

# Managing Sagebrush Habitats for Wildlife Communities at Multiple Scales: the Southeast Oregon Resource Management Plan, Vale District, Bureau of Land Management

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Productive rangelands near Arock, Malheur County, Oregon

**Overview** - A mid-scale assessment process that links mid and fine scale management objectives for sage grouse and other animals that use sagebrush habitats is described. Range Health Assessments are used as the venue for evaluating and reporting on wildlife habitat conditions. The assessment findings tie directly to habitat criteria disclosed and analyzed in a Final EIS and prescribed in a Resource Management Plan.

The approach is considered to be appropriate for characterizing sagebrush steppe wildlife habitats found on public land in Malheur County, Oregon.

The long term intent of the management framework described is to move towards the

attainment of habitat patterns, plant compositions, and structural characteristics in sagebrush steppe that will: a) substantially meet the Western Association of Fish and Wildlife Agency (WAFWA) guidelines for sage grouse b) provide the habitats needed to support multiple species of wildlife (e.g. communities of animals) per BLM Washington Office advice.

The strategy presented uses vegetation types in grazing allotment pastures and combinations of grazing allotments (referred to in Vale as Geographic Management Areas) for assessment and management units. Although biological systems have limited correlation with BLM grazing unit boundaries, livestock grazing adjustments and project level treatments occur at the pasture level. As such pasture and GMA conditions are incorporated into BLM wildlife management objectives for purely practical reasons. These administrative boundaries and the vegetation within them may be considered randomly sized and shaped puzzle pieces that join and form a sagebrush steppe landscape.

The rapid assessment data derived from this evaluation is considered suitable for generally describing degrees of habitat connectivity, fragmentation and quality. Ideas presented herein have been influenced by the comments of numerous resource professionals within BLM and other agencies including the US Fish and Wildlife Service, Oregon Department of Fish and Wildlife, and Idaho Fish and Game.

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Note: Some of the ideas or variations on their content may be of use to biologists working elsewhere in sagebrush habitats. However, it is well understood that there is no single management strategy that will meet all of the peculiar local needs and conditions BLM biologists face in the west. One size fits all strategies rarely (if ever) work. Like any other assessment approach the ideas presented have strengths and weaknesses.

The best local working strategies related to wildlife and sagebrush habitat will not only have to meet the perceived needs of BLM and state agencies but be realistic in terms of what can be accomplished with limited staff and time. There are very few (if any) practical ideas about how a BLM Resource Area biologist may assess landscape conditions for multiple species of wildlife so that current issues of management concern may be addressed.

*The content of this document will be released in more detailed form (white paper through the BLM National Science and Technology Center) in the near future.*

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**Part 1. Desired Conditions, Time Frames, and the Basis for Objectives Disclosed in the Southeast Oregon Resource Management Plan**

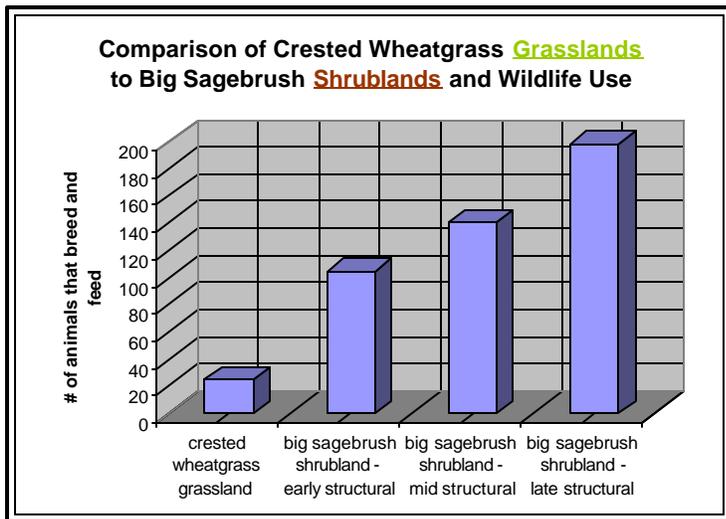
How BLM should manage tall sagebrush habitats (Wyoming, Great Basin and mountain sagebrush communities) to meet wildlife habitat values and commodity demands was a planning issue that surfaced in the scoping phase of a land use plan for the Jordan and Malheur Resource Areas, Vale District. Existing BLM records showed that approximately 3.49 million acres of rangeland land in the Southeast Oregon Resource Management Plan (SEORMP) area had the potential to support big sagebrush habitat.

