Greater Sage-Grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Lake County, Oregon

Between the
Lakeview Soil and Water Conservation District
and the
United States Fish and Wildlife Service

CCAA Permit Number: TE56818B-0
CCAA Duration: 30 years (2015 – 2045)

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PURPOSE

The purpose of this Candidate Conservation Agreement with Assurances (CCAA) is to maintain and/or improve greater sage-grouse habitat while contributing to the economic sustainability of landowners and maintaining the ranching culture and agricultural way of life in Lake County.

INTRODUCTION

This agreement recognizes that ranching operations in Lake County have contributed to the well-being of greater sage-grouse (*Centrocercus urophasianus ;* hereafter referred to as 'sage-grouse') by providing large areas of continuous, high quality habitat on both private and public lands. In addition, the continued sustainability of these operations is a primary means of preventing further habitat fragmentation and loss.[1] This CCAA provides landowners assurances that ranch and land management practices can continue in the event sage-grouse is listed under the Endangered Species Act (ESA), while also identifying opportunities to provide additional benefits by reducing or removing existing threats to sage-grouse.

A CCAA is a voluntary agreement whereby landowners agree to manage their lands to remove or reduce threats to a species that may become listed under the ESA. In return for managing their lands to the benefit of a species at risk, landowners receive assurances against additional regulatory requirements should that species ever be listed under the ESA. The programmatic design of this agreement, its "umbrella" nature, streamlines the process for landowner enrollment, as follows:

- Under a programmatic CCAA, the United States Fish and Wildlife Service (FWS) will issue Lakeview Soil and Water Conservation District (SWCD) an Enhancement of Survival (EOS) permit pursuant to section 10(a)(1)(A) of the ESA for a period of 30 years.
- The SWCD, in coordination with the FWS and other partners, will then work with willing landowners to develop a Site Specific Plan (SSP) for each landowner/parcel, and issue a Certificate of Inclusion (CI) for coverage under the EOS permit.

Landowners wishing to enroll in this CCAA must agree to maintain contiguous habitat by avoiding further fragmentation and address all other threats to sage-grouse and their habitats within their control with one or more Conservation Measures (CMs), by doing this the enrolled lands will meet the "CCAA Standard"[2]. A CM is defined as an activity or action which, when implemented or continues to be implemented, will reduce or remove threats to sage-grouse and will improve or maintain their habitat. This CCAA provides, in Appendix A, a comprehensive list of specific CMs from which the landowner and the SWCD can jointly select those measures most appropriate to the property that will adequately address the identified threats to sage-grouse. This CCAA also provides the landowner the opportunity of working with the SWCD,

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[1] Habitat fragmentation is the breaking up of sage-grouse habitat into smaller parcels, creating discontinuous habitat.
[2] The CCAA standard is: "When evaluating a potential CCAA, the FWS must determine that the benefits of conservation measures to be implemented by a property owner under a CCAA, when combined with those benefits that would be achieved if the conservation measures were also to be implemented on other necessary properties, would preclude or remove any need to list the covered species."

and with approval of FWS, to develop additional CMs when an appropriate CM cannot be found in Appendix A.

Since the agreement is voluntary, the landowner can end it at any point, although in doing so, any assurances and incidental take coverage for the enrolled landowner under the EOS permit would terminate.

There are three goals this programmatic CCAA is designed to meet:

- Provide participating landowners assurances that current ranch and land management practices covered by this CCAA will continue in the event sage-grouse is listed under the ESA, provided that the CCAA is being implemented as agreed upon.
- Promote CMs that reduce or remove threats to sage-grouse through proactive ranch and land management, providing comprehensive conservation to meet the CCAA standard.
- Provide an ecological approach to maintain current sage-grouse habitat and to improve habitat that is not meeting conservation objectives, as identified in enrolled landowners' site specific plans.

This species is currently a candidate for listing under ESA; it is not listed. Therefore, there are no ESA regulations related to sage-grouse currently impacting private lands and livestock operations. The sage-grouse is currently managed by Oregon Department of Fish and Wildlife (ODFW).

Species Distribution and History

Prior to settlement in the 19th century, sage-grouse inhabited 13 western states and three Canadian provinces, and their potential habitat covered over 463,509 square miles. Sage-grouse have declined across their range due to a variety of causes and now occur in 11 states and two Canadian provinces. Overall, the species distribution and numbers have shown a decreasing trend. Many factors played a role in reducing sage-grouse from an abundant, broadly distributed species, but the primary threat across their range is loss of habitat due to increased surface disturbance and general fragmentation of the landscape.

In Oregon, sage-grouse were once found in most grassland and sagebrush habitats east of the Cascades. European settlement and conversion of sagebrush steppe into agricultural production led to extirpation of the species in the Columbia Basin by the early part of the 1900s, but sagebrush rangelands have persisted, particularly in southeast Oregon. Sage-grouse populations have fluctuated markedly since the mid-1900s, with notable declines in populations from the 1950s to early 1970s. Oregon sage-grouse numbers apparently have declined over the long term (Hagen 2005). However, population indices over the last 30 years suggest a relatively stable statewide population (Hagen 2010). Reasons for these losses likely are the cumulative effects of habitat loss and degradation, changes in predator control methods, and increases in human disturbance (Hagen 2005). Habitat loss and fragmentation are the primary cause for long term changes in population abundance and distribution. Additional threats include, sagebrush removal, agricultural conversion, drought, rising CO_2 levels, flooding, West Nile virus, unmanaged or

improper grazing, wild horses, recreation, predation[3], sagebrush defoliating insects (Aroga moth), and energy development and other infrastructure (USFWS 2010).

In Lake County, as it is throughout sagebrush habitat in Oregon, wildfire in low elevation sagebrush and its resultant increase of exotic annual grasses, as well as juniper encroachment in high elevation sagebrush due to lack of fire are the two largest factors causing habitat loss.

Current harvest management is not considered a significant threat to sage-grouse populations (USFWS 2010). In southeastern Oregon, there are healthy populations of sage-grouse with limited hunting. ODFW allows harvest of up to 5% of the projected fall population of birds, and in practice, harvest has been estimated at less than 3% of the fall population in hunted areas (Hagen 2005). Current research found that such limited hunting does not affect populations (Connelly et al. 2000; Sedinger et al. 2010). Harvest of candidate species is permissible under the law. Hunters contribute to sage-grouse management by submitting wings of harvested birds to ODFW, allowing biologists to learn more about age, sex, reproductive success, and distribution of the species.

Listing

Between 1999 and 2003, the FWS received eight petitions to list various populations of sage-grouse under the ESA. On January 12, 2005, the FWS published a finding that sage-grouse did not warrant range-wide protection under the ESA (70 FR 2244). This "not warranted" finding was challenged in court, and in December 2007, a federal judge ordered the FWS to reconsider its decision. On March 23, 2010, the FWS published a range-wide "warranted but precluded" finding (75 FR 13909). The 2010 finding indicated that sage-grouse warrant listing under ESA, but higher priority species precluded proceeding with a listing rule at that time, thereby conferring candidate status on the sage-grouse. The primary range-wide threats to sage-grouse, as defined in the 2010 finding, are 1) habitat loss, fragmentation, and degradation and 2) inadequate regulatory mechanisms. In the 2010 FWS finding additional threats were identified, including an increase in the use of sagebrush habitat for renewable energy such as wind power and the spread of West Nile virus.

CCAA Development

Representatives from Harney County SWCD met with a delegation of SWCD representatives from Baker, Malheur, Lake, Grant, and Crook Counties on April 16, 2014. Following that meeting Lake County SWCD formed a steering committee to develop a Lake County CCAA patterned after the Harney County effort. The Lake County Greater Sage-Grouse Candidate Conservation Agreement with Assurances Steering Committee (Steering Committee) and the SWCD requested assistance from the FWS in developing a sage-grouse strategy for ranch and land management activities that could offer landowners assurances that their practices could continue in the event the species was listed under the ESA. Livestock production is a primary use of Oregon's rangelands, and listing the sage-grouse could have a significant impact on this use and the communities of Lake County. Therefore, the Steering Committee, comprised of

[3] Predation may be underestimated as a limiting factor to sage-grouse population success in much of its occupied habitat (Coates and Delehanty 2010; Coates et al. 2008; Dinkins et al. 2012; Kolada et al. 2009; Kolada et al 2009b; Moynahan et al. 2007; Willis et al. 1993). In particular the impacts of predation on sage-grouse can increase where habitat quality has been compromised by anthropogenic activities (Coates 2007; Bui 2009; Hagen 2012).

representatives from local private landowners, Lakeview SWCD, FWS, Natural Resources Conservation Service (NRCS), Lake County Commissioners, ODFW, Bureau of Land Management (BLM), Oregon State University Extension (OSU Extension), The Nature Conservancy (TNC), Lake County Umbrella Watershed Council and Lake County Cooperative Weed Management Area have developed this programmatic CCAA.

Information on existing conditions, status, and threats in this programmatic CCAA is summarized from the:

- ODFW's Greater sage-grouse conservation assessment and strategy for Oregon (hereafter referred to as 'ODFW Strategy') (Hagen 2011)
- FWS March 23, 2010, 12-month Finding (75 FR 13910)
- FWS January 12, 2005, 12-month Finding (70 FR 2243)
- Greater sage-grouse ecology and conservation of a landscape species and its habitat (Knick and Connelly 2011).

We refer the reader to these documents for a more in-depth analysis.

1. Factors Affecting the Species

The long term persistence of sage-grouse will depend on maintenance of intact shrub steppe landscapes as well as associated riparian and meadow habitats. Sage-grouse are landscape-scale species and the destruction and fragmentation of their habitat has contributed to significant population declines throughout its range over the past century. If current trends persist, many local populations may disappear in the next several decades, with remaining fragmented populations vulnerable to extinction. Habitat fragmentation is the most significant threat to the long term persistence of sage-grouse. Threats to sage-grouse and their habitats are outlined in Appendix A with corresponding CMs.

2. Conservation Approach

The basic conservation approach described in this CCAA is an ecologically-based approach to maintain current sage-grouse habitat and to improve deficient habitat. This approach relies on habitat models (Appendix C) that describe factors that impact plant community composition and structure over time. These models indicate specific threats that can be influenced by management to improve habitat quality for sage-grouse; these threats are, in turn, the basis for habitat-related CMs (Appendix A). Also identified are species-specific threats and associated CMs for non-habitat factors that directly (e.g. West Nile virus) and indirectly (e.g. insecticide use) impact sage-grouse populations (Appendix A).

3. Application and Enrollment Process

The following steps summarize the process:

- Landowner contacts the Lakeview SWCD in Lakeview. The SWCD will initially request from landowners the necessary information to initiate project review (i.e. landowner name; contact information; legal and general description of the property location; description of land use and management).
- SWCD will announce a quarterly deadline for submission of applications. SWCD will evaluate all applications received during that timeframe based on the following criteria for prioritization.

Prioritization of Enrollment by Category of Habitat/Location:

Preliminary Priority Habitat (PPH), are areas that have been identified as having the highest conservation value to maintaining sustainable sage-grouse populations. These areas correspond to Core Area Habitat in the ODFW Sage-grouse Conservation Assessment and Strategy for Oregon which includes known breeding, late brood-rearing, and known winter concentration areas. These areas also correspond to Priority Areas for Conservation (PACs) as identified in the FWS 2013 Conservation Objectives Team Report which include the most important areas for maintaining sage-grouse populations across the landscape.

