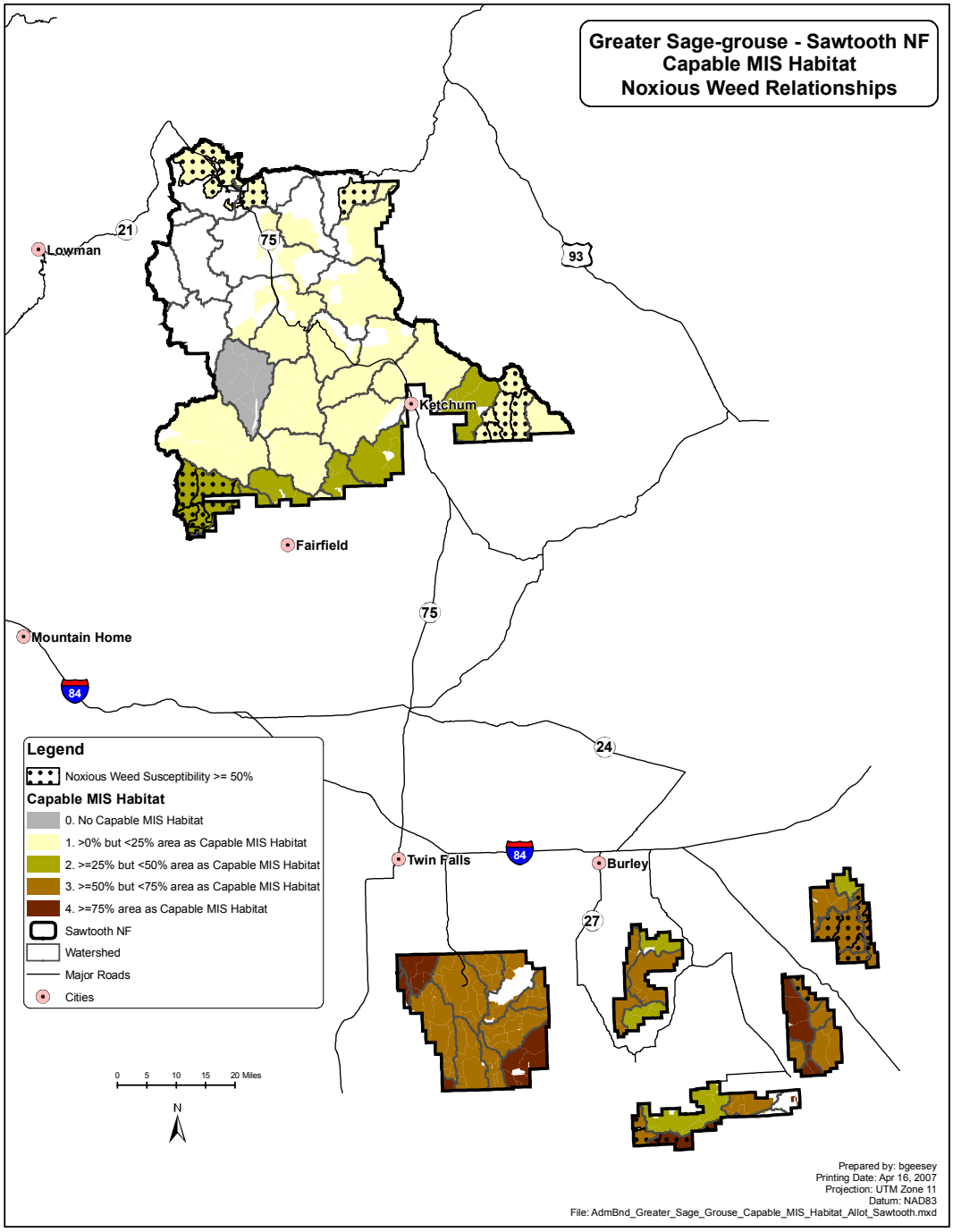
Capable MIS Habitat

The 2006 Conservation Plan identifies the most important threats to Greater sage-grouse across its range. These threats, in order of rank, include: (1) invasive species, (2) infrastructure as related to energy development and urbanization, (3) wildfire, (4) agriculture, (5) grazing, (6) energy development, (7) urbanization, (8) strip/coal mining, (9) weather, and (10) pinyon-juniper expansion (2006 Conservation Plan, page 4-1).

As shown above, invasive species was ranked as the primary extinction risk factor range-wide for Greater sage-grouse. Figure 2 displays watersheds on the Sawtooth where more than 50 percent of capable MIS (Greater sage-grouse) habitat is overlapped by weed susceptible soils. Weed susceptibility is influenced by three primary factors: 1) risk of exposure as a result of the level or types activities, i.e. amount of vehicular traffic, recreation stock use and other forms of dispersed recreation use, that either transport seed or create potential sites for new establishment ; 2) relative ability for new noxious weed populations to be detected by the FS or public; and 3) the relative ability and range of flexibility to treat established populations (2003 FEIS, pg. 3-627). Watersheds that currently have the greatest risk of livestock contributing to noxious weed spread and Greater sage-grouse habitat degradation are located on the Minidoka Ranger District. On this portion of the Forest, five watersheds contain abundant Greater sage-grouse source habitat (≥50 percent) within open allotments coincident with weed susceptible soils (≥50 percent).

As described in the 2003 FEIS, an estimated 77% of existing non-native plant infestations on the SWEIG Forests have originated from roadsides as a result of vehicle traffic (2003 FEIS, Chapter 3, Non-native Plants, pg 3-619 through 3-624). The second most common vector for weed seed transport and establishment is motorized and non-motorized recreation activities. Where open allotments overlap with areas of high weed susceptibility, there is a greater potential for loss of habitat quality as a result of noxious weed transport from livestock grazing. The risk for establishment of new infestations as a result of livestock grazing is highest in localized areas where excessive grazing use contributes to reduced ground cover and early plant successional stages. As noted in the 2003 FEIS, with the exception of a few situations, ranger district personnel have not identified livestock use as a significant contributor to the spread of exotics and noxious weeds (2003 FEIS pg 3-623).

Figure 2. Percentage of Area Identified as Greater sage-grouse Capable MIS habitat and the Relationship to Weed Susceptibility on the Sawtooth National Forest



Livestock grazing is listed as the fifth most important threat to Greater sage-grouse across its range (2006 Conservation Plan, page 4-1). Where livestock grazing overlaps with Greater sage-grouse source habitat, grazing can influence changes in vegetation composition and abundance. Though habitat impacts resulting from historic levels of livestock grazing have been substantially reduced under current practices, livestock grazing can still result in localized areas of damage to physical resources and vegetation.

Lands in Less Than Satisfactory Condition - Greater sage-grouse:

The regulations at 36 CFR 219.20 require the identification of suitable rangelands in less than satisfactory condition. As described in the Analysis Methods section of this supplement, watersheds where a ≥20% decrease in Capable MIS habitat has occurred were identified as having lands in less than satisfactory condition.

Figure 3 shows two maps depicting SNF watersheds placed in one of five categories based on their current and historic modeled proportions of Capable MIS habitat. The third map depicts these same watersheds placed in one of six categories based on the change in Capable MIS habitat over time. This analysis provides the context for assessing departure of Greater sage-grouse habitats, and for depicting the severity of the departure that can be used to prioritize restoration.