The long term goal of the preferred alternative and assumed outcome for purposes of analysis in the RMP Final Environmental Impact Statement (FEIS), is that 70% or more (approximately 2.44 million acres) of these potential big sagebrush communities would provide habitat with the composition and structure capable of supporting *sage grouse and other wildlife that use sagebrush habitats* defined as Class 3,4, and 5 habitats in Appendix F of the FEIS (Volume 2; pp 289-304). The remaining 30% or less of this 3.49 million acre pool of habitat could be comprised of grassland communities defined as Class 1 and 2 habitats in Appendix F (e.g. crested wheatgrass types or recently burned areas where sagebrush recolonization is either absent or present at <5% canopy cover). These Class 1 and 2 habitats would therefore account for about 1.05 million acres or less of the SEORMP area. The FEIS analyzed different outcomes of Class 3,4, and 5 types and their consequences to wildlife that use sagebrush habitats.

Appendix F further indicates certain desired fine scale proportions (within livestock management pastures) and mid-scale arrangements (within GMA's) to drive the long term objective because both of these fine scale measures have a profound influence on wildlife habitat quality, connectivity, and fragmentation; all of which are issues of management concern in Oregon as well as the west in general.

Although Classes are defined initially on the basis of line intercept canopy cover values of shrubs because of the structural values, understory character is not ignored. To the extent possible predominant understory character (per range survey or Ecological Site Inventory data available) and shrub structural maturity is also described in an evaluation. Section 3 of this document indicates typical variations and definitions of desired and less desirable Class types.

The RMP management objective terminology referring to *sage grouse and other wildlife that use*



*sagebrush habitats* was used deliberately to indicate the intent to provide habitat values that meet the habitat requirements of a wide variety of species (e.g. communities of wildlife) including but not limited to sage grouse. The expanded narrative for the upland management objective in the SEORMP/FEIS revealed this intent.

The fundamental basis of support for the community based wildlife objective and environmental analysis in the SEORMP FEIS is found in The Relationship of Terrestrial Vertebrates to Plant

Communities and Structural Conditions, Wildlife in Managed Rangelands; The Great Basin of Southeastern Oregon, Thomas et al. (1984). This document indicates that multiple species of wildlife feed and breed in complex sagebrush habitats (Class 3,4,and 5 types) in contrast to grasslands (Class 1 or 2 types). Perhaps the most extreme difference between grasslands and shrublands is shown in the graph on the next page in which monotypic crested wheatgrass seeding are compared to big sagebrush vegetation types. Early, mid, and late structural status in the graph generally refers to the size and volume of sagebrush present. Although some may take issue with Thomas et al. and consider that it is outdated science, the current literature tends to reaffirm the basic principle that wildlife communities are generally more diverse and abundant in complex shrubland communities compared to grassland communities.

## **Part 2. Desired Conditions at the GMA and Livestock Grazing Allotment Pasture Level**

### Structural characteristics and general distribution at mid scales (GMA's):

Shrub cover capable of supporting the life history requirements of sage grouse and other wildlife that use sagebrush habitats should be present at multiple scales, over a large area, and in a variety of spatial arrangements (*e.g., at a landscape level and with connectivity present*). This should include a central core of sagebrush habitat which is present in large contiguous blocks as well as some other habitat arrangements such as islands, corridors, and mosaic patterns. Each of these patterns have significance to wildlife within geographic areas.

Shrub cover should be present that shows some mix of height and age classes but with an overall emphasis on the presence of communities with shrubs in a mature structural status per Maser et al. (1984).

*Wildlife objectives for sagebrush communities in individual pastures, allotments, and GMA's will be determined on the basis of factors such as: (1) presence of sage grouse and their variable life history needs, (2) existing native shrub cover patterns and characteristics within each GMA, (3) the frequency and reasonably foreseeable likelihood of fire, and (4) locations of seedings and their shrub overstory conditions.*

### Big sagebrush shrub cover on native range at fine scales (pastures):

Shrub overstories capable of supporting sage grouse and other species that use sagebrush habitats **should be present on at least** 50 to 75 percent of the surface acreage of livestock management pastures capable of supporting big sagebrush communities. For example: a 1000-acre native-range pasture that is a Wyoming, mountain, or great basin sagebrush type should provide shrub cover capable of supporting sage grouse and other species that use sagebrush habitats on at least 500 to 750 acres (Classes 3,4, and 5).