Preliminary General Habitat (PGH), are areas of occupied seasonal or year-round habitat outside of PPH. These areas include Low Density Habitat as described in ODFW Sage-grouse Conservation Assessment and Strategy for Oregon, as well as additional areas of suitable sagebrush habitat.

1. Private lands within PPH
2. Private lands within PGH and adjacent to PPH
3. Private lands within PGH and not adjacent to PPH
4. Private lands adjacent to PPH not within PGH
5. Private lands adjacent to PGH not within PPH
6. Private lands that will maintain or provide new connectivity between PGH and PPH

The SWCD is responsible for the prioritization of private lands to be included in this CCAA consistent with ODFW Strategy (Hagen 2011) and its local implementation teams.

- SWCD will set a schedule to gather information needed to develop an SSP and to perform an initial assessment of the land where enrollment is sought.
- SWCD staff will conduct this initial assessment of ecological states. Following the site visit, the landowner and SWCD will identify the primary threats and the CMs that will address those threats. If the CMs seem acceptable to the landowner and SWCD, both parties will sign a Letter of Intent. The Letter of Intent is a non-binding agreement to list anticipated CMs, to schedule completion of baseline inventory, to schedule completion of an SSP and signing of the SSP/CI.
- SWCD will conduct a baseline inventory of the enrolled property within the timeframe identified within the Letter of Intent.
- The baseline data (initial reading) for long term monitoring (trend) may be collected, summarized, and completed prior to approval of the SSP, or a date for its completion will be scheduled within the SSP.
- SWCD will discuss with the landowner the importance of participation in or creation of a Rangeland Fire Protection Association (RFPA) to proactively protect private land from fires ignited on public land (see CM 6d).
- Upon landowner and SWCD agreement of the SSP and the CMs included in it, the SWCD will submit the SSP/CI to FWS for review and approval.

- FWS has up to 60 days to respond to the SSP application. Under the programmatic CCAA and relevant regulations and policy, if the SSP/CI and permit issuance criteria are met, the FWS will approve the SSP/CI through a Letter of Concurrence.
- Upon receiving a Letter of Concurrence from the FWS, both SWCD and the landowner will sign the SSP/CI.

4. Site Specific Plans for Participation under a Certificate of Inclusion

Each participating landowner will work with the SWCD to develop an SSP intended to promote good land stewardship by implementing actions on their enrolled lands that benefit sage-grouse. The landowner and SWCD will identify threats and select CMs identified in the programmatic CCAA for inclusion in their SSP. Individual SSPs will be consistent with the activities and CMs identified in the programmatic CCAA and will describe specific conservation practices that will be implemented on the enrolled lands to maintain, rehabilitate, or enhance habitat for the species, and remove or reduce any unfavorable impacts to the species arising from the management of these lands. Since all appropriate CMs cannot be anticipated, additional CMs can be included in the individual SSPs, which were not identified in the programmatic CCAA and that support healthy sage-grouse habitat, provided the landowner, SWCD, and FWS mutually agree to the CM. Once the individual SSP has been approved by the landowner, SWCD, and FWS, the SWCD will issue a Certificate of Inclusion (CI) to cover the agreed upon rangeland management practices and provide the landowner with coverage.

5. Conservation Measures Development

The overall management approach is to stratify the enrolled lands based upon the ecological requirements for sage-grouse habitat, and then identify the current state of that habitat for each plant community (determined by initial baseline inventory). Once identified, each plant community may transition (change) due to impacts on the site which may be natural, influenced by man, or a combination of both. Those actions that cause transition to improve or maintain sage-grouse habitat are considered conservation measures (CMs); the actions or impacts which degrade sage-grouse habitat are considered threats to the habitat. The ecological model, "state and transition" (Appendix C) demonstrates this process by plant community in a flow chart. An associated set of flow charts, located in *Section 6: Inventory and Monitoring Protocols,* describe the step-by-step process for stratifying habitat and identifying current states of plant communities. Derived from that classification, the flow charts continue on, identifying potential threats and CMs that will maintain or improve sage-grouse habitat. Through annual monitoring of the plant communities and long term monitoring (trend), the direction of transition of habitat can be determined. This will be the base of information used to make informed decisions on habitat management.

The process of selecting and/or developing specific CMs for individual properties will be based on the threats identified for the enrolled property (detailed in the SSP/CI), recognizing that each property is unique and CMs will be site-dependent. The SWCD will work with each landowner to identify specific threats for the property and select and/or develop CM(s) to remove or reduce each threat. Each identified threat within the control of the landowner will be addressed and will have one or more corresponding CM(s); the FWS and SWCD recognize not every potential CM listed for a particular threat is appropriate for a given property. Therefore, CMs selected or

developed will be based on their likely effectiveness, ability to be implemented, and should be the most beneficial for sage-grouse conservation on that particular property.

If no threats are identified or if current management is addressing identified threats, a detailed description of current management and a monitoring strategy may suffice as the SSP. **However, each enrolled landowner must agree to CM 1: *Maintain contiguous habitat by avoiding further fragmentation.*** The objective for this required CM is for no net loss in 1) habitat quantity (as measured in acres) and 2) habitat quality (as determined by the ecological state). The baseline determination of habitat quality and quantity will be completed during the baseline inventory and will serve as a reference point in meeting the objective for CM 1. Losses in sage-grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice versa, as long as the action avoids further fragmentation (consistent with *Section 10: Covered Activities* - development subsection).

While this is the objective of CM 1, FWS and SWCD understand that changes out of the control of the landowner will be handled as a changed circumstance. If changed circumstances occur, conservation measures need to be included consistent with *Section 14: Changed Circumstances*. CM 1 does not exclude CMs that might create a short term loss of habitat quality or quantity because such measures are intended to result in a long term improvement to sage-grouse habitat. Development activities covered by this agreement will be described in the SSP at the time of enrollment or can be added as a modification (consistent with *Section N. Modification of SSP/CI*, located in Appendix B) to the SSP and internal mitigation may be required (consistent with *Section 10: Covered Activities* - development subsection).

While these CMs should apply across the landscape, there may be circumstances where site-specific modifications or conditions warrant changes to the standard prescriptions. Changes to CMs and/or development of CMs will occur in consultation with the landowner and must have concurrence from the FWS. The SWCD will note those changes on the SSP/CI for enrolled properties, including rationale or justification for any modifications.

This CCAA incorporates, by reference, all conservation strategies in the ODFW Strategy (Hagen 2011) that are relevant to private lands. The landowner, SWCD, and FWS will draw from those strategies while developing CMs in the SSPs and implementing actions for the sage-grouse on lands enrolled in this CCAA. However, it is unlikely that the ODFW Strategy and this programmatic CCAA cover all needs for certain circumstances, so site specific measures outside of these references will be determined, as necessary, in consultation with landowners.

6. Inventory and Monitoring Protocols

The **overall management goal** is to facilitate maintenance of, or transition to, a desired ecological state that can serve the habitat needs of sage-grouse using an ecologically-based model (see state and transition diagrams for low elevation, high elevation, and riparian habitat shown in Appendix C). Additional conservation measures may be used to further increase the quality/value of sage-grouse habitat (e.g. timing of grazing in nesting habitat) or mitigate species-specific threats (e.g. raptor perches in the vicinity of essential habitat). However, focusing on species-specific conservation measures in habitat that is in, or at risk of, transition to a non-desired state can divert resources from addressing underlying ecological issues that ultimately define the current and future value of such habitats to sage-grouse and other sagebrush

obligate wildlife species. For this reason, an ecologically-based model will be used to determine inventory, monitoring, and conservation needs during the site specific planning process (for a detailed explanation of state and transition models, see Appendix C).

This section:

- Explains how individual enrolled lands are classified for upland and riparian sites (Site Selection Protocol)
- Visually depicts with a flow chart the stepwise process of inventorying the existing habitat conditions and establishing a data base for long term monitoring (Figure 1)
- Provides criteria for each ecological state and visually depicts how information about the current ecological state of the enrolled property feeds into the process of identifying potential threats, relevant objectives, needed conservation measures, and associated monitoring (Figures 2-4)
- Explains the purposes of long term monitoring (trend) and annual monitoring and refers the reader to each method's protocols and forms

Site Selection Protocol

1. Background information-Stratifying enrolled lands into inventory and monitoring units will require gathering any of the following background information that exists for each property/properties for which a site specific plan is being considered: aerial photographs, satellite imagery, written and oral histories, disturbance history (e.g., burn maps), management history, property maps, plant species lists, ecological sites and site descriptions, and soil maps.

2. Stratify by habitat suitability using existing data-The enrolled property will first be stratified into areas of existing suitable (i.e., low elevation ecological states A, B, and D; high elevation ecological states A and B; lotic riparian ecological states characterized by consistent access to floodplain) or potentially suitable sage-grouse habitat (i.e. low elevation ecological state C; high elevation ecological states C, D, and E; lotic riparian ecological states without consistent access to floodplain) and areas of persistently unsuitable habitat (e.g., historically non-habitat or permanently converted habitat – infrastructure, agriculture, residential, etc.) (see Figure 1).

3. On-site documentation of upland ecological states -The upland property will then be stratified by management unit (typically by pasture). Each upland management unit will then be stratified into the two primary ecological types (i.e., high elevation sagebrush rangeland and low elevation sagebrush rangeland) using a combination of existing knowledge and/or data, ecological site descriptions, GIS techniques, and field reconnaissance. Ecological types within management units will then be stratified by the ecological states described in their respective state and transition model. Preliminary ecological state strata will be determined using GIS data. The resultant preliminary strata will then be used to direct ground truthing and associated habitat inventory efforts; ground truthing of preliminary ecological state strata will be accomplished following procedures outlined in the Upland Ecological State Documentation Form (Appendix D-4). The ocular assessment outline located in Appendix D-4 will provide the basis for selecting representative areas for each stratum, where quantitative data will be collected

and serve as permanent habitat monitoring sites for the management unit (long term (trend) monitoring).

4. Establish and monitor upland trend sites – Sites which are representative of the ecological status of sage-grouse habitat within a pasture will be determined during ocular assessment and permanently marked on the ground and recorded using the Site Documentation Form shown in Appendix D-2 (Johnson and Sharp 2012). Trend monitoring, which consists of measurements of plant community attributes (ground cover, foliar cover of shrubs, basal cover of perennial herbaceous species, density and frequency of occurrence) will be recorded in an initial or baseline monitoring with follow-up measurements recorded at intervals of 3 to 10 years. The frequency of trend monitoring is dependent on site stability, baseline data determinations and the conservation measures being applied. The changes in plant community attributes are measured over time to determine if the ecological state of the plant community is changing (transitioning) toward or away from desired habitat or remaining stable. This information is assessed along with annual monitoring to determine cause(s) of change which may be management or climatic or a combination of both. This becomes the basis of determining if selected conservation measures are having the desired effect or if adaptive changes are needed. The basic method of upland trend monitoring used in this CCAA is a modified Pace 180° with step-point and density measurements with plot photos and landscape photos in cardinal directions. However, the CCAA provides the SWCD with the flexibility to employ (with the concurrence of the landowner) the most efficient, generally accepted rangeland monitoring methodologies to measure change in ecological states as related to specific objectives in the SSP. For a detailed explanation of the upland protocols see Appendix D.