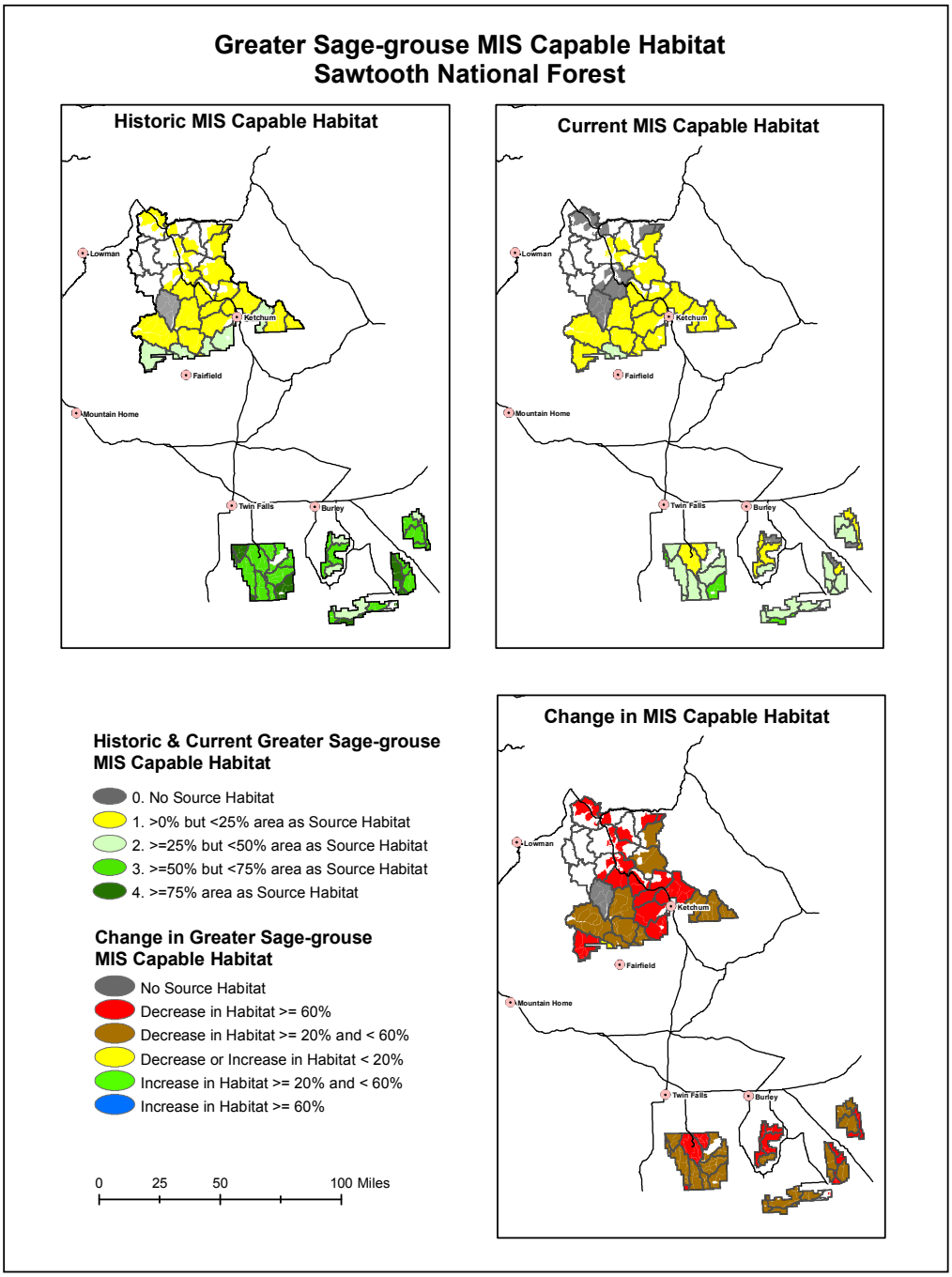
The first map shows the modeled proportion of historic Capable MIS habitat by watershed as a range of percentages. For example, a 100,000-acre watershed that historically contained 20,000 acres (20%) of Capable MIS habitat is in the greater than 0 but less than 25% category. The second map shows the same categorization but for current conditions. If the example 100,000 acre watershed now contains 5,000 acres (5%) of Capable MIS habitat, it would be shown in the same category of greater than 0 but less than 25%.

The third map titled Change in Capable MIS habitat is based on the difference between the actual percent of Capable MIS habitat modeled for historic and current by watershed. Here the watersheds are placed in one of six categories based on the relative change in habitat modeled. For example, the 100,000 acre watershed that historically contained 20,000 acres of Capable MIS habitat (20%) but currently contains 5,000 acres of Capable MIS habitat (5%) would be placed in the greater than 60% decrease in habitat category because the decrease of 15,000 acres currently out of 20,000 acres historically is a 75% decrease.

Greater sage-grouse habitat cover types for low sagebrush are outside of desired conditions in most watersheds on the Sawtooth National Forest. Historic grazing is one of many factors that have contributed to current habitat conditions. Although current livestock use levels are lower than historical levels of livestock grazing, localized areas of habitat damage still occur. Of the 60 watersheds providing capable MIS habitat for Greater sage-grouse, all met the ≥ 20% decrease in Capable MIS habitat criteria for lands in less than satisfactory condition (Figure 3).

As previously described, the primary risk factor to Greater sage-grouse habitat is the loss of sagebrush communities to invasive species. (2006 Conservation Plan, p4-1). Figure 2

Figure 3. Change in Capable MIS habitat From Historic to Current for Greater sage-grouse on the Sawtooth NF



above shows watersheds where more than 50 percent of capable MIS (Greater sage-grouse) habitat is overlapped by weed susceptible soils. While livestock grazing has not been identified as a primary vector for the spread and establishment of noxious weeds across the Forest, it can pose a threat in localized areas where livestock pass through infested areas.

Another primary risk factor for Greater sage-grouse is continued loss of sagebrush dominated shrub habitats through incompatible human land uses (e.g., energy development, urban and agricultural development, livestock grazing, etc.) and degradation of shrub habitat quality through exotic weed invasions and other factors. Mountain big sagebrush with chokecherry, serviceberry, and rose, are within their historical range on the Sawtooth National Forest (2003 FEIS pg. 3-487). All other sagebrush communities are outside historical conditions. The low sagebrush is outside of the Forest Plan desired condition range in the low and moderate canopy cover classes (2003 FEIS, pages 3-486 thru 3-488). In the case of low sagebrush, mapping accuracy may have been a problem, as field reconnaissance did not reveal as large an amount of acres outside of the low canopy cover class as the modeled Landsat data displayed. If the low and medium classes for low sagebrush were combined to compensate for mapping errors, low sagebrush would come much closer to meeting historical conditions (FEIS 2003, page 3-488). The assumption used for the low sagebrush type was that the vast majority of acres would be in the lowest density class with only a very few acres advancing to a greater density class. This is due to the inherent biological and physical characteristics of low sagebrush types; any departure from this would indicate the sustainability of this type could be exceeded by changing fire cycles and influencing native herbaceous understory (Longland and Young 1995).

Patch dynamics of non-forest habitats across the Sawtooth National Forest generally appear to be in larger patches than expected for low canopy conditions, while other canopy cover classes (medium or high) are in smaller patches than expected (Wildlife Review 2007 Project Record). On the Sawtooth National Forest, many of these patch dynamics are the result of altered fire regimes. The 2003 FEIS (pages 3-418, 419, 426, 427, 494, 496, 510, 511, 516, 517, 518) describes how livestock grazing practices may affect the balance between shrub and herbaceous vegetation on the landscape.

The current condition of sagebrush steppe vegetation types is believed to be the result of: (**1**) the suppression of wildfires for several decades that has resulted in a reduced fire return interval and larger wildfires, (**2**) insufficient post-recovery periods for understory forbs and grasses after summer wildfires prior to allowing livestock grazing to resume, and (**3**) livestock grazing practices that do not allow understory plant physiological needs to be met, thus inhibiting successful regeneration and promoting competitive advantages to shrub species. Today, grazing pressure has decreased considerably compared to the early 1900s (Paige and Ritter 1999). However, as cattle graze sagebrush steppe, they first select grasses and forbs and avoid browsing on sagebrush, which can eventually tip the balance in favor of shrubs (Paige and Ritter, 1999), ultimately discouraging livestock use. Forest Plan upland vegetation utilization standards allowing for a maximum utilization level of 40 percent use for early season or season long pastures, and 50 percent use for

vegetative slow growth, after seed ripe conditions, or late season pastures (RAST01, Sawtooth Forest Plan, pg III-45) were developed in part to address this concern. Even if livestock are removed, the presence of invasive weeds, an overly dense stand of sagebrush, or heavy browsing by rodents and rabbits can inhibit recovery of grasses and forbs (Tisdale and Hironaka 1981).

The following pages supplement the information found on pages 3-673 - 683 of Chapter 3 of the Southwest Idaho Ecogroup Land and Resource Management Plans Final Environmental Impact Statement.

ENVIRONMENTAL CONSEQUENCES

Direct and Indirect Effects

Rangeland Suitability:

Capable MIS Habitat

Pages 3-676 through 3-680 of the 2003 FEIS describes the livestock grazing suitability analysis by alternative conducted for capable rangelands as part of the Forest Plan revision process. Rangeland Resources Technical Report #3 (pp.8-13) describes the considerations for determination of rangeland suitability. These considerations include: vacant allotments where economic viability is questionable; localized areas where recreation and livestock use and interactions are generating conflicts on a frequent and/or consistent basis; areas where livestock and wildlife use of common areas leads to animal health risks; areas where noxious weed spread is caused by livestock management activities and cannot be reasonably mitigated; areas where agreements have been implemented to close allotments containing anadromous fish habitat; and areas that contain administrative sites, developed recreation sites, and Research Natural Areas.

Susceptibility to invasive species was identified as an indirect threat to capable MIS habitat associated with livestock grazing. However, as noted in the 2003 FEIS, with the exception of a few situations, livestock use has not been identified as a significant contributor to the spread of exotics and noxious weeds (2003 FEIS pg 3-623). The risks to terrestrial wildlife species including MIS habitat from non-native plants is addressed on page 3-294 of the 2003 FEIS. Chapter 3, Non-native Plants (pages 3-613 – 3-635) of the 2003 FEIS provides an analysis by alternative of acres susceptible to noxious weed invasion and the ability to detect and treat noxious weed populations. Susceptibility to invasive species was also a consideration in determining range suitability for livestock grazing. Consideration of noxious weed spread and establishment was included in development and analysis of alternatives for rangeland suitability (2003 FEIS, pgs 3-678 through 3-680).

Sagebrush habitat fragmentation and loss is as a threat to capable MIS habitat. Current livestock grazing practices can alter the amount of vegetation present at different times of the year; the composition of herbaceous and shrub vegetation; the degree of shrub canopy closure; vegetative age class patterns; etc. As described in the 2003 FEIS, Chapter 3, Rangeland Resources, using a combination of livestock impact conservation measures (2006 Conservation Plan, section 4.3.4.3, pages 4-59 – 4-64) and Forest-wide standards and guides in management of livestock grazing would provide for protection of other resource values, including sagebrush community conditions (2003 FEIS pg. 3-675 – 3-676). The 2006 Conservation Plan also recognizes that livestock management practices that promote the sustainability of desired native perennial grasses and forbs should maintain or minimally impact Greater sage-grouse habitat (2006 Conservation Plan, pg. 4-54).