### Big sagebrush shrub cover on seeded range at fine scales (pastures):

Shrub overstories capable of supporting sage grouse and other species that use sagebrush habitats **should be present on at least** 25 to 50 percent of the surface acreage of livestock management pastures capable of supporting a big sagebrush community. For example: a 1000-acre seeded pasture that is a Wyoming, mountain, or great basin sagebrush habitat type should provide adequate shrub cover capable of supporting sage grouse and other species that use sagebrush habitats on at least 250 to 500 acres (Classes 3,4, and 5).

### Herbaceous understory on native range at fine scales (pastures):

Herbaceous understory composition throughout most native range habitats should exhibit multiple species of native forbs and grasses consistent with site potential at mid, late, or potential natural community ecological condition.

### Herbaceous understory on seeded range at fine scales (pastures):

Herbaceous cover composition in most seedings should support one or more adapted forb species.

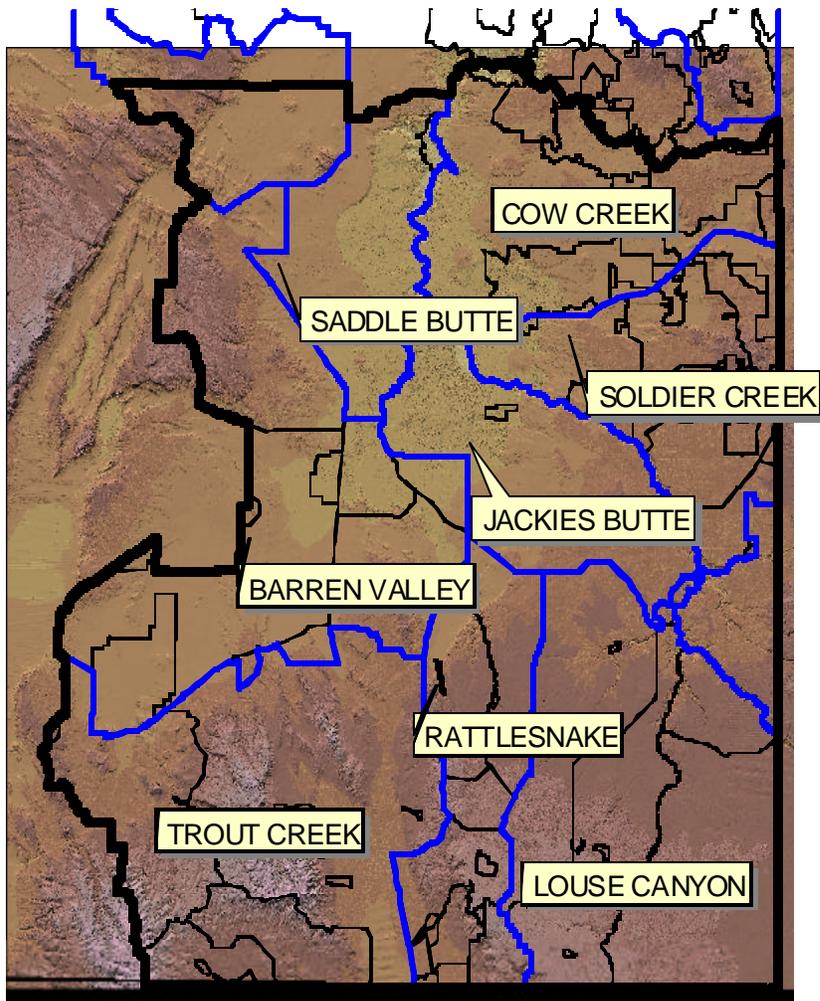


Figure 1 - Jordan Resource Area Geographic Management Areas

**Part 3. —General habitat relationships of sagebrush canopy cover (as determined by line intercept) and herbaceous understory composition to wildlife habitat values and use**

**Class 1 No sagebrush canopy cover**— Characteristic of rangelands that exhibit a grassland aspect and low vegetative structure. Generally common and widespread species of wildlife (e.g., pronghorn and horned larks) can be supported. Forage and insects are often abundant even for species that are dependent on sagebrush cover availability for nesting, hiding and so on. Class 1 rangelands do not necessarily pose a threat to wildlife diversity because they may in fact meet part or all of the habitat requirements of certain wildlife species. Native or nonnative Class 1 rangelands may be a wildlife issue of concern due to habitat fragmentation where they dominate large tracts of land within a GMA. Depending on rangeland condition and site potential, grass and forb values are highly variable.