5. Stratify riparian areas - Each stream will be stratified by pasture. This will be done to better identify the factors that are influencing change within each management unit (i.e. pasture). A site visit will be performed on the stream segments to identify critical areas (e.g. headcuts, extreme downcutting) and to perform ocular assessments. The ocular assessment is a point-in-time measurement of visual indicators and will be used for initial assessment to determine the ecological state of each stream reach within the model (Appendix C). Ideally one ocular assessment will be done per stream segment; however, due to stream heterogeneity and changes in ecological condition, multiple assessments may be necessary.

6. Establish and monitor riparian sites - Permanent representative trend sites will be determined during ocular assessment for low gradient stream segments. The upstream and downstream ends of the monitoring location, as well as any other critical area in between will be documented with GPS and marked by rebar. These permanent locations will be used as repeat photo monitoring points. Photos will be taken from these points both upstream and downstream to assess stream movement, site stability, and vegetative trend. If photo assessment indicates a stable ecological state (A) then monitoring will consist of periodic photos. If photo monitoring indicates an unstable ecological state (B or C) then a CM will be applied with further assessment such as Proper Functioning Condition (PFC). If this assessment determines the stream segment is non-functioning or functioning-at-risk, then a quantitative method of trend monitoring should be enacted.

The method selected will be determined by SWCD and the landowner for the specific stream segment.

Annual Monitoring

Sagebrush rangelands are dynamic systems that constantly change in response to fire, wildlife, climate, insect infestations, weed invasions, and natural vegetation succession; not just to inputs from management. Annual monitoring focuses on identifying management inputs and factors external to the management program that affect the responses of sagebrush rangeland over time. These are the factors that influence the change documented with trend monitoring (described above) and may include growing conditions for plants (e.g., precipitation, temperature trends, drought, etc.), livestock and wildlife numbers, utilization patterns of livestock and wildlife, insect and rodent infestations, recreational use, trespass livestock, and timing, duration, and frequency of livestock grazing. Suggested information and a data form for conducting annual monitoring are shown in Appendix D-3. In addition to the information in the "Annual Grazing and Habitat Summary", other potentially important annual records would include pasture-level grazing utilization and distribution, actual use, sage-grouse observations, or any other factors that could have affected the growing conditions for vegetation not identified on the form.

The following set of flow charts describes the step-by-step process for habitat stratification and identifying current states of plant communities. Derived from that classification, the flow charts continue on, identifying potential threats and the conservation measures that will maintain or improve sage-grouse habitat.

Figure 1. The stepwise process for habitat inventory and baseline assessment. This figure also demonstrates how information about the current ecological state of the enrolled property feeds into the process of identifying potential threats, relevant conservation objectives, needed conservation measures, and associated monitoring.

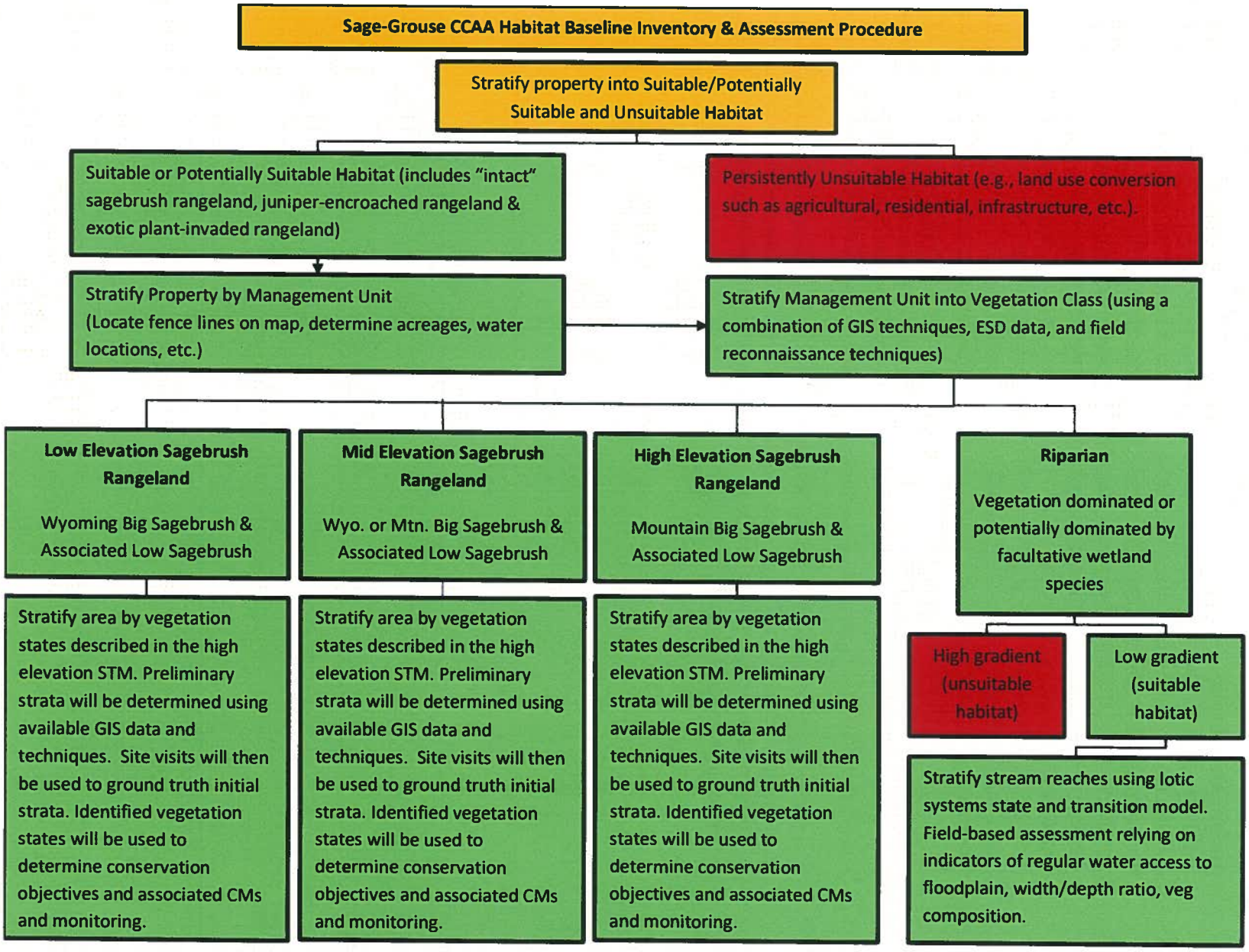


Figure 2. Low elevation sagebrush rangeland ecological type.

Low Elevation Sagebrush Rangeland

Ecological State A	Ecological State B	Ecological State C	Ecological State D
Site dominated by sagebrush, large perennial bunch-grasses, and perennial forbs. Sagebrush cover >10%. Capable of providing year around habitat for sage-grouse.	Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover <10%. Capable of providing seasonal habitat for sage-grouse.	Site dominated by decadent sagebrush and Sandberg bluegrass and/or annual grasses. Sagebrush cover > 10%. Capable of providing seasonal habitat.	Site dominated by exotic species. Often results in exotic annual grass-fire cycle. Not capable of providing habitat for sage-grouse in current state.
Conservation Objectives	**Conservation Objectives**	**Conservation Objectives**	**Conservation Objectives**
Prevent conversion to exotic annual grasses by maintaining dominance of large, deep-rooted perennial bunchgrasses and sagebrush. Manage for stable or improving trend.	Prevent conversion to exotic annual grasses by maintaining dominance of large, deep-rooted perennial bunchgrass and provide conditions for reestablishment of sagebrush. Manage for transition toward State A..	Maintain a dominant overstory layer of sagebrush and reestablish deep-rooted perennial vegetation. Experimentation with various methods for reestablishment might be necessary to cause desirable shift in vegetation.	Despite being in a non-habitat state currently, conservation objectives are suggested because of the inherent risks posed by exotic plant presence on the landscape. Manage fire risk and/or re-vegetate areas of exotic plants to veg dominated by deep-rooted perennial grasses.
Threats	**Threats**	**Threats**	**Threats**
Wildfire Improper grazing Exotic Invasives	Wildfire Improper Grazing Exotic Invasives Vegetative Treatment	Wildfire Improper Grazing Exotic Invasives	Wildfire Exotic Invasives Vegetative Treatment
Applicable CMs	**Applicable CMs**	**Applicable CMs**	**Applicable CMs**
Listed by threat in Appendix A.	**Listed by threat in Appendix A.**	**Listed by threat in Appendix A.**	**Listed by threat in Appendix A.**

Figure 3: Mid Elevation Sagebrush Rangeland Ecological Type

Mid Elevation Sagebrush Rangeland

Ecological State A	Ecological State B	Ecological State C	Ecological State D	Ecological State E
Site dominated by sagebrush, large perennial bunch-grasses, and per-ennial forbs. Sagebrush cover >10%. Capable of providing year around habitat.	Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover <10%. Capable of providing seasonal habitat.	Co-dominance of conifers, perennial grasses and sagebrush. Areas of conifer cover >5% not capable of providing seasonal habitat.	Site dominated by conifers. Depleted perennial understory. Exotica annuals present. Not capable of providing habitat in current state.	Site dominated by exotic species. Often results in exotic annual grass-fire cycle. Not capable of providing habitat for sage-grouse in current state.
Conservation Objectives	**Conservation Objectives**	**Conservation Objectives**	**Conservation Objectives**	**Conservation Objectives**
Maintain sagebrush and large perennial bunchgrasses and perennial forbs. Maintain sagebrush cover >10%.	Provide conditions for an increase in the cover of sagebrush. Manage for transition toward State A.	Restore shrubs and perennial herbaceous vege-tation by remov-ing of conifers and post treatment restoration of desired species.	Restore dominance of shrub and perennial grasses and forbs through removal of dom-inant conifer over-story and reveg.	Manage fire risk and/or revegetate areas of exotic plants to vegetation dominated by deep-rooted perennial grasses.
Threats	**Threats**	**Threats**	**Threats**	**Threats**
Lack of fire High severity fire Improper grazing Conifer encroach-ment	High severity fire Improper grazing Conifer encroach-ment	High severity fire Improper grazing Exotic Invasives Conifer encroach-ment	Wildfire Exotic Invasives	Wildfire Exotic Invasives
Applicable CMs	**Applicable CMs**	**Applicable CMs**	**Applicable CMs**	**Applicable CMs**
Listed by threat in Appendix A.	**Listed by threat in Appendix A.**	**Listed by threat in Appendix A.**	**Listed by threat in Appendix A.**	**Listed by threat in Appendix A.**

Figure 4. High elevation sagebrush rangeland ecological type.