The use of livestock impact conservation measures and Forest-wide standard and guides in management of livestock grazing would provide for protection of sagebrush community conditions and, because livestock grazing has not been identified as a primary vector for the spread of exotics and noxious weeds, no deductions in suitable rangeland acres for livestock grazing were identified for Greater sage-grouse habitat.

Restoration of Lands in Less Than Satisfactory Condition

The key factor used in determination of lands in less than satisfactory condition for this supplement is Capable MIS habitat with 20% or greater decline in habitat condition from historic. The effects analysis in Chapter 3, Vegetation Diversity, of the 2003 FEIS uses Historic Range of Variability as the reference condition for display of current condition and the determination of effects for forested and non-forested vegetation (2003 FEIS pg. 3-430). The ability of the Forest Plan alternatives to restore non-forest vegetation including sagebrush, grass –forb and riparian communities is displayed on pages 3-549 through 3-578. The ability to restore forested vegetation by Forest Plan alternative is described on pages 3-519 through 3-548 of the 2003 FEIS.

In addition to the information in the 2003 FEIS, the SWEIG developed a set of conservation strategies to address issues associated with sage-grouse and sage-grouse habitat. These strategies were based conservation strategies identified in other assessments that overlap the EcoGroup and addressed similar issues. These assessments include:

- 2006 Conservation Plan for Greater Sage-grouse in Idaho
- 2005 Idaho State Comprehensive Wildlife Conservation Strategy (CWCS)
- 2005 Utah State Comprehensive Wildlife Conservation Strategy (CWCS)
- 2005 Intermountain West Joint Venture Coordinated Implementation Plan for Bird Conservation in Idaho
- 2005 Northwest Power and Conservation Council subbasin assessments
    - Salmon Subbasin Assessment and Management Plan (June 2005).
    - Middle Snake Subbasins Assessment (June 2005).
    - Upper Snake Province Assessment (June 2005).
- 2005/2006 updates to the NatureServe Species Conservation database concerning species status, population trends, habitat use and threats
- 2004 Conservation Assessment for Greater Sage-grouse and sagebrush habitats
- 2004 Partners in Flight Continental Priorities and Objectives Defined at the State of Idaho and Bird Conservation Region Level
- 2004 Shrubsteppe Landscapes in Jeopardy: Distributions, Abundance, and the Uncertain Future of Birds and Small Mammals in the Intermountain West
- 2003-2004 updated Breeding Bird Survey (BBS) data concerning population trend
- 2003 Interior Columbia Basin Strategy and Interagency Memorandum of Understanding

- 2002 Utah Partners in Flight (PIF): Avian Conservation Strategy (Ver. 2.0)
- 2000 Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad Scale Trends and Management Implications, Wisdom et al.
- 2000 Idaho Partners in Flight (PIF): Idaho Bird Conservation Plan (Ver. 1.0)

The following is a list of the SWEIG conservation strategies most relevant to the requirements of 36 CFR 219.20. A complete list of the SWEIG conservation strategies is located in the species account document in the project record.

1. Maintain or restore the representation (quantity and quality) and redundancy (distribution) of sage-grouse habitats. As part of a short-term strategy, identify and conserve large areas of remaining native sagebrush steppe and riparian herblands where ecological integrity is still relatively high, and manage to promote their long-term sustainability. Maintaining and restoring spatial habitat links for sage-grouse is of particular importance in the short-term. (Strategy Fam11-1-1)
2. Focus long-term strategies on restoration of the native grass and forb components of sagebrush habitat, as well as other upland woodland, shrubland, riparian and grassland community groups toward extents more typical of historical levels. Restoration measures will likely require concurrent actions to be effective, such as seedings and plantings in combination with effective methods of site preparation, effective management of grazing by domestic livestock, and control of human activities such as off road motor vehicle usage and other ground-disturbing factors. (Strategy Fam11-1-2)
3. Use herbicide and mechanical treatments to remove, or otherwise control, invasive non-native vegetation. Plant vegetation needed to restore sagebrush-steppe habitat, including use of non-invasive, non-native species, when it is determined that available native species are unable to compete with invasive annuals. Focus restoration activities in areas that would provide key spatial links for sage-grouse populations. (Strategy Fam11-1-3)
4. Protect woodlands habitats against wildfire and avoid, or effectively mitigate, the use of prescribed fire in areas vulnerable to invasion by exotic and other non-native vegetation. Emphasize areas where exotics and other non-native vegetation (e.g. cheatgrass) are likely to gain a competitive edge over native vegetation. (Stratgey Fam11-1-4)
5. Prioritize the restoration of cryptobiotic crust within the shrub-steppe where potential for redevelopment is high; that is, in areas near propagule sources that have suitable soil, vegetation, and climatic characteristics and existing uses are compatible with restoration goals. (Strategy Fam11-2-1)
6. Within the range of sage-grouse, maintain a mosaic of inter-connected patches of sagebrush with height and cover class characteristics believed to have occurred historically. Specifically, within sage-grouse winter range, strive to maintain or restore patches of sagebrush source habitat with canopy covers of 10 to 25 percent and heights of 25 to 30 cm (10 in to 12 in). (Strategy GRSG-1-1)
7. Restore vegetation around springs, seeps, streams, meadows, and other riparian areas. In the short-term, prioritize restoration treatments within areas known to be occupied by sage-grouse flocks. (Strategy GRSG-2-1)

8. Minimize or eliminate negative impacts to sage-grouse caused by physical disturbance, especially near breeding and brood habitat. In the short-term, prioritize actions to reduce human disturbance within areas known to be occupied by sage-grouse flocks (Strategy Grsg-3-1)

Appendix 1 to this supplement provides a list of the most applicable Forest-wide goals, objectives, standards and guides addressing the strategies listed above. As displayed in the Appendix, the Forest Plan does include management direction that addresses all of the strategies listed above. Additionally, the subsection below, titled *Forest Plan Direction Addressing Restoration of Lands in Less Than Satisfactory Condition*, describes Management Area and Forest-wide management direction directed at the restoration of lands in less than satisfactory condition. A review of this direction, including the direction shown in Appendix 1 of this supplement finds that the current Forest Plan provides sufficient direction to provide for the restoration of capable MIS habitat in less than satisfactory condition. Further, the 2006 Conservation Plan recognizes that livestock management practices that promote the sustainability of desired native perennial grasses and forbs should maintain or minimally impact Greater sage-grouse habitat (2006 Conservation Plan, pg. 4-54).

Identification of High Priority Watersheds for Restoration

To address wildlife habitat restoration needs, the Forest Plans included a management objective, WIOB03, which required the Forests to use information from sources such as species habitat models to prioritize wildlife habitat to be restored. As previously described, the analysis documented in this supplement used source habitat models to identify change in vegetative type, size class and canopy closure from historic to current to aid in identification of lands in less than satisfactory condition. The models used to assess change in habitat could identify where changes in vegetation occurred, but not the causal factors for the changes.

While all watersheds with Capable MIS habitat were identified as being in less than satisfactory condition, it is not possible given the scale of analysis to identify the exact degree to which livestock grazing may have contributed to the less than satisfactory condition rating. This must be assessed on a case-by case basis at the project or site level. However, it can be assumed that where there is a higher degree of overlap between suitable grazing lands and MIS source habitat, there is a higher potential for livestock use to have contributed to less then satisfactory conditions. To address the requirements of 36 CFR §219.20, management objective WIOB03, and the 2006 Conservation Plan, watersheds meeting the following criteria were determined to be the highest priority for restoration:

- Those watersheds that were identified as high priority watersheds in the 2006 Conservation Plan for the Greater sage-grouse in Idaho that are coincident with:
- watersheds that provide ≥ 50% total acres as Capable MIS habitat; **and**
- have a high susceptibility for noxious weeds **and/or**
- have ≥ 50% suitable rangeland coincident with Capable MIS habitat.

Figure 4 displays those watersheds that have ≥ 50% suitable rangeland coincident with Capable MIS habitat, and Figure 5 displays those watersheds identified as the highest priority for restoration relative to the prioritization criteria.