**Class 1(A):** Plant communities that are dominated by native grasses and forbs which generally provide a portion of habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. These plant communities are typically observed after fire, before sagebrush species recolonize. These plant communities are desirable to achieve in a patchy, mosaic pattern within the sagebrush-steppe, intermingled with Class 2(A, C), Class 3(A, B, C), Class 4(B), and Class 5(B:25% to near 35% canopy cover) plant communities.

**Class 1(B):** Plant communities that are dominated by introduced annual grasses and forbs such as cheatgrass, medusahead, and tumbled mustard, which do not provide habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. These plant communities are not desirable to sustain in their present condition if the sites are capable of supporting a sagebrush plant community(ies). Before converting to annual grasses and annual forbs, these Class 1(B) plant communities were more likely to have been Wyoming big sagebrush or basin big sagebrush plant communities than either low sagebrush or mountain big sagebrush plant communities (Miller and Eddleman 2000). These plant communities are biologically and physically unstable because of high risk for repeated fire. High plant density of these annual plants, combined with great amounts of litter, effectively eliminate biological soil crusts. The combination of these conditions inhibit native plant recovery.

**Class 1(C):** Plant communities that are dominated by seedings of crested wheatgrass or other exotic perennial grasses which generally do not provide habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. These plant communities are lacking in sagebrush canopy cover either because a sagebrush seed source is lacking, or there has not been sufficient time elapsed for sagebrush species to recolonize the seeding. These plant communities are not desirable to sustain in their present condition if the sites are capable of supporting a sagebrush plant community(ies).

**Class 1(D):** Plant communities that are closed woodlands dominated by species such as western juniper. Particularly in the mountain big sagebrush and low sagebrush plant communities, western juniper encroachment and increasing density can result in near total loss of sagebrush canopy cover (Miller and Eddleman 2000). These Class 1(D) plant communities do not provide habitat needs for sage grouse (sage grouse did not select western juniper communities in central Oregon for nesting or winter habitat [BLM 1994; Miller and Eddleman 2000]) and other wildlife that use sagebrush-steppe habitats. In many of these plant communities, excessive livestock grazing pressure and/or fire suppression have been the main contributors to their formation. These plant communities have depleted herbaceous understories in addition to depleted shrub canopy cover, and could have depleted biological soil crusts if the sites are capable of supporting biological soil crusts. The depletion of the shrub, herbaceous, and biological soil crust cover can result in accelerated erosion on these sites. These plant communities are not desirable to sustain in their present condition if the sites are capable of supporting a sagebrush plant community(ies) and supported a sagebrush plant community(ies) before the western juniper encroached.

**Class 2 Trace to 5%**— Characteristic of rangelands that exhibit a predominantly grassland aspect and low vegetative structure. Canopy cover in this range of values is often indicative of relatively recent fire or other treatment effects. They indicate recolonization of sagebrush is underway. Generally common and widespread species of wildlife (e.g., pronghorn and horned larks) can be supported. Most of the complex shrub cover needs of sage grouse and other sagebrush dependent wildlife (structure, forage, and cover) are very limited or absent altogether in Class 2 rangelands. Connelly et al. refer to the cessation of sage grouse nesting where live sagebrush canopy cover values go below 5%. Depending on rangeland condition and site potential, grass and forb values are highly variable.

**Class 2(A):** Plant communities that are dominated by native grasses and forbs with some recruitment of sagebrush species, which provide a portion of habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. These plant communities are typically observed after fire, when sagebrush species are recolonizing. These plant communities are desirable to achieve in a patchy, mosaic pattern within the sagebrush-steppe, intermingled with Class 1(A), Class 2(C), Class 3(A, B, C), Class 4 (B), and Class 5(B:25% to near 35% canopy cover) plant communities.

**Class 2(B):** Plant communities that are dominated by introduced annual grasses and forbs such as cheatgrass, medusahead, and tumbled mustard, where sagebrush species are generally declining in abundance attributable to too frequent of fire. These plant communities are typically not providing habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. These plant communities are not desirable to sustain in their present condition if the sites are capable of supporting a sagebrush plant community(ies). These plant communities are biologically and physically unstable because of high risk for repeated fire. High plant density of these annual plants, combined with great amounts of litter, effectively eliminate biological soil crusts. The combination of these conditions inhibit native plant recovery.