High Elevation Sagebrush Rangeland

Ecological State A	Ecological State B	Ecological State C	Ecological State D	Ecological State E
Site dominated by sagebrush, large perennial bunch-grasses, and per-ennial forbs. Sagebrush cover >10%. Capable of providing year around habitat.	Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover <10%. Capable of providing seasonal habitat.	Co-dominance of conifers, perennial grasses and sagebrush. Areas of conifer cover >5% not capable of providing seasonal habitat.	Site over deep soils dominated by conifers. Under-story shrubs large-ly absent. Per-ennial herbaceous plant present. Not capable of pro-viding habitat in current state.	Site over shallow soils dominated by conifers. Shrubs and herbaceous understory largely absent. Not capable of providing habitat in current state.
Conservation Objectives Maintain sagebrush and large perennial bunchgrasses and perennial forbs. Maintain sagebrush cover >10%.	**Conservation Objectives** Provide conditions for an increase in the cover of sagebrush. Manage for transition toward State A.	**Conservation Objectives** Remove conifers and prevent further encroach-ment and main-tain cover of perennial grass and sagebrush	**Conservation Objectives** Restore dominance of shrub and perennial grasses and forbs through removal of dominant conifer overstory.	**Conservation Objectives** Restore shrubs and perennial herbaceous vege-tation by remov-ing of conifers and post treatment restoration of desired species.
Threats Lack of fire Improper grazing Conifer encroachment	**Threats** Lack of fire Improper grazing Conifer encroachment	**Threats** Lack of fire Improper grazing Conifer encroachment Exotic Invasives	**Threats** Lack of fire Exotic Invasives	**Threats** Lack of fire Exotic Invasives
Applicable CMs **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**

Figure 5. Riparian ecological type.

Lotic Riparian Systems			
Ecological State A Highly stable channel (width/depth ratio <12), annual flow usually reaches floodplain creating a large riparian buffer. Vegetation is dominated by deep-rooted riparian species.	**Ecological State B** Moderately stable channel (width/depth ratio >12), annual flow usually reaches floodplain creating a large riparian buffer. Vegetation is dominated by deep-rooted riparian species.	**Ecological State C** Unstable channel (width/depth ratio >12), annual flow usually does not access floodplain. Deep-rooted riparian vegetation is limited by water table depth.	**Ecological State D** Unstable channel (width/depth ratio <12), annual flow usually does not access floodplain. Deep-rooted riparian vegetation is limited by water table depth.
Conservation Objectives Maintain stable water table and manage riparian vegetation	**Conservation Objectives** Maintain stable water table and manage riparian vegetation	**Conservation Objectives** Decrease depth to water table and improve riparian vegetation	**Conservation Objectives** Decrease depth to water table and improve riparian vegetation
Threats Catastrophic flood Improper grazing Exotic invasives Conifer encroachment	**Threats** Catastrophic flood Improper grazing Exotic invasives Conifer encroachment	**Threats** Catastrophic flood Improper grazing Exotic invasives Conifer encroachment	**Threats** Catastrophic flood Improper grazing Exotic invasives Conifer encroachment
Applicable CMs **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**	**Applicable CMs** **Listed by threat in Appendix A.**

Scientific Studies and Species Monitoring
Currently, species monitoring is limited to official lek counts by ODFW, which any landowner may participate in. Enrolled landowners may conduct lek counts when proper training for counts is acquired from ODFW.

Important information can be learned by landowners and agencies by closely monitoring sage-grouse populations on a relatively fine scale. Furthermore, scientific studies on sage-grouse in Lake County can help landowners and participants in this CCAA to more effectively implement conservation measures. Knowledge of the seasonal habitat use of sage-grouse, for example, will help landowners prioritize conservation measures in areas of known use, thus increasing the benefit to sage-grouse. Monitoring activities and scientific studies are encouraged in cooperation with appropriate agencies. Findings from monitoring and scientific studies may result in modification of existing CMs with concurrence by the landowner, FWS, and SWCD.

Monitoring Summaries, Evaluation, and Reporting

- Annual Monitoring – Each year, the SWCD will review all documentation and complete an on-site visit with each enrolled landowner. During the on-site visit the landowner and SWCD will view current habitat conditions and discuss results of the annual monitoring. During this visit the SWCD and the landowner will complete the Annual Grazing and Habitat Summary Form (Appendix D-3). Subsequent to the on-site visit and based on the discussion with the landowner during that visit, SWCD will ensure the completion of the Annual Grazing and Habitat Summary Form with any additional summary attached as needed. The completed form and summary will include progress toward implementing agreed upon CMs, any recommendations discussed and any agreed upon actions to be implemented. A copy of the completed form and summary will be sent to the enrolled landowner and the original will be retained with that landowner's SSP file.
- Trend Monitoring – This monitoring will be completed for each enrolled landowner every three to ten years, as scheduled in the SSP. The frequency of the trend monitoring within the time frame described is dependent upon habitat health and site stability, as determined by the baseline inventory and the CMs selected for the SSP. Each year, SWCD will review SSPs to determine which enrolled properties are due for long term monitoring (trend) that year. SWCD will then notify these landowners of the planned trend monitoring and with the landowner, will schedule a date to collect data.
- In the year following trend monitoring, the SWCD will evaluate the outcome of the applied CMs, comparing the initial (baseline) data to the current trend data to determine if the site habitat characteristics measured indicate movement toward or away from objectives. The SWCD will provide the landowner a trend monitoring report, which will include the results of trend monitoring, an evaluation of these results, and any recommendations for adaptive management.
- Each year, the SWCD will report the summary of results of all trend monitoring to the FWS via an annual report (see *Section 26. Reports*). The annual report will be submitted to FWS for review and approval and will include an analysis of all enrolled landowners of the overall changes to habitat quality, changes in ecological states, extent of threats addressed, and recommendations for adaptive management.

Use of Adaptive Management in the CCAA process
The results of monitoring efforts outlined above and addressed in the sample SSP/CI will be considered from an adaptive management perspective. Many of the potential CMs have been successfully implemented as part of other conservation efforts. However, outcomes of a few CMs may vary based upon local site conditions. Specifically, CMs with a vegetation rehabilitation component may have varying success based upon local soil type and climatic conditions such as rainfall timing and amount. For these CMs, careful monitoring both before and after implementation, along with the flexibility provided through adaptive management, will maximize the likelihood of success through possible changes to seed mixtures, rescheduling of rehabilitation efforts, timing of treatments, and other adjustments.

An adaptive, outcome-based approach (Walters 1986) will be used to allow management flexibility, recognizing CMs may need to be updated based on changing conditions or new information. Such an adaptive approach explicitly recognizes multiple factors (environmental conditions, biological processes) affect sage-grouse populations. Furthermore, the consequences of prescriptive CMs cannot be predicted with certainty. Therefore, the CCAA provides a framework for making objective decisions in the face of uncertainty. If the desired results of a CM are not achieved, the SWCD will work with the landowner to modify the CM or enact another CM in order to achieve the desired results. Adaptive management relies on an iterative cycle of monitoring, assessment, and decision making to clarify the relationships among the CMs and the response of habitat and, ultimately, sage-grouse abundance.

7. Authorities

SWCD Authorities
Oregon Revised Statute (ORS) 190.110 gives Lakeview SWCD statutory authority to enter into agreements. Additional statutory authority is given to carry out district responsibilities under ORS 568.550:

1. The board of directors of a soil and water conservation district has the following powers:
   (d) To enter into written agreements with and, within the limits of appropriations duly made available to the board by law, to furnish financial or other aid to any governmental or nongovernmental agency or any owner or occupier of lands within the district, for the purpose of:
   (A) Carrying on within the district soil erosion control and prevention operations, water quality improvement, watershed enhancement and improvement, fish and wildlife habitat management activities and other natural resource management activities; or
   (B) Carrying out district responsibilities under ORS 541.898, 568.225, 568.550 and 568.900 to 568.933.

FWS Authorities
Sections 2, 7, and 10 of the ESA of 1973, as amended (Act, 16 U.S.C. 1531 *et seq.*), allow the FWS to enter into this CCAA. Section 2 of the ESA states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is key to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7 of the ESA requires the FWS to review programs it administers and utilize such programs in furtherance of the purposes of the ESA. The purposes of the ESA are "to provide a

means whereby the ecosystems upon which endangered species and threatened species depend may be conserved," and "to provide a program for the conservation of such endangered species and threatened species ..." "Conserve" is defined in section 3(3) of the ESA and means "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."

Section 10 of the ESA describes permits issued under the ESA, exempting certain prohibitions under Section 9 of the ESA. Section 10(a)(1)(A) of the ESA authorizes the issuance of EOS permits to "enhance the survival" of a listed species. Enhancement means the permitted activities benefit species in the wild. By entering into a CCAA, the FWS is utilizing its Candidate Conservation Programs for further conservation of the Nation's fish and wildlife, consistent with the FWS's "Candidate Conservation Agreement with Assurances Final Policy" (64 FR 32726; June 17, 1999). The conservation goal of this programmatic CCAA is to maintain and enhance sage-grouse on private lands within the range of the species in Lake County, Oregon. Upon approval of this Programmatic CCAA the FWS will issue an EOS permit to the Lakeview SWCD. Landowners will meet this conservation goal by implementing agreed upon CMs in individual SSPs to address threats to the species, and will receive regulatory certainty from the FWS concerning land use restrictions that might otherwise apply, should this species be listed under the ESA.

Even if Site Specific Plans (SSPs) are implemented under this programmatic CCAA, the FWS cannot guarantee listing will never be necessary for all or part of the sage-grouse range. It is important to note that the FWS's directive to, "preclude or remove any need to list" is based upon the removal of threats and the stabilization or improvement of the species' status. The decision to list or not to list sage-grouse under the ESA is a regulatory process independent of a CCAA or a Candidate Conservation Agreement (CCA). The FWS will evaluate actions and successes of this CCAA in accordance with the FWS Policy for Evaluation of Conservation Efforts (PECE) during the listing determination process, as required under section 4(b)(2)(A) of the ESA. The FWS will consider the contribution to conservation made by these agreements in a "five-factor analysis" which is used to make any species listing determination (50 CFR Chapter IV, Federal Register Vol. 63, No. 60, March 2003).

The five factors include:

- The present or threatened destruction, modification, or curtailment of the species' habitat or range
- Overutilization of the species for commercial, recreational, scientific, or educational purposes
- Disease or predation
- The inadequacy of existing regulatory mechanisms
- Other natural or man-made factors affecting the species' continued existence

8. Covered Area

The lands eligible for enrollment under this CCAA are private lands within sage-grouse habitat in Lake County, Oregon (See Figure 6. Covered area map). The covered area includes both currently occupied habitat as well as habitat that may become occupied by sage-grouse in the

future. Ranches that have their base of operations in Lake County may also include portions of their ranch that are located in adjacent counties. If ranch base lands (i.e. ranch headquarters, agricultural production, meadows) are within Lake County, it may be reasonable to include contiguous pastures in adjacent counties for inclusion in this CCAA. The authorities granted to Soil and Water Conservation Districts in Oregon Revised Statutes (see *Section 7. Authorities*) allow for private lands in counties adjacent to Lake County to be included in this programmatic CCAA. The process that would allow Lakeview SWCD the jurisdiction to work with landowners who have property in both counties is: upon a joint request from Lakeview SWCD and the affected landowner, the neighboring SWCD may approve the request and pass a resolution.

For purposes of analysis, FWS analyzed PPH and PGH as representing the best current estimate of sage-grouse habitat. However, private lands within the covered area that are not currently designated as PPH or PGH but have the characteristics of sage-grouse habitat or have known sage-grouse occupancy may be included in the agreement.