Figure 4. Watersheds with ≥ 50% Suitable Rangeland Coincident with Capable MIS habitat

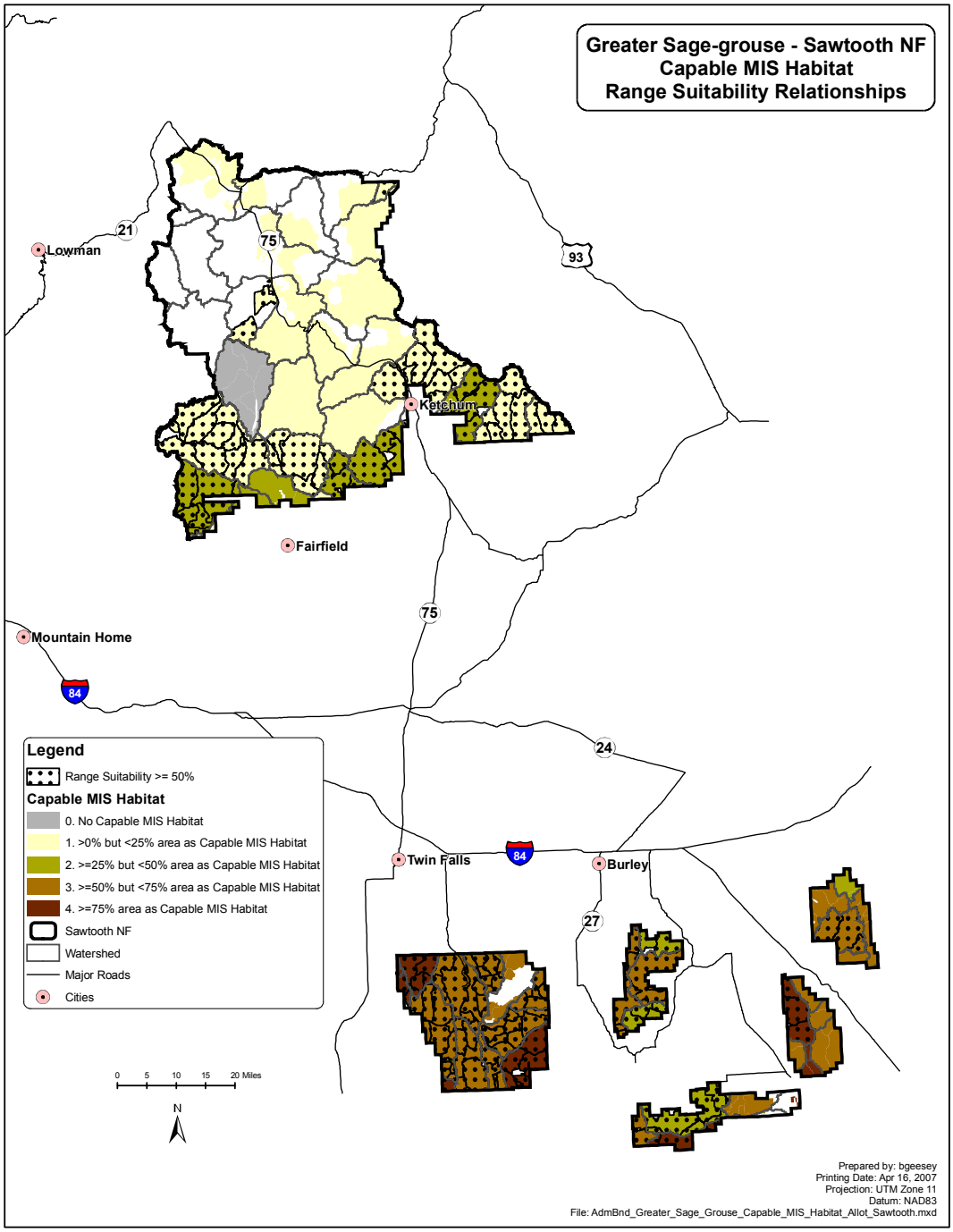
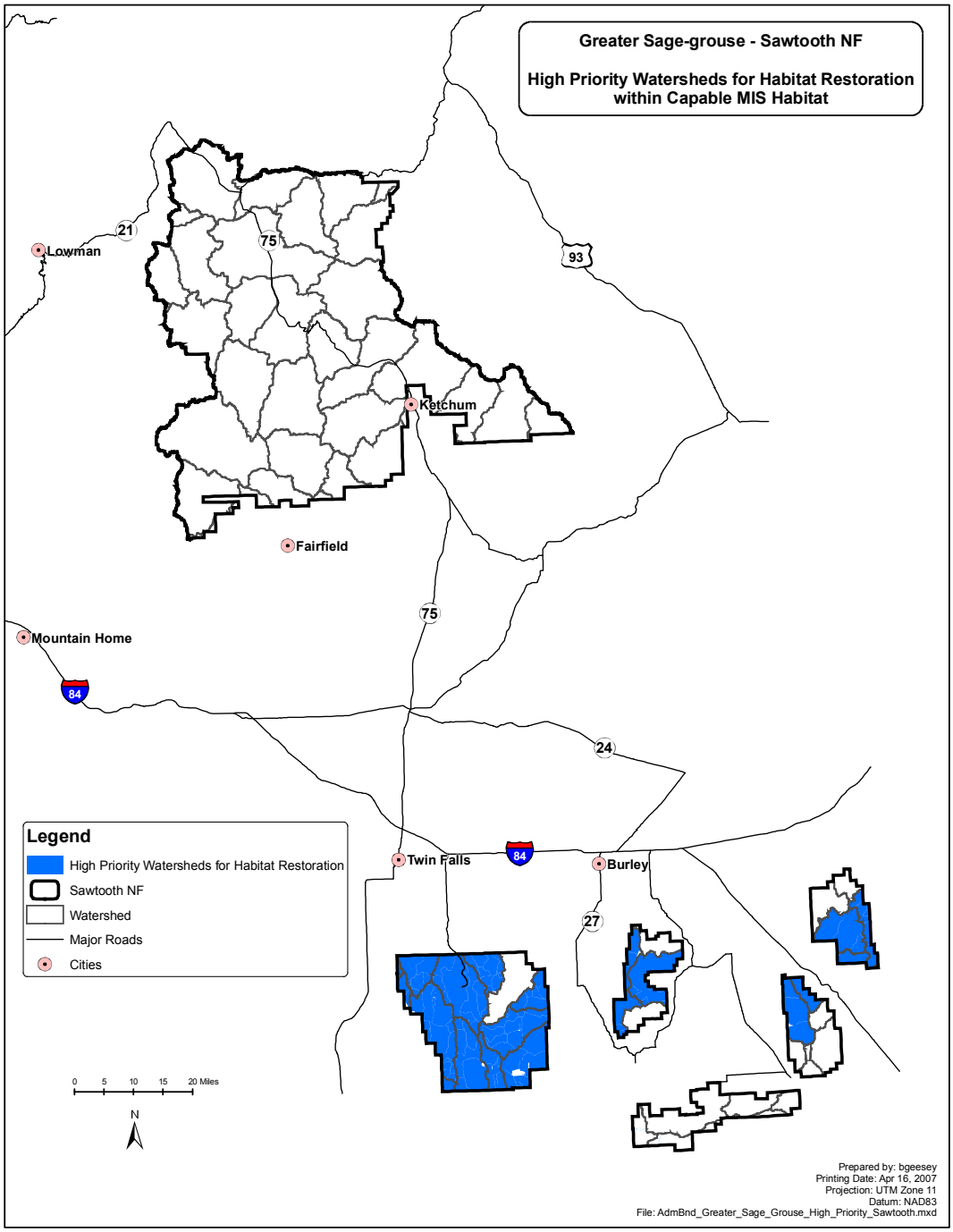


Figure 5. 36 CRF 219.20 Priority Watersheds for Habitat Restoration – Greater sage-grouse on the Sawtooth NF



Forest Plan Direction Addressing Restoration of Lands in Less Than Satisfactory Condition

Through the Forest Plan Revision effort, the SWIEG identified wildlife habitats, including habitat that supports MIS Greater sage-grouse that have declined from historic conditions. To address concerns over declining habitat conditions, management direction in the form of Forest-wide and Management Area goals, objectives, standards and guides were developed. Following is a summary of some of the more relevant Forest Plan direction applicable to restoration of capable MIS habitat in less than satisfactory condition.

Greater sage-grouse - Sawtooth Forest Plan

On the Sawtooth NF, capable MIS habitat for Greater sage-grouse in less than satisfactory condition occurs in Management Areas 2-5, and 7-20. Management emphasis for each watershed within a Management Area is directed by the assigned management prescriptions. A complete description of management direction including management prescriptions by watershed for each Management Area can be found in Chapter III of the 2003 Revised Forest Plan for the Sawtooth National Forest. Following is a list of some of the more specific management direction for each Management Area relative to restoration of sagebrush communities and Greater sage-grouse habitats. Management Areas 11, 12, 13, 14, 15, 17, 19 and 20 are identified as high priority management areas for restoration of capable MIS habitat.

Management Areas on the Minidoka District:

MA-11 – Rock Creek (Sawtooth LRMP, Volume 1 pages III-228-237)

- **Vegetation Objective 1116 -** Restore and maintain sagebrush and bitterbrush composition, age class, and canopy cover components (as described in Appendix A) in the Low Sage, Basin Big Sage, and Mountain Big Sagebrush vegetation groups, with emphasis on improving wildlife winter ranges and sage grouse habitat near the Forest Service boundary.
- **Wildlife Resources Guideline 1124 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 1141 -** Whenever possible, modify developed springs and other water sources to restore natural free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 1142 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-12 – Cottonwood Creek (Sawtooth LRMP, Volume 1 pages III-238-245)

- **Vegetation Objective 1215 -** Restore shrub composition in the Low Sage, Basin Big Sage, and Mountain Big Sagebrush cover types; with emphasis on improving wildlife winter ranges in areas degraded by increasing juniper cover.