**Class 2(C):** Plant communities that are dominated by seedlings of crested wheatgrass or other exotic perennial grasses, where sagebrush species are in the early stages of recolonization. These plant communities might not be providing the complex shrub-grass-forb cover and food needs of sage grouse and other wildlife that use sagebrush-steppe habitat, but if there is active recolonization of sagebrush species, there is high future likelihood for providing habitat needs. These plant communities are desirable to sustain if they are moving successional to greater abundance of sagebrush species.

**Class 2(D):** Plant communities that are woodlands dominated by species such as western juniper. Particularly in the mountain big sagebrush and low sagebrush plant communities, western juniper encroachment and increasing density can result in near total loss of sagebrush canopy cover (Miller and Eddleman 2000). These plant communities do not provide habitat needs for sage grouse (sage grouse did not select western juniper communities in central Oregon for nesting or winter habitat [BLM 1994; Miller and Eddleman 2000]) and other wildlife that use sagebrush-steppe habitats. In many of these Class 2(D) plant communities, excessive livestock grazing pressure and/or fire suppression have been the main contributors to their formation. These plant communities have depleted herbaceous understories in addition to depleted shrub canopy cover, and could have depleted biological soil crusts if the sites are capable of supporting biological soil crusts. The depletion of the shrub, herbaceous, and biological soil crust cover can result in accelerated erosion on these sites. These plant communities are not desirable to sustain in their present condition if the sites are capable of supporting a sagebrush plant community(ies) and supported a sagebrush plant community(ies) before the western juniper encroached.

**Class 3 Greater than 5%, up to 15%**— Characteristic of rangelands that exhibit a shrub land aspect and desirable complex vegetative structure that is capable of supporting a variety of sagebrush-dependent wildlife (including many special status species), especially at the higher canopy values of 10 to 15%. Connelly et al. suggest that sage grouse are able to winter within habitats that support at least a 10% canopy cover of sage if the shrub cover is available 10 to 12" above snow cover. Sage grouse nesting habitat values are thought to be present at the upper (near 15%) sagebrush canopy cover values. Unpublished BLM surveys suggested sagebrush obligate songbirds began to reoccupy crested wheatgrass grasslands where the sagebrush canopy was more than 5%. Songbird studies in Nevada crested wheatgrass seedings, Macadoo (1989), showed that a balanced composition of grassland and shrub dependent species were present when shrub overstory recovery was around 10% line intercept values. Depending on rangeland condition and site potential, grass and forb values are highly variable.

**Class 3(A):** Plant communities supporting low sagebrush or Wyoming big sagebrush, with an understory of native grasses and forbs (typically about 10% grass canopy cover and less than 10% forb canopy cover), and intact biological soil crusts in interplant spaces, represent the potential natural vegetation for these plant communities (Miller and Eddleman 2000). Class 3(A) low sagebrush or Wyoming big sagebrush plant communities provide habitat needs for sage grouse (e.g., winter habitat [Miller and Eddleman 2000]) and other wildlife that use sagebrush-steppe habitat. They are desirable to sustain in a patchy, mosaic pattern within the sagebrush-steppe, intermingled with Class 1(A), Class 2(A, C), Class 3(B, C), Class 4(B), and Class 5(B:25% to near 35% canopy cover) plant communities.

**Class 3(B):** Plant communities supporting basin big sagebrush or mountain big sagebrush, with an understory of native grasses and forbs, which are typically moving successional to greater abundance of sagebrush species and are not yet at the potential natural vegetation for these two plant communities. Despite this, Class 3(B) basin big sagebrush or mountain big sagebrush plant communities provide habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitat. Their presence in a mosaic, intermingled with Class 1(A), Class 2(A, C), Class 3(A, C), Class 4(B), and Class 5(B:25% to near 35% canopy cover) plant communities, should be considered desirable for sagebrush-steppe habitat. It should be recognized however, that these Class 3(B) plant communities are probably transitory and should be permitted to move successional to Class 4 (see Class 4(B) for more detail).