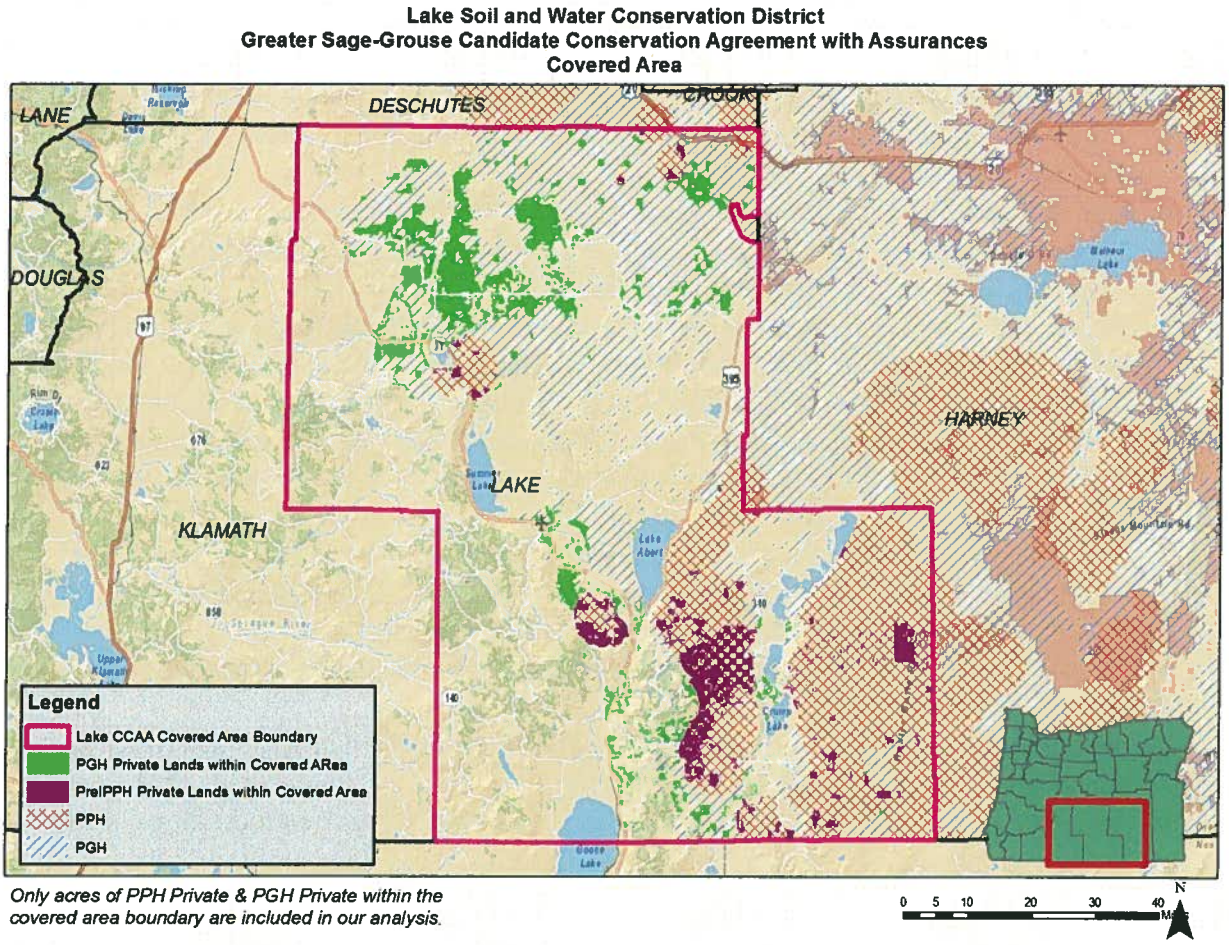
In Lake County, there are over 2.5 million acres of potential sage-grouse habitat. See table below for a breakdown of these acreages in Lake County:

Table 1: Acreage breakdown for covered area

Landowner	*PGH within Covered Area*	*PPH within Covered Area*	*Total*
Private Acres within Covered Area	283,439	115,185	***398,624***
BLM in Lake County	1,106,437	649,255	***1,755,692***
*Other**	92,804	270,824	***363628***
Totals	***1,482,680***	***1,035,264***	***2,517,944***

**State lands, Forest Service, Bureau of Indian Affairs, Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Department of Agriculture, Undetermined*

Figure 6: Covered area map



Only acres of PPH Private & PGH Private within the covered area boundary are included in our analysis.

9. Responsibilities of the Parties

Landowners will:

- Assist in the development of mutually agreeable SSPs in cooperation with the SWCD and FWS and cosign the SSP/CI document upon receiving a Letter of Concurrence from FWS
- Implement all agreed upon CMs in their SSP
- The property owner agrees to allow SWCD and FWS employees or its agents, with reasonable prior notice (at least 48 hours) to enter the enrolled properties to complete agreed upon activities necessary to implement the SSP
- Continue current management practices that conserve sage-grouse and its habitats as identified in the enrollment process
- Avoid impacts to populations and individual sage-grouse present on their enrolled lands consistent with this SSP
- Record dates, locations, and numbers of sage-grouse observed on their enrolled lands to be included in the annual report
- Record new observations of noxious weeds that they incidentally find
- Report observed mortalities of sage-grouse to the SWCD within 48 hours
- Cooperate and assist with annual and long term monitoring activities and other reporting requirements identified in the SSP

The SWCD will:

- Conduct public outreach and education to encourage enrollment of landowners in the CCAA through Site Specific Plans (SSP)/Certificates of Inclusion (CIs)
- Enroll landowners according to the steps outlined in *Section 3. Application and Enrollment Process*
- Use the mutually agreed upon tracking system to protect landowner privacy
- Prepare and review SSPs/CIs for accuracy and cosign the SSP/CI document upon receiving a Letter of Concurrence from FWS
- Assist in the implementation of conservation measures, monitoring, or other measures if agreed upon during the development of the SSP by the landowner, SWCD, and FWS
- Ensure terms and conditions included in the SSPs are being implemented as agreed upon
- Collect and evaluate monitoring data to determine if CMs are providing the desired habitat benefit and provide a report of monitoring results to the landowner and copies of summary reports to FWS
- Provide technical assistance to aid enrolled landowners in implementing the CMs
- Work with enrolled landowners and other agencies (e.g., OSU Extension, NRCS) to facilitate appropriate rangeland monitoring and/or training
- Provide support and assist in obtaining funding from other sources for the implementation of CMs
- Monitor and report projects (e.g. implementation of CMs) in order to determine success and adaptations needed
- Immediately report to FWS and ODFW any observed or reported mortalities of sage-grouse
- Meet annually with FWS to present annual and trend monitoring information
- Protect, to the maximum extent available under federal, state, and local laws, against the release or disclosure of all confidential personal and/or commercial information provided by enrolled landowners and collected, gathered, prepared, organized, summarized, stored, and distributed for the purposes of developing and implementing this CCAA
- Provide notice to enrolled landowners when a request for public records concerning this CCAA is made, and allow the enrolled landowner to prepare a notification requesting that any confidential personal and/or commercial information be withheld

The U.S. Fish and Wildlife Service will:

- Provide assistance in coordinating development and implementation of this CCAA
- Review each SSP[4] and provide a Letter of Concurrence within 60 days if all issuance criteria are met for all SSPs completed under the EOS permit
- Provide technical assistance to aid the landowners in implementing the CMs
- Review monitoring data for consistency with CCAA objectives to determine if conservation measures are providing the desired benefit to sage-grouse
- Serve as an advisor, providing expertise on the conservation of sage-grouse

[4] FWS will participate in the development of up to the first five SSPs that represent the diversity of habitat in Lake County, including site visits, baseline inventory, analysis or other aspects of plan development.

- Assist in the implementation of conservation measures, monitoring, or other measures if agreed upon during the development of the SSP by landowner, SWCD, and FWS
- Provide FWS funding, to the extent funding is available consistent with *Section 23. Availability of Funds*, of the programmatic CCAA, to support implementation of this CCAA and associated SSPs/CIs
- Provide support and assist in obtaining funding from other sources for the implementation of CMs
- Conduct outreach and public education efforts to promote the conservation of sage-grouse
- Immediately report to ODFW any observed or reported mortalities of sage-grouse
- Protect, to the maximum extent permissible under federal laws, against the disclosure of all confidential personal and/or commercial information provided by enrolled landowners and collected, gathered, prepared, organized, summarized, stored, and distributed for the purposes of developing and implementing this CCAA
- Provide notice to SWCD when a Freedom of Information Act (FOIA) request for records concerning this CCAA is made, and allow the SWCD to prepare a notification requesting that any confidential personal and/or commercial information be withheld

10. Covered Activities

The term "covered activities" refers to those activities carried out by the enrolled landowner or their authorized representative on enrolled lands that may result in authorized incidental take of covered species (e.g. sage-grouse) consistent with the EOS permit and CCAA during the term of the SSP/CI. In this case, covered activities include:

- Ongoing and planned rangeland practices listed below
- Conservation measures (Appendix A) and changed circumstances conservation measures (Section 15)
- Limited use of specific herbicides as described in Appendix E
- Inventory and monitoring activities identified in the CCAA as well as Appendix D

Ongoing and planned rangeland practices

Activities that are covered by this CCAA and the associated EOS permit include most activities commonly practiced on rangelands. However, as complex as rangelands are, so are the landowners' uses that depend on these for their livelihoods. If activities not included below are occurring on lands to be enrolled, the FWS will determine if they are consistent with the programmatic CCAA and permit issuance criteria as well as whether or not additional NEPA analysis is needed to cover them. Activities that meet all required standards may be considered for inclusion in individual SSPs, provided that the effect of including such activities does not significantly change the CCAA's effect on the environment. Rangeland practices were divided into five categories: rangeland treatments, livestock management, recreation, farm operations, and development; and are described in more detail below and in association with the conservation measures in Appendix A.

Rangeland Treatments

- Establishing and maintaining fire breaks or green strips of fire resilient vegetation

- Limited sagebrush removal in areas where the sagebrush canopy cover is too high (>25%) for the development of understory grasses and forbs if they are determined to be limited
- Seeding or plugs with perennial grasses, forbs, and sagebrush to enhance both sage-grouse habitat and livestock forage
- Juniper and conifer removal to enhance sage-grouse habitat
- Weed control (mechanical, herbicides, biological agents)
- General stewardship of rangelands

Livestock Management
- Grazing of forage
- Construction, placement, and maintenance of fences, ponds, stock-tanks and other watering sources
- Feeding hay and dietary supplements in pastures
- Establishing and maintaining remote camps
- Gathering, moving, trailing, temporary penning, rounding-up and shipping livestock;
- Calving and branding operations
- Disposal of dead animals
- General stewardship and animal husbandry practices

Recreation
- Legal hunting and fishing with proper licensing and tags through ODFW (hunting of sage-grouse is not a covered activity under the CCAA)
- Horseback riding
- Camping and hiking
- Use of recreational vehicles both on and off established roads (as may further be defined in individual site specific plans)

Farm Operations
- Cultivation of existing fields, including planting, cultivation and harvesting crops
- Mechanical treatment of fields and pastures and application of soil amendments
- Irrigation by flooding or sprinklers
- Burning to control weeds within fields and along ditch banks
- Maintenance of houses, outbuildings, fences and corrals, irrigation equipment, and roads

Developments
- Existing ranch infrastructure and fences
- New buildings associated with ranch operations (e.g. hay barn, ranch house)
- Facilities such as new fences, roads, and power lines necessary for ranch operations

<u>Stipulations on Developments in this CCAA</u>
- If proposed new buildings and facilities impact existing sage-grouse habitat the proposal will need to include internal mitigation that will ensure enrolled lands will still meet the CCAA standard. These actions must be completed, or funded and scheduled prior to any loss of habitat quality or quantity associated with the new construction. The type of planned development, scale in relation to enrolled acres, and location relative to

important areas of sage-grouse use, present habitat condition, and conformance with relevant regulatory policies will be taken into account when developing the SSP.