- **Wildlife Resources Guideline 1225 -** Management actions in sage grouse habitat should be designed to meet desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore cover conditions.
- **Rangeland Resources Guideline 1233 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-13 – Trapper Creek/Goose Creek (Sawtooth LRMP, Volume 1 pages III-246-255)

- **Vegetation Objective 1321 -** Restore canopy covers to desired conditions, as described in Appendix A, within the Basin Big Sagebrush, Low Sage, and Mountain Big Sagebrush vegetation groups where these groups have been altered.
- **Non-native Plants Objective 1327 -** Reduce cheatgrass by restoring native perennial grass/forb composition of plant communities in the Low Sage, Basin Big Sage, Pinyon-Juniper, and Mountain Big Sagebrush vegetation groups below 6,000 feet elevation.
- **Wildlife Resources Guideline 1329 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 1342 -** Whenever possible, modify developed springs and other water sources to restore natural free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 1344 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-14 – Shoshone Creek (Sawtooth LRMP, Volume 1 pages III-256-262)

- **Vegetation Objective 1048 -** Restore and maintain sagebrush and bitterbrush composition, age class, and canopy cover components (as described in Appendix A) in the Low Sage, Basin Big Sage, and Mountain Big Sagebrush vegetation groups, with emphasis on improving wildlife winter ranges and sage grouse habitat near the Forest Service boundary.
- **Wildlife Resources Guideline 1413 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 1418 -** Whenever possible, modify developed springs and other water sources to restore natural free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 1419 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-15 – Albion Mountains (Sawtooth LRMP, Volume 1 pages III-264-271)

- **Vegetation Objective 1513 -** Restore mountain big sagebrush canopy cover to desired conditions, as described in Appendix A, in Robinson Creek headwaters, Big Rocky Creek, Summit Creek, North and South Carson Creeks, Myers Canyon, and Fairchild Creek.
- **Wildlife Resources Guideline 1524 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A.

Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.

MA-16 – Howell Creek (Sawtooth LRMP, Volume 1 pages III-272-281)

- **Vegetation Objective 1618 -** Restore Mountain Big Sagebrush canopy cover to desired conditions, as described in Appendix A, in Broad Hollow, Brim Canyon, and Cooney Hollow.
- **Wildlife Resources Guideline 1631 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 1644 -** Whenever possible, modify developed springs and other water sources to restore free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 1645 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-17 – Independence Lakes (Sawtooth LRMP, Volume 1 pages III-282-289)

- **Vegetation Objective 1712 -** Restore and maintain shrubland communities, particularly the Basin Big Sage vegetation group, as described in Appendix A.
- **Vegetation Objective 1713 -** Restore Mountain Big Sagebrush canopy cover and juniper densities to desired conditions, as described in Appendix A, in the Dry Creek area to address fire hazard.
- **Wildlife Resources Guideline 1725 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore cover conditions.
- **Rangeland Resources Objective 1736 -** Whenever possible, modify developed springs and other water sources to restore free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 1737 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-18 – Raft River (Sawtooth LRMP, Volume 1 pages III-290-299)

- **Vegetation Objective 1818 -** Restore and maintain species composition, productivity, vigor, and canopy cover (as described in Appendix A) of the Mountain Big Sagebrush vegetation group in the George Peak, The Meadows, and the Rosevere Point areas.
- **Wildlife Resources Objective 1826 -** Restore or maintain sage grouse habitat through shrubland vegetation management.
- **Wildlife Resources Guideline 1828 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.

MA-19 – Black Pine (Sawtooth LRMP, Volume 1 pages III-300-309)

- **Vegetation Objective 1917 -** Restore canopy cover, as described in Appendix A, within the Mountain Big Sagebrush and Pinyon-Juniper cover types in the southern and western portions of the management area.
- **Vegetation Objective 1919 -** Evaluate the need for sagebrush re-establishment in the northern portion of the management area that burned in 1999 and 2000.
- **Wildlife Resources Guideline 1929 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 1933 -** Whenever possible, modify developed springs and other water sources to restore natural free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 1934 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

MA-20 – Sublett (Sawtooth LRMP, Volume 1 pages III-310-317)

- **Vegetation Objective 2013 -** Restore canopy cover to desired levels (described in Appendix A) within the Basin Big Sagebrush and Mountain Big Sagebrush vegetation communities. Restore native perennial grass/forbs composition of plant communities in these same areas.
- **Vegetation Objective 2014 -** Restore riparian vegetation along Sublett Creek through management of dispersed recreation and livestock grazing.
- **Wildlife Resources Guideline 2017 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 2025 -** Whenever possible, modify developed springs and other water sources to restore free-flowing water and wet meadows in sage grouse habitat.
- **Rangeland Resources Guideline 2026 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

Management Areas on the Sawtooth National Recreation Area:

MA-02 – Upper Salmon River Valley (Sawtooth LRMP, Volume 1 pages III-100-123)

- **Vegetation Objective 0261 -** Restore the Mountain Big Sagebrush, Low Sage, and Basin Big Sage vegetation groups to desired range of composition and structure, as described in Appendix A, to improve sagebrush-obligate species habitat by improving the diversity and distribution of age classes.

MA-03 – EF Salmon River/White Clouds (Sawtooth LRMP, Volume 1 pages III-124-142)

- **Vegetation Objective** 0348 - Restore the Montane Shrub and Mountain Big Sage vegetation groups in the lower elevations of the East Fork Salmon River, Sullivan Creek, French Creek, Big Boulder Creek, Little Boulder Creek, and Big Lake Creek drainages, where these groups have been altered by the exclusion of fire and livestock use.
- **Vegetation Objective** 0349 - Restore willow composition, structure, and density, and hydric forbs and grasses in riparian areas in East Fork Salmon River, Big Boulder Creek,

Little Boulder Creek, West Pass Creek, Big Lake Creek, Sullivan Creek, and French Creek drainages by reducing impacts from livestock grazing.

MA-04 – Big Wood River (Sawtooth LRMP, Volume 1 pages III-144-163)

- **Rangeland Resources Objective** 04111 - Prevent the spread of noxious weed seeds due to domestic sheep by adjusting or changing management practices, such as trailing route locations and driveway/grazing area seasons of use.

Management Areas on the Ketchum Ranger District:

MA-04 – Big Wood River described above falls within the boundaries of both the SNRA and the Ketchum Ranger District

MA-05 – Little Wood River (Sawtooth LRMP, Volume 1 pages III-144-163)

- **Vegetation Objective 0532 -** Restore structure and species composition in the Alpine Meadows, Dry Meadows, and Mountain Big Sagebrush vegetation groups in the Little Wood River and Copper Creek drainages where these groups have been altered due to fire exclusion and permitted and recreational livestock grazing.
- **Wildife Resources Guideline 0541 -** Management actions in sage-grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage-grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.

Management Areas on the Fairfield District:

MA-07 – Little Smokey Creek (Sawtooth LRMP, Volume 1 pages III-164-173)

- **Vegetation Objective 0720 -** Restore the herbaceous component of the Mountain Big Sagebrush communities adjacent to riparian areas in narrow drainages.
- **Vegetation Objective 0721 -** Restore hydric and woody shrub species composition and density in bottom riparian areas within the Grindstone Creek, Carrie Creek, Worswick Creek, Red Rock Creek, Rosetta Creek, Wood Gulch, Camp Creek, Sawmill Creek, and Cannonball Creek drainages, where vegetation has been altered by livestock grazing.
- **Wildlife Resources Guideline 0727 -** Management actions in sage-grouse habitat should be designed to meet the desired conditions for sagebrush described in Appendix A. Where greater than 40 percent of the sage-grouse habitat in the management area has less than 10 percent canopy cover, actions should be designed to maintain or restore canopy cover conditions.

MA-08 – Middle SF Boise River (Sawtooth LRMP, Volume 1 pages III-196-207)

- **Vegetation Objective 0825 -** Maintain or restore the bitterbrush component and restore herbaceous cover in the Mountain Big Sagebrush vegetation group adjacent to the South Fork Boise River and its tributaries.
- **Rangeland Resources Objective 0853 -** Evaluate and incorporate methods to help prevent weed establishment and spread from livestock grazing activities in the Abbot-Shake and Willow Creek subwatersheds. Methods to consider include changes in the timing, intensity, duration, or frequency of livestock use; the location of salting; and restoration of watering sites.

MA-09 – Lime Creek (Sawtooth LRMP, Volume 1 pages III-208-217)

- **Vegetation Objective 0917 -** Restore the herbaceous plant ground cover component of the Mountain Big Sagebrush vegetation group in the South and North Fork Lime Creek drainages.
- **Wildlife Resources Guideline 0924 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Objective 0935 -** Evaluate and incorporate methods to help prevent weed establishment and spread from livestock grazing activities in the Lower Lime Creek and South Fork Lime-Hearn subwatersheds. Methods to consider include changes in the timing, intensity, duration, or frequency of livestock use; the location of salting; and restoration of watering sites.

MA-10 – Soldier Creek/Willow Creek (Sawtooth LRMP, Volume 1 pages III-218-227)

- **Vegetation Objective 1016 -** Restore and maintain canopy closures (as described in Appendix A), and restore the herbaceous plant ground cover component of low-elevation benches and slopes within the Mountain Big Sagebrush vegetation group to reduce the effects of fire exclusion and livestock use in the Soldier Creek and Willow Creek areas.
- **Wildlife Resources Guideline 1024 -** Management actions in sage grouse habitat should be designed to meet the desired conditions for sagebrush, as described in Appendix A. Where greater than 40 percent of the sage grouse habitat in the management area has less than 10 percent canopy cover, management actions should be designed to maintain or restore canopy cover conditions.
- **Rangeland Resources Guideline 1042 -** When constructing or reconstructing fences, design or relocate them to avoid potential sage grouse mortality near leks.