**Class 3(C):** Plant communities that are dominated by seedings of crested wheatgrass or other exotic perennial grasses, where sagebrush canopy cover is on the increase attributable to sagebrush colonization. While not providing the quality of habitat that Class 3(A) or Class 3(B) plant communities do, because typically there is not a diverse grass or forb component in these seedings, Class 3(C) plant communities do provide added structure because of the sagebrush, which provides habitat for some wildlife that use sagebrush-steppe habitat.

**Class 4 Greater than 15%, up to 25%**— Characteristic of rangelands that exhibit a shrubland aspect and desirable complex vegetative structure that is capable of supporting a wide variety of sagebrush-dependent wildlife (including many special status species). Sage grouse breeding and wintering can both occur within habitats with Class 4 shrub cover. Depending on rangeland condition and site potential, grass and forb values are highly variable.

**Class 4(A):** Plant communities supporting low sagebrush or Wyoming big sagebrush, which typically show a decrease in native grass and forb canopy cover (particularly where sagebrush canopy cover is 20% or greater [Miller and Eddleman 2000]), and biological soil crust development, compared with Class 3(A) low sagebrush or Wyoming big sagebrush plant communities. Disturbances such as excessive livestock grazing pressure are often contributory to development of Class 4(A) plant communities (Miller and Eddleman 2000). Class 4(A) is not the potential natural vegetation, nor a desirable outcome, for these two plant communities when the inherent capabilities of soils, landform, and climate are factored in. However, Class 4(A) plant communities can provide some habitat needs for sage grouse (e.g., winter habitat [Miller and Eddleman 2000]) and other wildlife that use sagebrush-steppe habitat.

**Class 4(B):** Plant communities supporting basin big sagebrush or mountain big sagebrush, with an understory of native grasses and forbs, more often than not represent the potential natural vegetation for these plant communities. Class 4(B) plant communities provide habitat needs for sage grouse (e.g., nesting and brood-rearing habitat [Miller and Eddleman 2000]) and other wildlife that use sagebrush-steppe habitat. Their presence in a mosaic, intermingled with Class 1(A), Class 2(A and C), Class 3(A, B, C), and Class 5(B:25% to near 35% canopy cover) plant communities, should be considered desirable for sagebrush-steppe habitat.

**Class 4(C):** Plant communities supporting mountain big sagebrush or low sagebrush, with tree seedlings (particularly western juniper) in the understory. Particularly in the mountain big sagebrush and low sagebrush plant communities, western juniper encroachment and increasing density can result in near total loss of sagebrush canopy cover (Miller and Eddleman 2000). These Class 4(C) plant communities currently provide habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. However, with continued growth and increasing density of the western juniper, sagebrush will decline and these plant communities will transition and at some point not provide habitat needs for sage grouse and other wildlife that use sagebrush-steppe habitats. On many of these Class 4(C) plant communities, excessive livestock grazing pressure and/or fire suppression have been the main contributors to their formation. These plant communities are not desirable to sustain in their present condition if the sites are capable of supporting a sagebrush plant community(ies) and supported a sagebrush plant community(ies) before the western juniper encroached.

**Class 5 Greater than 25%**— Characteristic of rangelands that exhibit a shrubland aspect and complex vegetative structure that is capable of supporting sagebrush dependent species. Class 5 types may, though not always, support diminished herbaceous cover values. However, Class 5 cover values need to be present for some species such as the pygmy rabbit. Mule deer and elk use this type of habitat for hiding in rangelands where topographic cover is limited and/or tall structure provided by mountain shrubs is absent. Class 5 shrub cover does not necessarily imply poor or low value habitat conditions for wildlife.

**Class 5(A):** Plant communities supporting basin big sagebrush or mountain big sagebrush, with an understory of native grasses and forbs, can represent the potential natural vegetation for these plant communities, particularly for canopy cover that ranges from 25% to less than 35% (Miller and Eddleman 2000). However, as sagebrush canopy cover approaches 35%, the understory of native grasses and forbs decreases. Class 5(B) basin big sagebrush or mountain big sagebrush plant communities can provide habitat needs for sage grouse (e.g., nesting and brood-rearing habitat [Miller and Eddleman 2000]) and other wildlife that use sagebrush-steppe habitat (e.g., pygmy rabbit). Class 5(B) that has sagebrush canopy cover in the range of 25% to less than 35% is probably within the range of what the soils, landform, and climate would sustain for these two plant communities, whereas canopy cover Class 5(B) that approaches or exceeds 35% in these two plant communities is probably undesirable and a result of excessive livestock grazing pressure and/or fire suppression