- Developments that are not associated with the immediate operations of the ranch (e.g. multiple unit residential development or subdivisions, resort developments, energy developments) are not covered activities under this agreement.

11. Anticipated Incidental Take

Take[5] may occur as a result of covered activities or implementation of conservation measures. Take that results from, but is not the purpose of, carrying out an otherwise lawful activity such as rangeland management is known as incidental take. Incidental take will likely occur sporadically on enrolled lands and is not expected to nullify the conservation benefits that are described under this CCAA.

Types of Incidental Take

We considered three primary types of incidental take: (1) injury or death; (2) harm in the form of habitat fragmentation, loss, or degradation and (3) harassment in the form of human activities that significantly disrupt normal behavioral patterns such as breeding, feeding, or sheltering. For each type of take we describe the associated covered activities and conservation measures that will minimize the take.

Injury or death

- Haying and other farming operations that use heavy equipment can directly kill or injure adult and juvenile sage-grouse especially brooding females and their young or eggs. If only the female is killed or injured any young or eggs are likely to die due to lack of parental care. The risk of this is low because areas that are under cultivation are typically not suitable sage-grouse habitat however margins of fields that have sagebrush habitat nearby may be used for nesting and foraging. These impacts will be minimized by implementation of practices identified during site-specific plan development (Appendix B, Sections I and K).
- Fences used for livestock management, especially those in certain high-risk locations can cause direct mortality to sage-grouse from collision (Beck and Mitchell 2000; Connelly et al. 2004; Crawford et al. 2004; Cagney et al. 2010) The risk of collision with fences will be minimized by removing unnecessary fences; and marking fences in high-risk locations to make them more visible to sage-grouse (see CM 28 and 29). Vertical structures such as telephone and power lines and poles serve as raptor perches and therefore can indirectly contribute to injury and death to sage-grouse from avian predators. This risk will be minimized by removing unnecessary structures, undergrounding lines when feasible, and limiting new construction (See CM 2 and 5).
- Sage grouse can drown in livestock water tanks when they use them as a water source. This risk will be minimized by properly equipping stock-tanks with escape ramps (See CM 27).
- Standing water sources including stock-tanks and ponds managed for livestock watering can attract mosquitoes and increase the risk of West Nile virus outbreaks (USFWS 2010). West

[5] Take is defined in the ESA to include a number of activities including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm includes significant habitat modification or degradation where it kills or injures sage-grouse by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Nile virus is known to injure or kill sage-grouse. This risk will be reduced by minimizing unnecessary standing water sources (see CM 56).

- Use of the herbicides listed in Appendix E are not known to directly injure or kill sage-grouse, however there have been limited studies that are specific to sage-grouse. The risk of mortality associated with herbicide use will be minimized by only using approved herbicides consistent with Appendix E, implementing all best management practices and applicable CMs on enrolled lands (See CM 34, 40, and 46). If it is found that these herbicides do injure or kill sage-grouse their use may be discontinued as a covered activity consistent with changed circumstances provisions (See CCCM16).

Harm:

- Construction of new buildings, fences, powerlines for ranch operations are likely to decrease habitat quantity and/or quality. Any actions of this type will be carefully designed to minimize impacts and internal mitigation will be required to ensure that the impact of these actions are mitigated in order to meet the CCAA standard and meet the objectives of CM 1 (See CM 1, 2, 4, 5).
- Removing sagebrush along roadsides to create firebreaks can decrease the amount of this habitat available to sage-grouse. However, the benefits of firebreaks outweigh the harm. Firebreaks can prevent large tracts of sage-grouse habitat from being degraded by fire or may serve as an anchor point to effectively fight fire from. Risk will be minimized by limiting size of firebreaks (See CM 6).
- Rangeland treatments may temporarily reduce sagebrush cover in order to inter-seed with desired grasses and forbs to improve sage-grouse habitat, resulting in a short term loss but long term gain in sage-grouse habitat This risk will be minimized by limiting size of treatment area, consideration of how treatments will affect overall landscape for sage-grouse and assessment of current vegetation condition or other effective measure as identified. (See CM 43-48).
- Improperly managed livestock grazing can result in decreased beneficial grasses and forbs in nesting and brood-rearing habitat (Hagen et al. 2007; Gregg et al. 1994). There are several CMs that address impacts of livestock grazing and landowners will be required to modify grazing practices if the threat of "improperly managed livestock grazing" is occurring on lands to be enrolled. This risk will be further minimized with annual monitoring and reporting of utilization on enrolled lands as well as adapting to drought or other environmental factors that may increase or decrease forage (See CM 19-30).
- Concentration of livestock that results in compaction of soils and increased bare ground, can degrade nesting and brood-rearing habitat and increase the risk of establishing invasive weeds (Mack and Thompson 1982; Miller and Eddleman 2000). This risk will be minimized if the threat is identified during site specific plan development by changing timing, intensity, and duration of livestock grazing in areas at risk or other effective measure as identified.(See CM 19-30).

Harassment

- Due to seasonal accessibility or weather issues, rangeland treatments such as juniper removal from sagebrush habitat may need to be conducted when sage-grouse are nesting or otherwise utilizing these areas. If so this would cause some temporary harassment of sage-grouse. However without treatment, juniper encroachment can make habitat unsuitable for sage-

grouse. Harassment will be minimized through careful scheduling of treatments. (See CM 15)

- Livestock management activities such as moving cattle to different areas may cause sage-grouse to flush or otherwise disrupt their behavior. In the majority of instances this disturbance is expected to be of very short duration such that it does not rise to the level of take. (See CM 20-21)
- Farm operations including the use of heavy equipment, vehicles, noise from generators or windmill powered pumps may cause short-term disturbances to sage-grouse or in the case of ongoing noise and frequent activities, it may cause sage-grouse to avoid otherwise usable habitat. These impacts are expected to be fairly localized as birds using the margins of fields can easily retreat to sagebrush from machinery noise. When economically feasible new and existing pumps would be converted to solar power to reduce noise and sage-grouse disturbance. (See CM 4)
- Recreational activities in the vicinity of active leks may cause birds to flush or abandon. This risk will be minimized by limiting un-necessary access during certain times of the year when sage-grouse are using enrolled lands (for example: lekking, wintering or brood-rearing) as applicable. (See CM 53)
- Development activities associated with construction of new buildings, fences, power lines for ranch operations can cause harassment of sage-grouse. Risk of disturbance from these activities can be minimized by timing them outside of the breeding and nesting season. (See CM 20-21)

12. Authorized Take

Authorization of incidental take is provided in the EOS permit issued by the FWS, if sage-grouse is listed. This authorization is limited to incidental take resulting from covered activities and implementation of conservation measures identified in the CCAA/SSP or EOS Permit. The amount of authorized incidental take from covered activities, if 100% of the covered area is enrolled, would be an average of 25 birds per year based on a rolling 5-year average such that if take is high in one year, it will not exceed authorized take unless the 5-year average annual take exceeds authorized take. If less than 100% of the area is enrolled under the CCAA, then the authorized take would be proportionally less. If the species is listed, take will be authorized based on the amount of acres of PPH and PGH enrolled in the CCAA. Statewide population estimates as well as the amount and types of sage-grouse habitat (PPH and PGH)(Table 3, Appendix F) available under the Lake SWCD CCAA were used to come up with this level of take.

Table 2: Estimated Take Calculation – *Assuming 100% of lands are enrolled.**

Take Calculation:	Habitat Type	Acres Impacted	Birds Exposed	Rate of Injury or Mortality	Annual Take
Rangeland Treatments	5% of PGH	14,172	4	3.59%	0.15
	5% of PPH	5,759	20	3.59%	0.70
Livestock Management					
Nest Abandonment	PGH (5%)		14	3.59%	0.51
(60% of Birds Exposed = 283)	PPH (95%)		273	3.59%	9.78
Nest Trampling	PGH (5%)		14	1.11%	0.16
(60% of Birds Exposed = 283)	PPH (95%)		273	1.11%	3.03
Farm Operations					
Haying	PGH	37,423	11	0.95%	0.11
	PPH	1,087	4	0.95%	0.04
Development					
Fences (high risk marked)	PGH		86	1.62%	1.39
	PPH		392	1.62%	6.34
Additional Authorized Take .5%	100% of PGH	283,439	86	0.50%	0.43
	100% of PPH	115,185	392	0.50%	1.96
Estimated Total authorized Annual Take					**25**
Annual Take Percentage					**5.2%**

*For details on how the numbers above were calculated see Appendix F.

Impacts of the Taking

Authorizing an average annual take of approximately 5% of the estimated statewide spring total sage-grouse population will not adversely affect populations (Sedinger 2010; Connelly 2000; ODFW 2010). The authorized take associated with this CCAA (~ 5%), combined with ODFW's actual (3%) or allowed (5%) harvest rates (ODFW 2011) could account for an average 8-10% annual loss of the sage-grouse population in areas that are under this CCAA and where hunting of sage-grouse occurs. Cumulative impacts of harvest on sage-grouse populations in Oregon are evaluated annually by ODFW. A 8-10% loss is within range-wide sage-grouse management guidelines that recommend a harvest rate of 10% or less for healthy sage-grouse populations (Connelly et al. 2000), and below recently published peer-reviewed science for Colorado and Nevada, which found "at harvest rates <11% harvest is unlikely to have an important influence on local population dynamics of sage-grouse" (Sedinger et al. 2010).

The authorized amount of take may be adjusted if the statewide 10-year minimum spring breeding population average changes by more than 10%. While the total amount of authorized take will be proportional to the amount of enrolled properties, take will be counted against the whole permit rather than individual properties in order to allow more management flexibility.

Monitoring and Evaluation of Take

Monitoring of take will be addressed through the monitoring strategies associated with the SSP/CI. These include monitoring of the extent of occupied habitat and habitat condition. Landowners will be required through their SSP/CI to report mortality from incidental take to the SWCD, who will report to the FWS as required in *Section 9. Responsibilities of the Parties.* While the total amount of authorized take will be proportional to the amount of enrolled properties, take will not be allotted to individual landowners. All take that occurs will be counted against the whole permit rather than individual properties in order to allow more management flexibility. Evaluation of take will be based on a rolling 5-year average such that if take is high in one year it will not exceed authorized take unless the 5-year average exceeds the amount of take permitted.

13. Expected Benefits

Benefits to sage-grouse habitat in Lake County are expected as a result of implemented SSPs developed under this agreement. The CMs identified in this CCAA are expected to benefit sage-grouse through maintenance, enhancement, and rehabilitation of sage-grouse habitats by reducing threats causing direct and indirect mortality. Enhanced survival of sage-grouse is the objective of this agreement and implementation of the CMs identified in this CCAA is expected to compensate any estimated take. Private rangeland management can be complementary to sage-grouse habitat; livestock management was not a primary contributor to the 2010 "warranted" determination. In the FWS 2010 listing decision, the FWS determined the act of grazing was not the specific threat affecting the species, but that some aspects of livestock management have the potential to influence habitat loss, fragmentation, and degradation.