Forest-wide Direction:

In addition to the more specific Management Area direction, Forest-wide direction also provides emphasis on the restoration of sagebrush communities. Some of the more pertinent Forest-wide direction includes:

Botanical Resources

- **Objective: BTOB10 -** Identify areas of high potential for cryptogamic crust restoration and/or maintenance.

Rangeland Resources

- **Desired Conditions:** A sustainable level of forage, consistent with other resource management direction, is available for use through the Forest Service grazing permit system. Rangeland forage quality is maintained or improved in areas where vegetation management projects and range management actions occur. Riparian areas continue to be a focal point for providing vegetative diversity, landscape capability, soil productivity, wildlife habitat, proper stream channel function and water quality important to sustaining beneficial uses. Riparian areas are functioning properly and/or have improving trends in vegetative composition, age class structure and vigor. Upland range vegetation is contributing to proper hydrologic function. The composition and densities of shrubs, grasses and forbs are variable and dynamic across the landscape.

- **Objective: RAOB03 -** During fine-scale analyses where rangeland facilities are identified as a potential concern or problem contributing to degrading resource conditions within the analysis area, identify rangeland facilities that are degrading resource conditions and prioritize opportunities to mitigate their effects or to initiate restoration of resource conditions.
- **Standards:**
    - **RAST01 -** Maximum forage utilization of representative areas within each pasture shall not exceed the values shown at the end of growing season. Variation in utilization standards in order to achieve specific vegetative management objectives shall occur with a site-specific or project-level decision according to direction in FSM 1922.5.
        a) Riparian Areas: Maximum 45 percent use or retain a minimum 4-inch stubble height of hydric greenline species, whichever occurs first.
        b) Upland Vegetative Cover Types: Early season or season long pastures – 40 percent use. Vegetative slow growth, after seed ripe conditions, or late season pastures – 50 percent use.
    - **RAST06** - Only open or loose sheep herding will be practiced, except where site-specific vegetation management (e.g., noxious weed control or reforestation) is needed and has been prescribed.
    - **RAST07 -** Only annual once-over sheep grazing will be allowed, with the exception of designated sheep driveways, travel routes, or where specifically authorized.
    - **RAST09 -** New, reconstructed, or replaced livestock water developments must provide access and escape to and from water for all types of wildlife.
- **Guideline: RAGU09** - Season-long grazing practices should be discontinued where they preclude restoration of upland or riparian vegetation communities

Wildlife Resources:

- **Desired Conditions:** The amount, distribution, and characteristics of vegetation are present at levels necessary to maintain viable populations of native and desired non-native wildlife species. For Region 4 Sensitive Species and Forest Management Indicator Species, management actions maintain habitat conditions that are properly functioning, or restore those conditions that are degraded. Habitat conditions generally contribute to the survival, recovery, and de-listing of species under the Endangered Species Act, and prevent further listing of species under the Act or adding species to the Region 4 Sensitive Species List. Human activities do not prevent populations from maintaining desired distribution and abundance during critical life stages. Habitat conditions support populations of species of ecological, socio-economic, tribal, cultural, and recreational significance.
- **Objectives:**
    - **WIOB03** - Prioritize wildlife habitats to be restored at a mid- or Forest-scale, using information from sources such as species habitat models, and fine-scale analyses. Initiate restoration activities on priority wildlife habitats to move current conditions toward desired conditions.
    - **WIOB09** - During fine-scale analyses, identify and prioritize opportunities for restoring degraded MIS and Sensitive species habitat.
- **Standard: WIST02 -** Design and implement projects within occupied habitats of Sensitive species to help prevent them from becoming listed. Use Forest Service-approved portions of Conservation Strategies and Agreements, as appropriate, in the

management of Sensitive species habitat to keep management actions from contributing to a trend toward listing for these species.

Vegetation:

- **Desired Condition: Grassland and Shrubland Vegetation** - Grasslands and shrublands exhibit variable patterns of multiple-aged shrubs, grasses, and forbs. Shrublands are found in mosaics of canopy closures across the landscape, reflecting a combination of successional development, disturbance regimes and management activities. Some mid- to high-elevation grasslands are primarily meadow complexes that are dominated by sedges, rushes, grasses, and forbs.
- **Goals:**
  - **VEGO01** - Maintain or restore desired plant community components, including species composition, size classes, canopy closures, structure, snags, and coarse woody debris as described in Appendix A.
  - **VEGO02**- Maintain or restore vegetative conditions as described in Appendix A to provide for ecological processes, including disturbance regimes, soil-hydrological processes, nutrient cycles, and biotic interactions.
  - **VEGO03** - Maintain or restore vegetation conditions as described in Appendix A to reduce frequency, extent, severity, and intensity of uncharacteristic or undesirable disturbances such as fire, insects, and pathogens.
  - **VEGO04** - Maintain or restore distribution and abundance of habitats that contribute to viable populations of existing native and desirable non-native plant, fish, and wildlife species.
  - **VEGO05** - Maintain or restore a representation of native plant communities throughout the Forest.
  - **VEGO06** - Facilitate regeneration of desirable plant species, particularly those that are currently identified as declining.
  - **VEGO07** - Maintain or restore elements of vegetative spatial pattern, such as amount, proportion, size, inter-patch distance, variation in patch size, and landscape connectivity important to the achievement of vegetation or other resource goals and objectives in the Forest Plan.
- **Objectives: VEOB06 -** Determine high-priority areas for vegetation management actions that restore or maintain vegetation desired attributes.
- **Guidelines:**
  - **VEGU05** - Where wildfire has burned within an allotment, burned areas should be evaluated to determine if rest from livestock grazing is necessary for recovery of desired vegetation conditions and related biophysical resources.
  - **VEGU06 -** When sagebrush cover types are determined to need rest from livestock grazing following a wildfire, areas should be rested for a minimum of two growing seasons. Evaluate whether additional rest is needed after two growing seasons. Base this determination on the following factors:
    a) The ecological status of the sagebrush community prior to the wildfire,
    b) How long the sagebrush community had a density or canopy closure greater than 15 percent prior to the wildfire,
    c) The severity and intensity of the fire,
    d) The amount, diversity, and recovery of forbs, grasses and palatable shrubs that are present after 2 years of rest in relation to desired conditions.

    In areas other than sagebrush cover types, an appropriate rest period should be determined. Base this determination on the following factors: soil conditions,

the amount, diversity and recovery of forbs, grasses, and palatable shrubs in relation to the desired condition that are present after the 2 years of rest.

Appendix A Desired Conditions:

Table A-13. Desired Condition Ranges for Mountain Big Sagebrush and/or Basin Big Sagebrush

Mt. Big Sagebrush Canopy Cover Classes	Desired Amounts Of Canopy Cover Classes By Percent Of Area
0-10% canopy cover	30-40% of area
11-20% canopy cover	30-40% of area
21-30%, >31% canopy cover	20-30% of total area, with <= 5% in the >31% canopy cover class

** Sawtooth LRMP Volume 2, page A-15

Table A-14. Desired Condition Ranges for Wyoming Big Sagebrush

Wyoming Big Sagebrush Canopy Cover Classes	Desired Amounts Of Canopy Cover Classes By Percent Of Area
0-10% canopy cover	25-30% of area
11-20% canopy cover	20-35% of area
>21% canopy cover	30-40% of area

** Sawtooth LRMP Volume 2, page A-16

Table A-15. Desired Condition Ranges for Low Sagebrush

Low Sagebrush Canopy Cover Classes	Desired Amounts Of Canopy Cover Classes By Percent Of Area
0-10% canopy cover	>90% of area
11-20% canopy cover	<10% of area
>21% canopy cover	0% of area