**Class 5(B):** Plant communities supporting low sagebrush or Wyoming big sagebrush, which typically are depauperate in understory native grasses and forbs (Miller and Eddleman 2000) and often have an understory composed of exotic annuals such as cheatgrass and mustards. Understory native grasses, forbs, and biological soil crusts would be primarily restricted to microsites beneath shrub canopies and would rarely be found in interspace microsites. Disturbances such as excessive livestock grazing pressure are often contributory to development of Class 5(A) plant communities (Miller and Eddleman 2000). Although these low sagebrush or Wyoming big sagebrush plant communities can provide some habitat needs for sage grouse (e.g. winter habitat; Miller and Eddleman 2000) and other wildlife that use sagebrush-steppe habitat, these Class 5(A) plant communities are not the potential natural vegetation, nor a desirable outcome, for these two plant communities when the inherent capabilities of soils, landform, and climate are factored in.

#### **Part 4. Summary and Other Key Points**

Summary – Wildlife biologists in Jordan Resource Area are conducting rapid assessments of sagebrush community composition, structure and spatial distributions according to Classes detailed in a Resource Management Plan. The data are collected in the course of Range Health Assessments within Geographic Management Areas comprised of several BLM grazing allotments that occupy about 250,000 to 500,000 acres. It is assumed that this kind of data collection and level of accuracy is consistent with the intent of conducting a Range Health assessment/evaluation

Because of the large acreages being assessed and managed we cannot discern all of the possible combinations of overstory and understory conditions on a piece of land (at very fine scales); that would be an impossible task. However, we can make judgments about predominant conditions and document important habitat variations with photographs and narratives.

The data collected are a combination of both measured and estimated values which are tied to polygons and may eventually be entered into a geographic information system. We can then determine habitat patterns, qualities, and proportions in ways that have not been done before in Vale District.

As presented, Classes are considered to be useful big picture descriptors for assessing habitat structural conditions important to wildlife. They are also useful for setting management objectives that use ranges of habitat values and combinations of habitats as opposed to highly discrete measures which are often : a) difficult to attain b) difficult to measure/monitor over the long term c) difficult to integrate into activity plans that cover multiple thousands of acres of land.

Desired condition information and measurable habitat characteristics listed in parts 1 through 3 of this paper are used as the context for crafting multi-scale evaluation narratives. Wildlife sensitive prescriptions for seedings, rehabs, prescribed fire, fuel treatments consistent with the Southeast Oregon RMP may then be proposed. Rather than prescribing “no net loss” of sagebrush habitat for the benefit of wildlife, which is a tempting but unattainable objective from a practical standpoint, this strategy promotes a reasonable range of disturbance (e.g. burned areas and seedings with little or no sagebrush cover) over large and small areas to meet wildlife needs.

Depending upon resource values and whether or not treatment projects are contemplated, more detailed project level assessments to address sage grouse and other species may be necessary. Idaho BLM biologists have crafted sage grouse assessment criteria suitable for detailed, project level evaluations in occupied sage grouse habitats.

Other Related Data - We rely on a number of other existing GIS themes and data sources to supplement the assessment of sagebrush habitat Classes. For instance, range survey and soil mapping data show the distribution of soil/vegetation types and they typically correlated well with the Class determinations. Landsat thematic mapper data has been used and is helpful in some instances. We supplemented each Range Health writeup with GPS located digital images (regular photos could have been taken just as easily). Pictures are extremely helpful in recalling what was seen and communicating various resource conditions to the public.

Desired Conditions and Site Potential/Capability - The desired conditions and landscape layout objective in an activity plan must be consistent with site potential information in Ecological Site Inventory surveys or the best available information such as range survey data. In the end, a quality range Health assessment

for wildlife that will withstand public scrutiny and be meaningful is dependent upon a variety of information sources and a good working knowledge of the habitats being evaluated. There are no rigid standards for how to do a Range Health assessment for wildlife habitat so there is, within reason, a lot of room for interpretation and innovation.

Sagebrush Budgets - In this strategy each Resource Area and grazing allotment pasture is encumbered by their own individual desired acreage and canopy Class figures of potential big sagebrush types according to range site descriptions. In other words, each Resource Area has its own acreage accountability based on site potential so it is their big sagebrush “budget” and “decision space” for long term management.