The sage-grouse is affected rangewide by a variety of threats, such as habitat fragmentation from wildfire, invasive species, conifer encroachment, energy and other types of development as well as predation, recreation, sagebrush conversion and other threats. This CCAA addresses a subset of these threats on a portion of the species range, the occupied sage-grouse habitat of Lake County, Oregon. For this CCAA, the conservation measures must reduce all the threats within their control on enrolled lands. If actions identified in species conservation strategies[6] were undertaken on all necessary properties rangewide, the declining trend would be reversed and there would be no need to list. This level of conservation benefit is more than just a net conservation benefit to recovery; it is a reversal in the species trend - if it could be replicated on all necessary properties. Thus, it is more than just an improvement in status on that property, it is significant reduction in threats.

Some specific benefits to sage-grouse habitat provided by rangeland management activities implemented in accordance with this CCAA include:

- maintenance of large tracts of un-fragmented and undeveloped land;
- managing fuels to help reduce the risk of catastrophic wildfires and associated fragmentation;
- potentially increasing rangeland plant diversity, including perennial grasses and forbs;

[6] Species Conservation Strategies have been developed rangewide by state and federal agencies e.g. ODFW's 2011 Strategy other state sage-grouse plans, the National Technical Team Report (NTT), The Conservation Objectives Team Report (COT), and others.

- weed and invasive species management;
- maintenance and enhancement of healthy springs and seeps (Beck and Mitchell 2000; Connelly et al. 2004; Crawford et al. 2004; Cagney et al. 2010);
- contributing to meeting the strategies and objectives of ODFW's Strategy (Hagen 2011) that are relevant to enrolled private lands; and
- ranking preference for obtaining resources from federal, state, and local programs for sage-grouse habitat improvement (e.g. NRCS Sage Grouse Initiative, FWS Partners, OWEB).

Enrolled landowners agree to manage their lands in a manner that provides a benefit to sage-grouse. Under an SSP, enrolled lands may be suitable for appropriate mitigation actions or conservation banking from off-site development (if and when available). As FWS, SWCD, and other cooperators become aware of any mitigation opportunities in Oregon or nationally, they will help direct such opportunities to enrolled landowners. Mitigation actions or conservation banks for off-site or on-site development may occur, but will have a separate agreement with independent requirements (for information about internal mitigation - mitigation within a landowner's enrolled property- see *Development Subsection in Section 10. Covered Activities*).

Additionally, the assurances conferred under the CCAA program by section 10(a)(1)(A) EOS permits provide economic stability of current land and livestock management activities on enrolled lands. Since private landowners control substantial acreage of important habitat for sage-grouse, implementation of CMs by enrolled landowners throughout Lake County could potentially maintain or improve over 1 million acres of sage-grouse habitat, county wide. The FWS believes if similar conservation measures that address threats to sage-grouse were implemented throughout sage-grouse range; the need to list sage-grouse would likely be precluded.

14. Assurances Provided

Through this CCAA, the FWS provides the SWCD and participating landowners enrolled through SSPs/CIs with assurances that no additional conservation measures or additional land, water, or resource use restrictions, beyond those voluntarily agreed to and described in the Conservation Measures (Appendix A) of this CCAA and associated SSPs/CIs will be required should sage-grouse become listed as a threatened or endangered species in the future, provided that the SSPs are being implemented as agreed upon (the ONLY exception is when an unforeseen circumstance occurs -see *Section 16. Unforeseen Circumstances*). These assurances will be authorized with the issuance of an EOS permit under ESA section 10(a)(l)(A).

15. Changed Circumstances

Changed circumstances are changes affecting sage-grouse or the geographic area covered by this CCAA that can reasonably be anticipated and can be planned for. This CCAA has identified wildfire, drought, West Nile virus, catastrophic flooding, habitat fragmentation from development, and herbicide use as potential changed circumstances that are expected to occur over the 30-year life of the permit.

If it is determined by the landowner, SWCD, or FWS that a changed circumstance(s) exist, the landowner will implement the appropriate changed circumstance conservation measures

(CCCMs) or a mutually agreed upon approach to address the additional threat or threats created by the changed circumstance(s). CCCMs will be adopted to meet the CCAA standard on enrolled lands. All modifications, changes or additions to the SSP will be mutually agreed upon by the landowner, SWCD and FWS. If a changed circumstance(s) occurs, the SWCD will notify the FWS of the enrolled lands affected, the impact of the changed circumstance(s), and the CCCM(s) that will be implemented to address the changed circumstance(s), the FWS will provide a letter of concurrence (within 30 days) to the SWCD approving the CCCMs if the CCCM's will allow enrolled lands to continue to meet the CCAA standard. The following list provides possible conservation measures to address threats created by a changed circumstance(s). Conservation Measures not identified on this list may be developed with landowner agreement and with approval of FWS.

Wildfire - Wildfire impacts affecting landowners enrolled with SSPs/CIs will be handled on a case-by-case basis. SWCD will work with the individual landowners to determine the management practices to be applied, which may include:

CCCM 1. SWCD will evaluate with the landowner the need for rehabilitation based on pre-fire plant community health, fire intensity, and proximity to invasive annual species (e.g. cheatgrass, medusahead). SWCD will provide a written summary to the landowner of their evaluation and need for active rehabilitation or for natural recovery.

CCCM 2. Landowner will allow for natural vegetation recovery where healthy pre-fire plant communities exist and observed fire intensity indicates natural recovery and proximity of invasive species are not a concern. Timing of livestock grazing following wildfire will depend on response of desirable vegetation. SWCD and the landowner will identify and set quantifiable objectives for post-fire vegetation recovery based on pre-fire monitoring data, returning livestock grazing once objectives have been met.

CCCM 3. Following wildfire, landowner will participate in rehabilitation where natural recovery is unlikely, due to fire intensity and/or proximity to invasive annual species, and where feasible, practicable, and if adequate funding is available. Where annual grasses are prevalent, plant aggressive fire-resistant perennial species to stabilize the site and allow for long term recovery of sagebrush and other native species.

CCCM 4. Landowner will implement, as needed, CMs listed under "Threat: Exotic Annual Invasion" in Appendix A.

CCCM 5. SWCD will conduct post-treatment monitoring to determine if rehabilitation techniques have been successful or if implementation changes are indicated (*see Section 6. Inventory and Monitoring Protocols*).

CCCM 6. Landowners will replace fence or temporarily fence where needed to protect recovering habitat post-fire, and, where appropriate, mark these fences with anti-strike markers or other agreed upon visual markers, as described by CM 30 in Appendix A.

Drought - When rangeland plants are deprived of precipitation, it affects the plant's growth cycle, volume of growth, and fruition. When drought conditions exist, annual monitoring will be

used to determine site-specific recommendations. Drought is site specific and is typically considered to occur when two growing seasons of precipitation are below the long term average, affecting plant life cycles as described above. Prolonged drought is when the conditions described above persist for three or more growing seasons.

Variation in precipitation is common throughout the sage-grouse range. Annual rangeland monitoring and CMs on enrolled lands are expected to address year-to-year variations in precipitation. Droughts in important sage-grouse habitats may create conditions reducing seasonally available habitat resulting in changed circumstances. In some instances, failure to make timely adjustments in livestock use during drought has resulted in limited plant regrowth, overuse in wet meadows and riparian areas, and has negated gains in rangeland conditions made during higher-precipitation years (Thurow and Taylor 1999).

In the event of moderate to extreme drought, as determined by National Oceanic and Atmospheric Administration (NOAA)[7] or if annual monitoring indicates drought conditions, the SWCD will meet with enrolled landowners to evaluate the drought condition effect on sage-grouse habitat and then consult with FWS. The following CCCM is intended to address the changed circumstance:

CCCM 7. Utilize adaptive management to adjust levels and season of livestock grazing during drought conditions to maintain suitable sage-grouse habitat using the site specific conditions as determined in the baseline and subsequent trend monitoring. These adaptive management measures may include:

a. Implement management changes, such as grazing rest, deferment, rotation, or other changes designed to maintain long term vegetation health for sage-grouse habitat.
b. Develop grass banks for use during drought conditions.
c. Develop additional water sources for livestock and sage-grouse.
d. Employ other vegetation management to ensure long term plant community health.

West Nile virus-WNv has spread to eastern Oregon. In 2006, a die-off of at least 60 sage-grouse was documented near Burns Junction, and two other sage-grouse deaths were confirmed from WNv near Crane and Jordan Valley. Of the birds found dead, 3 provided suitable tissue samples and all were confirmed to be infected with WNv. No other significant mortalities have been documented in Oregon since 2006. However, there is the potential for an outbreak among sage-grouse, which are susceptible to the disease and suffer a high rate of mortality when infected. Currently, sage-grouse show low to no resistance to WNv, and mortality is assumed to be 100% (Naugle et al. 2004).

If outbreak occurs, as identified by state health officials[8] or other appropriate regulatory agency, the landowner should implement the following CCCMs, as appropriate:

CCCM 8. Report observations of dead or sick sage-grouse or other bird deaths that could be

[7] For updated drought conditions visit the following link: http://www.ncdc.noaa.gov/sotc/drought/2012/8
[8] Website/link of the health authorities that track West Nile virus in Oregon: http://public.health.oregon.gov/DISEASESCONDITIONS/DISEASESAZ/WESTNILEVIRUS/Pages/survey.aspx

attributed to disease or parasites to SWCD or FWS within 48 hours.

CCCM 9. Cooperate with responsible agencies to implement feasible mosquito control, which may include:

a. Minimize unnecessary standing water that could be used as mosquito breeding grounds within sage-grouse habitat
b. Use larvicides in areas that mosquito habitat cannot be reduced
c. Evaluate the effectiveness of spraying for adult mosquitoes, and consider using mosquito specific control measures

Habitat fragmentation and disturbance resulting from development -Impacts can include both direct loss of habitat from agricultural conversion or sagebrush removal and habitat fragmentation by roads, pipelines, power lines, wind turbines, and other infrastructure. Accompanying noise disturbance can also reduce lek attendance and nesting success.

In the event of development on, or adjacent to, lands enrolled under this programmatic CCAA, in which the landowner does not have the legal ability (e.g. split estate mineral rights, noise disturbance from adjacent development) to exclude such development, the following measures may apply:

CCCM 10. The SWCD, FWS and the landowner will evaluate the direct and indirect impacts to determine if the impacts will negate the intended benefits of the conservation measures being implemented or planned to be implemented on the enrolled lands.

CCCM 11. If these impacts are found to negate the CMs on some portion of the enrolled lands the landowner, SWCD and FWS will meet and develop alternative, mutually agreed upon conservation measures including, but not limited to, alternate CM implementation location within the enrolled lands.

In the event that planned development, on lands that the landowner chose not to enroll in the CCAA but *does* have legal control of, is likely to affect sage-grouse and their habitats on the landowner's enrolled lands, the following CCCMs may apply:

CCCM 12. The landowner, SWCD, and FWS will evaluate the direct and indirect impacts to determine if the impacts are likely to negate the intended benefits of the conservation measures being implemented or planned to be implemented on the enrolled lands.

CCCM 13. If these impacts are found to negate the CMs to the extent that the CCAA standard is no longer being met, the landowner will work with the SWCD and FWS and develop an alternate approach for the planned development or for the enrolled lands to maintain the CCAA standard and landowner enrollment. If an agreement cannot be reached and the CCAA standard is no longer being met, the enrolled landowner or the SWCD or FWS can terminate the SSP and associated assurances provided under the CI.

Catastrophic Flooding –Excessive runoff resulting from catastrophic hydrological events (e.g. rain on snow event) are associated with mass-wasting of hill slopes, damage to river banks, and downstream flooding. These events have the capability to drastically change stream hydrology and vegetative composition of riparian corridors. These events are often associated with a 100-

year flood cycle.