** Sawtooth LRMP Volume 2, page A-16

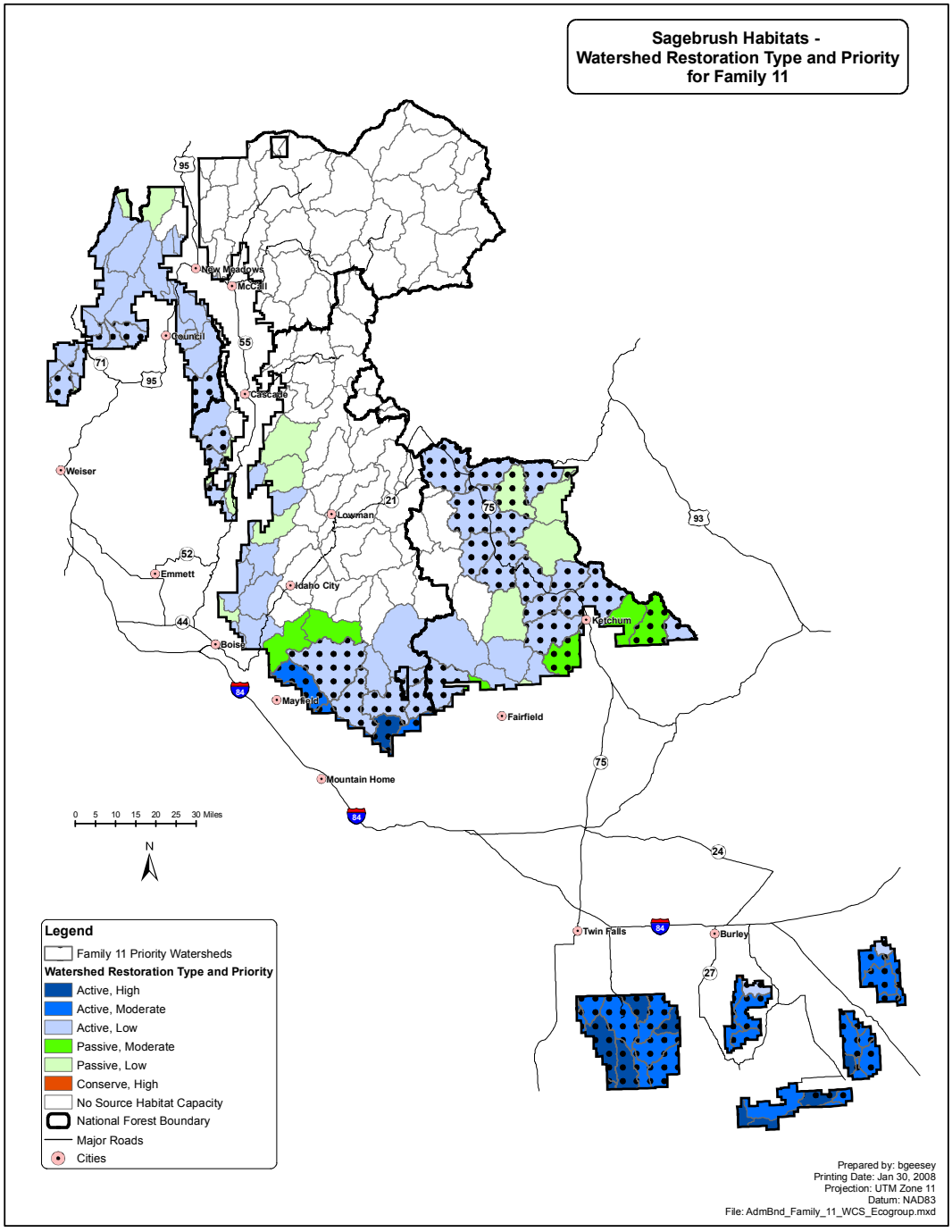
2007 Updated Analysis Implementing WIOB03

As discussed in the Background section of this supplement, the SWIEG recently completed an updated multi-scale analysis of habitat for wildlife species of concern to address Forest Plan Wildlife Management Objective WIOB03 - *Prioritize wildlife habitats to be restored at a mid- or Forest-scale, using information from sources such as species habitat models, and fine-scale analyses. Initiate restoration activities on priority wildlife habitats to move current conditions toward desired conditions.* The SWIEG is currently in the process of taking the results of that analysis to develop a coordinated multi-scale habitat conservation and restoration strategy for habitat families of species of concern. The resultant restoration and conservation strategy will be used in conjunction with current direction in the SWIEG Forest Plans to assist the Forests in determining types and priorities for project level restoration activities. Figure 6 below is an example of the initial strategy for Family 11, which provides habitat for the Greater sage-grouse.

Areas delineated as Family 11 priority watersheds are those watersheds that overlay the West Central, Mountain Home and South Magic Valley Sage-Grouse Planning Area

boundaries that have been defined in the Conservation Plan for the Greater sage-grouse in Idaho (2006). Forest Plan standard WIST02 requires the Forests to implement Forest Service-approved portions of Conservation Strategies and Agreements in the management of Sensitive species habitat to keep management actions from contributing to a trend toward listing for these species. Consistent with this standard and in response to State and National conservation plans for sage-grouse, these watersheds were identified as the watersheds where activities would likely be concentrated over the next 10-15 years. However, not all areas where sage grouse occur on the Forests lie within a Greater sage-grouse planning area. To compensate for this, watersheds within the range of the Greater sage-grouse where source habitat has declined by greater than 60%, and that are not encompassed by a Greater sage-grouse planning area, were also identified as a high priority for restoration in the short-term planning period.

Figure 6: Draft SWIEG watershed restoration type and priorities for Family 11



CHAPTER 4. CONSULTATION AND COORDINATION

PREPARERS AND CONTRIBUTORS

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DISTRIBUTION OF THE SUPPLEMENT TO THE FINAL ENVIRONMENTAL IMPACT STATEMENT

This final supplemental environmental impact statement has been distributed to individuals who provided comments on the draft supplemental environmental impact statement.

REFERENCES

Amaranthus, M.P., D.S. Parrish and D.A. Perry. 1989. Decaying Logs as Moisture Reservoirs After Drought and Wildfire. In: Proceedings of Watershed '89: a Conference on the Stewardship of Soil, Air and Water Resources, Juneau, Alaska, March 21-23, 1989, E.B. Anderson, ed., USDA Forest Service, Alaska Region, pp. 1910194.

Apa, Anthony Dean, 1998. Habitat Use and Movements of Sympatric Sage and Columbian Sharp-tailed Grouse in Southeastern Idaho, A Dissertation presented in partial fulfillment of the requirements for the Degree of Doctor of Philosophy with a Major in Forestry, Wildlife, and Range Sciences in the College of Graduate Studies, University of Idaho.

Blair, Steve and Greg Servheen. 1995. A Species Conservation Assessment and Strategy for White-Headed Woodpecker (*Picoides albolarvatus*) draft February 1995. Idaho Dept. of Fish and Game, Boise, 21pp.

Braun, Clait E., 1998. Sage Grouse Declines in Western North America: What are the Problems? Proceedings: Western Assoc. State Fish and Wildl. Agencies 78:000-000.

Bull, Evelyn L., S. R. Peterson, and J. W. Thomas. 1986. Resource Partitioning Among Woodpeckers in Northeastern Oregon, USDA Forest Service, Pacific Northwest Research Station, Research Note PNW-444. 19 pp.

Bull, Evelyn L. 1987. Ecology of the pileated woodpecker in northeastern Oregon. Journal of Wildlife Mgmt. 51(2):472-481.

Bull, Evelyn L., Richard S. Holthausen, and Mark G. Henjum. 1992. Roost trees used by pileated woodpeckers in northeastern Oregon. Journal of Wildlife Mgmt. 56(4):786-793.

Bull, Evelyn L. and Richard S. Holthausen. 1993. Habitat use and management of pileated woodpeckers in northeastern Oregon. Journal of Wildlife Mgmt. 57(2):335-345.

Bull, Evelyn L., Catherine G. Parks, and Torolf R. Torgersen. 1997. Field Guide for the Identification of Snags and Logs in the Interior Columbia River Basin, USDA Forest Service, Pacific Northwest Research Station, General Technical Report, PNW-GTR-390, 55 pp.

Bull, Evelyn L., Catherine G. Parks, and Torolf R. Torgersen, 1997. Trees and Logs Important to Wildlife in the Interior Columbia River Basin, USDA Forest Service, Pacific Northwest Research Station, General Technical Report, PNW-GTR-391, 55pp.

Connelly, John W., Michael A. Schroeder, Alan R. Sands, and Clait E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin, Vol 28, No.4, pp. 967-985.

Diem, M. 3/3/1999. Rangeland Resources Technical Report No. 1 for the Boise, Payette and Sawtooth National Forests Plan Revisions. Project record for the Southwest Idaho Ecogroup Forest Plan Revision.

Edward, Thomas Jr. and Collin g. Homer. 1996. Idaho and Western Wyoming USDA Forest Service Inventory and Assessment/Gap Vegetation Mapping Project.

Idaho/Western Wyoming Landcover Classification-Report & Metadata (without appendices), Remote Sensing/GIS Laboratories, Dept of Geography & Earth Resources, Utah State University, Logan, Utah.

Edwards and Homer, 1998, Idaho/Western Wyoming Landcover Classification Report Metadata. Remote Sensing/GIS Laboratories, Dept of Geography Earth Resources, Utah State University.

Frederick, G. P., and T. L. Moore. 1991. Distribution and habitat of white-headed woodpeckers (*Picoides albolarvatus*) in west-central Idaho. Cooperative Challenge Cost-Share Project, Payette National Forest and Conservation Data Center, Idaho Department of Fish and Game. 32 pp.

Garrett, K. L., and M. G. Raphael, and R. D. Dixon. 1996. White-headed Woodpecker (Picoides albolarvatus). In: The Birds of North America, No. 252 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.

Geier-Hayes, Kathleen, 1995. The Impact of Post-Fire Seeded Grasses on Native Vegetative Communities in Central Idaho. Proceedings: Fire Effects on Rare and Endangered Species and Habitats Conference, Nov. 13-16, 1995, Coeur d'Alene, Idaho.

Gorrell, Janet V., Matthew E. Andersen, Kevin D. Bunnell, Michael F. Canning, Alan G. Clark, Dana E. Dolsen, Frank P. Howe, 2005. Utah Comprehensive Wildlife Conservation Strategy (CWCS). Utah Division of Wildlife Resources.

Graham, Russell T., Alan E. Harvey, Martin F. Jurgensen, Theresa B. Jain, Jonalea R. Tonn, and Deborah S. Page-Dumroese, 1994. Managing Coarse Woody Debris in forests of the Rocky Mountains, USDA Forest Service, Intermountain Research Station, Research Paper INT-RP-477.

Gregg, M. A., J. A. Crawford, M. S. Drut and A. K. Delong. 1994. Vegetational cover and predation of sage grouse nests in Oregon, Journal of Wildlife Management 58: 162-166.