In this sagebrush community “management architecture”, sagebrush budgets (the proportions of Class 1/2 and Class 3/4/5) may vary among GMA’s as long as the total proportion within the Resource Area meets the “management outcome assumption” in the SEORMP FEIS.

For instance, the Jackies Butte GMA community level wildlife objective (in an area highly fragmented by wildfire and seedings) may have a shrub community target that is proportionally lower than most other GMA’s. In contrast, the Louse Canyon GMA may have a proportionally higher shrub community target because it is currently very well connected and has been only slightly influenced by the impacts of wildfires and seedings.

Deviations From Minimum Values and Cumulative Effects Analysis - It is assumed that deviations from the minimum desired conditions in each pasture (Section 2) will occur; but the goal of meeting Resource Area desired conditions (70% or more of the habitats being Class 3,4, and 5 character) and desired GMA characteristics will still play a role in long term management. Consequently, if the management strategy is followed to a conclusion the cumulative effects of existing projects and ongoing fires will influence the potential for shrub cover reducing projects throughout the entire Resource Area. The true intent of considering and analyzing cumulative effects in sagebrush habitats, as indicated in the National Environmental Policy Act, may then be addressed.

Projects and Prescribed Fires - Reaching the 30% level of Class 1 and 2 habitats does not mean prescribed fire or other shrub reducing treatments can no longer occur in a Resource Area. It does mean, however, that the timing and locations of restoration, re-treatment etc. should be considered and that such treatments may then be delayed until sufficient sagebrush recolonization occurs.

Rehabilitation and Minimum Values - Fine scale (pasture level) desired conditions for sagebrush cover are a good starting point for deciding how much restoration might be done at a minimum in rehab regardless of where the impact occurs. They also suggest what would be desirable residual shrub cover values would be following a prescribed treatment (fire, mechanical, etc) is proposed.

Community Complexes - Very frequently sagebrush habitats occur as complexes of two or more co-mingled structural Classes. When such conditions occur habitats are simply labeled as complexes comprised of the appropriate Classes. This kind of complex mapping is consistent with the protocols of range surveys, soil surveys, or ecological site inventories (none of which give a perfect picture of resource conditions either). Where possible we could estimate how much of each Class is present and where they are, but estimating dominance/co-dominance is thought to be the most realistic and defensible way to handle them in an assessment. Sometimes the proportions and locations simply cannot be specified unless we used digital imagery and computer assisted analyses (which aren’t that accurate or readily available at

the present time).

Ongoing Assessment of the Vale Project and Other Treatments - Based on BLM job documentation records and field visits in the course of Range Health assessments the actual spatial locations of seeded and chemically treated areas are being captured in the District Geographic Information System. When the locations of these treatment areas are combined with habitat Class information, a current view of the Vale Project and other similar land treatment impacts become clear. In general, references to treatments from the Vale Project era are misleading to the public in that sagebrush recolonization has occurred to a substantial degree in many instances and the adverse effects of “grassland structural conditions” have diminished within them.

Recent Science - ICBEMP Science and the Conservation Strategy for Landbirds in the Columbia Plateau of Eastern Oregon and Washington both endorse the use of focal species (species such as sage grouse and other species whose habitats have declined substantially within the Interior Columbia Basin) and multi-scale analysis considerations. The means to accomplish this goal are not specifically defined but rather left up to local area interpretations. Identifying suites of species that have management importance within GMA’s would appear to be a valid way to interpret and apply ICBEMP science.

Reasonable and generally consistent Standard determinations that are not “lock step”

As described, the assessment process and “screens” that GMA’s and pastures are compared to can foster consistency in how rangelands are assessed and evaluated. It is always best that biologists visit as many areas as possible to arrive at range health determinations. However, given the way habitats are characterized with standard measures, anyone with the ability to measure and/or estimate canopy cover could collect the data for a biologist to be analyzed later in an evaluation. It takes the guesswork out of what others should collect for addressing wildlife habitat matters if a biologist can’t be there and, perhaps more importantly, the result is a landscape map which addresses degrees of sagebrush habitat connectivity or fragmentation.

Habitat Relationships analyses

The picture painted by Thomas et al. in Appendix 9 may very well be in need of some adjustments based on what we now know about certain species. However, the basic idea of using habitat relationships (when you don’t know where every species is located) and the fact that more animals use complex sagebrush types than grasslands is still substantially true and a good foundation to build on until something better comes along.