Groves, C.R., B.Butterfield, A. Lippincott, b.Csuti, and J.M. Scott. 1997. Atlas of Idaho's Wildlife: Integrating Gap Analysis and Natural Heritage Information. Idaho Dept. of Fish and Game, Nongame Wildlife Program. Boise, Idaho.

Hamilton, Ronald C. 1993. Characteristics of Old-Growth Forests in the Intermountain Region, USDA Forest Service, Intermountain Region, Ogden, Utah.

Hoyt, S. F. 1957. The ecology of the pileated woodpecker. Ecology 38:246-56.

Idaho Department of Fish and Game. 1997. Idaho Sage Grouse Management Plan.

Idaho Department of Fish and Game. 2005. Idaho Comprehensive Wildlife Conservation Strategy. Idaho Conservation Data Center, Idaho Department of Fish and Game, Boise, ID. http://fishandgame.idaho.gov/cms/tech/CDC/cwcs.cfm

Idaho Partners in Flight. 2000. Idaho Bird Conservation Plan, Version 1.0.

Interior Columbia Basin Ecosystem Management Project (ICBEMP). 1996b. Expert panel notes for carnivore terrestrial habitat assessment, fall 1996, for the interior Columbia basin. Unpublished notes. On file with: U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior, Bureau of Land Management; Interior Columbia Basin Ecosystem Management Project, 304 N. 8th Street, Boise, ID 83702.

Interior Columbia Basin Ecosystem Management Project (ICBEMP). 1996c. Expert panel notes for carnivore viability assessment, fall 1996, for the interior Columbia basin. Unpublished notes. On file with: U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior, Bureau of Land Management; Interior Columbia Basin Ecosystem Management Project, 304 N. 8th Street, Boise, ID 83702.

ICBEMP 1997c (See USDA Forest Service and USDI Bureau of Land Management, 1997, Upper Columbia River Basin Draft Environmental Impact Statement, Preferred Alternative).

ICBEMP 2000a (See USDA Forest Service and USDI Bureau of Land Management, 2000, Interior Columbia River Basin Supplemental Draft Environmental Impact Statement, Vol. 1).

Interior Columbia Basin Ecosystem Management Project (ICBEMP). 2003. The Interior Columbia Basin Strategy

Interior Columbia Basin Ecosystem Management Project (ICBEMP). 2003. Interagency Memorandum of Understanding Between USDA FOREST SERVICE -Regions 1, 4, 6, Pacific Northwest and Rocky Mountain Research Stations And the USDI Bureau of Land Management - Oregon, Washington, Idaho, & Montana And the USDI Fish and Wildlife Service – Region 1 and Region 6 And the Environmental Protection Agency- Region 10 And the DOC (NOAA) National Marine Fisheries Service – NW Region. FS Agreement No. 03-RMU-11046000-007

Johnson, K. H. and C. E. Braun. 1999. Viability and conservation of an exploited sage grouse population. Conservation Biology. 13:77-84.

Landers, Peter B., Penelope Morgan and Frederick J. Swanson. 1999. Overview of the Use of Natural Variability Concepts in Managing Ecological Systems, Ecological Applications, 9(4), 1999, pp. 1179-1188.

Longland, William S. and James A. Young. 1995. Landscape Diversity in the Western Great Basin, In: Biodiversity on Rangelands, Natural Resources and Environmental Issues, Volume IV, Proceedings of the Symposium, N.E. West, ed. Albuquerque, New

Mexico, February 16, 1993.

McClure, Heather, David Prevedel, and Susan C. Miller, in press. The Mapping of Sagebrush Subspecies and Canopy Densities on the Sawtooth and Boise National Forests, Proceedings of the Ninth Biennial Remote Sensing Applications Conference, USDA Forest Service, San Diego, CA, April 8-12.

Mehl, Carolyn A., Robert Steele, Steven Warren, Grad Holt, Jonathan B. Haufler, and Gary J. Roloff. 1998. The Ecosystem Diversity Matrix for the Idaho Southern Batholith Landscape: A Users Manual, Boise Cascade Corporation, 1111 West Jefferson Street, Boise, Idaho.

Morgan, Penelope, and Russ Parsons, 2001. Historical Range of Variability of Forests of the Idaho Southern Batholith Ecosystem, Revised Final Report, Department of Forest Resources, University of Idaho, Moscow, Idaho, and Fire Sciences Laboratory, Rocky Mountain Research Station, Missoula, Montana.

Nature Serve 2005, *Dryocopus pileatus* - (Linnaeus, 1758) Pileated Woodpecker, section "Management Summary"

Nutt, Lisa and Susan Miller. March 24, 2006. Greater sage grouse documentation of mid and fine-scale modeling parameters. Project record for the Southwest Idaho Ecogroup Forest Plan Revision. 12p.

Nutt, Lisa, Kathy Geier-Hayes, and Susan Miller. March 24, 2006. White-headed woodpecker documentation of SPECTRUM modeling parameters. Project record for the Southwest Idaho Ecogroup Forest Plan Revision. 6p.

Nutt, Lisa, Kathy Geier-Hayes, and Susan Miller. March 20, 2007. Pileated woodpecker documentation of SPECTRUM modeling parameters updated 1/9/07. Project Record for the Southwest Idaho Ecogroup Forest Plan Revision. 11p

Nutt Lisa and Chans Obrien, November 2005, Greater sage-grouse baseline data summaries.

Nutt Lisa and Chans Obrien, November 2005, Pileated woodpecker baseline data summaries.

Nutt Lisa and Chans Obrien, November 2005, White-headed woodpecker baseline data summaries.

Paige, Christine and Sharon A. Ritter. 1999. Birds in a Sagebrush Sea, Managing Sagebrush Habitats for Bird Communities, Partners In Flight, Western Working Group, 1999.

Quigley, Thomas M. and Sylvia J. Arbelbide, Tech. Eds., 1997. An Assessment of

Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Greater Basins, Vol. I, General Technical Report PNW-GTR-405, Portland, Oregon, USDA Forest Service, Pacific Northwest Research Station.

Raphael et al. 2000, (Draft) Effects of SDEIS Alternatives on Selected Terrestrial Vertebrates of Conservation Concern within the Interior Columbia River Basin Ecosystem Management Project, Pacific Northwest Research Station, Olympia, WA

Redmond et al. 1997, Landsat Vegetation Mapping of the Southwest and Central Idaho Ecogroups, Final Report, Contract #53-0261-6-25, Wildlife Spatial Analysis Lab, Montana Cooperative Wildlife Research Unit, University of Montana, Missoula, MT

Redmond, Ronald L., Troy P. Tady, Foster V. Fisher, Michele Thornton, and J. Chris Winne. 1998. Landsat Vegetation Mapping of the Southwest and Central Idaho Ecogroups. Executive Summary, Contract #53-0261-6-25, Wildlife Spatial Analysis Lab, Montana Cooperative Wildlife Research Unit, University of Montana, Missoula, MT.

Sloan, John O., 1998. Historical Density and Stand Structure of an Old-Growth Forest in the Boise Basin of Central Idaho. USDA, Forest Service, Intermountain Research Station, Boise, Idaho.

Steele, Robert, Robert D. Pfister, Russell A. Ryker, and Jay A. Kittams. 1981. Forest Habitat Types of Central Idaho, USDA Forest Service, Intermountain Forest and Range Experiment Station, General Technical Report INT-114.

Sveum, C. M., J. A. Crawford, and W. D. Edge. 1998. Use and selection of brood-rearing habitat by sage grouse in south central Washington. Great Basin Naturalist 58: 344-351.

Thomas, Jack Ward; Anderson, Ralph G.; Maser, Chris; Bull, Evelyn L. 1979. Snags. In: Thomas, Jack Ward, tech. eds. Wildlife habitats in managed forest, the Blue Mountains of Oregon and Washington. Agric. Handb. No. 553. Washington DC: U.S. Department of Agriculture: 60-77.

Tisdale, E. W. and M. Hironaka. 1981. The Sagebrush-Grass Region: A Review of the Ecological Literature, University of Idaho, College of Forestry, Wildlife and Range Sciences, Moscow, Idaho, 31pp.

US Department of the Interior, Fish and Wildlife Service. 2002. Birds of Conservation Concern, Division of Migratory Bird Management, Arlington, Virginia. 99 pp.

Utah Division of Wildlife Resources, 2002. Strategic Management Plan for Sage-Grouse. Publication 02-20. State of Utah, Department of Natural Resources, Division of Wildlife Resources.

Wambolt et.al., 2002 Conservation of Greater Sage-Grouse on Public Lands in the Western U.S.: Implications of Recovery and Management Policies, PACWPL Policy Paper SG-02-02

Wisdom, Michael J.; Holthausen, Richard S.; Wales, Barbara C.; Hargis, Christina D,; Saab, Victoria A.; Lee, Danny C.; Hann, Wendel J.; Rich, Terrel D.; Rowland, Mary M.; Murphy, Wally J.; Eames, Michelle R. 2000. Source habitats for terrestrial vertebrates of focus in the Interior Columbia Basin: broad-scale trends and management implications. Gen. Tech. Rep. PNW-GTR-485. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 3 vol. (Quigley, Thomas M., tech. ed.: Interior Columbia Basin Ecosystem Management Project: scientific assessment).