CCCM 14. Utilize adaptive management based on evaluation of degree of flood impact. Adjust levels and season of livestock grazing after a catastrophic flood event to maintain and/or rehabilitate suitable sage-grouse habitat.

CCCM 15. Re-evaluate stream segments to identify critical areas and changes in ecological state and identify measures that could enhance stream function.

Herbicide Use – Currently, information is lacking on the direct effects of herbicides to sage-grouse; however, research on sage-grouse is ongoing and published studies and other new information often become available. If new research or other information indicates that one or more of the covered herbicides causes significant adverse effects to sage-grouse that outweigh the benefits of treating their habitats, the following CCCM may be implemented.

CCCM 16. The Service can remove those herbicides (or group of herbicides) from the covered list; or if feasible require implementation of additional best management practices with SWCD and/or enrolled landowners to avoid and minimize take.

16. Changed Circumstances Not Provided for in the CCAA

If FWS determines that additional conservation measures not provided for in the CCAA are necessary to respond to the changed circumstances, the FWS will not require any additional CMs in the CCAA or the SSP/CI without the consent of the enrolled landowner, provided the SSP is being properly implemented. The SWCD, FWS, and/or the landowner, if he or she desires, will assist by seeking funding to implement the agreed upon CMs.

17. Unforeseen Circumstances

Unforeseen circumstances are changes in circumstances affecting sage-grouse or the geographic area covered by the CCAA that could not reasonably have been anticipated by the landowner, SWCD and the FWS at the time of the CCAA's development, and result in a substantial and adverse change in the status of the sage-grouse.

The only situation where modification of conservation measures can be required by FWS is an unforeseen circumstance. To respond to unforeseen circumstances, the FWS may require modified or additional conservation measures by the landowner, but only if such measures maintain the original terms of the CCAA/SSP. The FWS will consider whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of sage-grouse in the wild. Additional conservation measures will not involve the commitment of additional land, water, or landowner funds, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA without the consent of the landowner, provided the SSP/CI is being properly implemented. Funding for conservation measures warranted under this section will be sought by FWS, SWCD, and/or other partners, including the landowner if he or she desires.

The FWS will have the burden of demonstrating that unforeseen circumstances exist, using information that is both reliable and credible and incorporates the best scientific and

commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of sage-grouse. The FWS will consider, but not be limited to, the following factors:

- Size of the current range of sage-grouse
- Percentage of range adversely affected within the CCAA
- Percentage of range conserved by the CCAA
- Ecological significance of that portion of the range affected by the CCAA
- Level of knowledge about sage-grouse and the degree of specificity of the species' conservation program under the CCAA

18. Duration of CCAA, EOS Permit, and SSP/CI

This programmatic CCAA will be in effect for 30 years following its approval and signing by the FWS. The section 10(a)(1)(A) EOS permit authorizing take of the species also will have a term of 30 years from the effective date of the permit. This duration should be sufficient to determine that the CMs are benefiting the sage-grouse. SSPs/CIs for enrolled landowners will be in effect for up to 30 years (or the amount of years remaining on the EOS permit for the programmatic CCAA) following FWS approval through a Letter of Concurrence and signing of the SSP/CI by the landowner and SWCD. This suits the practicalities of maximizing enrollment opportunities for interested landowners. While sage-grouse remain unlisted, the FWS may renew SSPs/CIs and permits, based upon reevaluation of the CCAA's ability to continue to meet the CCAA standard. An enrolled landowner may also voluntarily terminate a SSP/CI as described in *Section O. Termination of SSP/CI*, located in Appendix B. The FWS can only enroll new properties as long as sage-grouse has not been listed.

19. Modification of Programmatic CCAA

The FWS may not, through modification of the programmatic CCAA, impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, an enrolled landowner or successor in interest to the landowner to compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the CI except as stipulated in 50 CFR 17.22(d)(5) and 17.32(d)(5).

17.22 is the section of the Code of Federal Regulations (CFR) pertaining to: Permits for scientific purposes, enhancement of propagation or survival, or for incidental taking.
17.32 is the section of the Code of Federal Regulations CFR pertaining to: Permits – general.

Language for both CFR sections is identical, and is as follows:
(5) *Assurances provided to permittee in case of changed or unforeseen circumstances.* The assurances in this paragraph (d)(5) apply only to permits issued in accordance with paragraph (d)(2) where the Candidate Conservation with Assurances Agreement is being properly implemented, and apply only with respect to species adequately covered by the Candidate Conservation with Assurances Agreement. These assurances cannot be provided to Federal agencies.

20. Succession and Transfer

Within the SSP, the enrolled landowner agrees to give 30 days' written notice to the SWCD of his or her intent to sell the enrolled property or of any transfer of ownership, so that the SWCD can attempt to contact the new owner, explain the baseline responsibilities applicable to the property, and allow the new owner to have the option of receiving CCAA assurances by signing the original SSP/CI. As a party to the original SSP/CI and permits, the new owner will have the same rights and obligations with respect to the enrolled property as the original owner. Alternatively, the new owner may enroll in a new SSP/CI if sage-grouse has not been listed. Assignment or transfer of the permit shall be governed by FWS regulations in force at the time. If a new owner chooses not to enroll, the permit authorizations and assurances will cease.

21. EOS Permit Suspension or Revocation

The FWS may suspend the privileges of exercising some or all of the EOS permit authority at any time if the permittee is not in compliance with the conditions of the permit, or with any applicable laws or regulations governing the conduct of the permitted activity. Such suspension shall remain in effect until the issuing officer determines that the permittee has corrected the deficiencies.

The FWS may not revoke an EOS permit except as follows:
The FWS may revoke an EOS permit for any reason set forth in 50 CFR 13.28(a)(1) through (4). This regulation authorizes revocation if: the permittee willfully violates any Federal or State statute or regulation, or any Indian tribal law or regulation, or any law or regulation of any foreign country, which involves a violation of the conditions of the permit or of the laws or regulations governing the permitted activity; or the permittee fails within 60 days to correct deficiencies that were the cause of a permit suspension; or the permittee becomes disqualified; or a change occurs in the statute or regulation authorizing the permit that prohibits the continuation of a permit issued by FWS.

A permit can be disqualified or revoked if:

1. A conviction, or entry of a plea of guilty or nolo contendere, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act disqualifies any such person from receiving or exercising the privileges of a permit, unless such disqualification has been expressly waived by the Director in response to a written petition.
2. The revocation of a permit for reasons found in § 13.28 (a)(1) or (a)(2) disqualifies any such person from receiving or exercising the privileges of a similar permit for a period of five years from the date of the final agency decision on such revocation.
3. The failure to pay any required fees or assessed costs and penalties, whether or not reduced to judgment disqualifies such person from receiving or exercising the privileges of a permit as long as such moneys are owed to the United States. This requirement shall not apply to any civil penalty presently subject to administrative or judicial appeal; provided that the pendency of a collection action brought by the United States or its assignees shall not constitute an appeal within the meaning of this subsection.
4. The failure to submit timely, accurate, or valid reports as required may disqualify such person from receiving or exercising the privileges of a permit as long as the deficiency exists.

The FWS may revoke an EOS permit if continuation of the permitted activity would either appreciably reduce the likelihood of survival and recovery in the wild of any listed species, or directly or indirectly alter designated critical habitat such that it appreciably diminishes the value of that critical habitat for both the survival and recovery of a listed species.
Before revoking a permit for either of the two reasons in the preceding paragraph, the FWS, with the consent of the permittee, will pursue all options that FWS consider appropriate to avoid permit revocation. These options may include, but are not limited to: extending or modifying the existing permit, compensating the enrolled landowner to forgo the activity, purchasing an easement or fee simple interest in the enrolled property, or arranging for a third party acquisition of an interest in the property.

22. Remedies

Each party shall have all remedies otherwise available to enforce the terms of the CCAA and the EOS permit, except that no party shall be liable in monetary damages for any breach of this CCAA, any failure to perform an obligation under this CCAA, or any other cause of action arising from this CCAA.

23. Dispute Resolution

Landowner, SWCD, and FWS recognize disputes concerning implementation of, compliance with, or termination of the CCAA, EOS permit, or SSP/CI may arise from time to time. Landowner, SWCD, and FWS agree to work together in good faith to resolve such disputes, using the informal dispute resolution procedures set forth in this section, or such other procedures upon which the parties may later agree. However, if at any time any party determines circumstances so warrant, they may seek any available remedy without waiting to complete informal dispute resolution.

Informal dispute resolution process

Unless the parties agree upon another dispute resolution process, or unless an aggrieved party has initiated administrative proceedings or suit in Federal court as provided in this section, the parties may use the following process to attempt to resolve disputes:

- The aggrieved party will notify the other parties of the provision potentially violated, the basis for contending a violation has occurred, and the remedies it proposes to correct the alleged violation.
- The party alleged in violation will have 30 days, or such other time as may be agreed, to respond. During this time it may seek clarification of the information provided in the initial notice. The aggrieved party will use its best efforts to provide any available information responsive to such inquiries.
- Within 30 days after such response was provided or was due, representatives of the parties having authority to resolve the dispute will meet and negotiate in good faith toward a solution satisfactory to all parties, or will establish a specific process and timetable to seek such a solution.
- If any issues cannot be resolved through such negotiations, the parties will consider non-binding mediation and other alternative dispute resolution processes and, if a dispute resolution process is agreed upon, will make good faith efforts to resolve all remaining issues through that process.

24. Availability of Funds

Nothing in this CCAA will be construed by any party to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The FWS will not be required under this CCAA to expend any federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

25. Relationship to Other Agreements

This CCAA is part of a multi-county effort to enable range-wide conservation of sage-grouse on private lands in Oregon through the development of six CCAAs between the FWS and SWCDs. The first of these CCAAs was signed on May 21, 2014 with the Harney SWCD. This Lakeview SWCD CCAA and four other sage-grouse CCAAs in Oregon were developed with the same structure and content as the Harney SWCD CCAA in order to promote program consistency. This consistency will also maximize opportunities for program efficiencies including coordination of available financial and technical resources to implement all six of the private land CCAAs.

On May 30, 2013, the Oregon Cattlemen's Association, BLM, and FWS signed a Candidate Conservation Agreement (CCA) for certain BLM lands in Oregon. Most private livestock operations in Oregon are dependent upon federal grazing allotments for much or portions of their livestock grazing operations. While there are some differences in management activities on the BLM lands under the CCA compared to private lands under the six CCAAs, the plans are intended to be complementary and the goal is for enrolled landowners to manage for sage-grouse across their private land and onto their federal allotments. The CCA and the CCAAs provide the opportunity for landscape-scale conservation of sage-grouse habitat in Oregon.

26. No Third-Party Beneficiaries

This programmatic CCAA and any subsequent SSPs/CIs signed under the programmatic CCAA do not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of the landowner, SWCD, and FWS to this CCAA with respect to third parties shall remain as imposed under existing law.

27. Reports

Annual summary reports will be delivered to the person listed below:
Field Supervisor, Bend Field Office
U.S. Fish and Wildlife Service
63095 Deschutes Market Road
Bend, OR 97701

28. Notices

This programmatic CCAA was written with the participation of the Steering Committee (for list of parties, see p. 6). It is because of the collaborative efforts of those parties that this CCAA was completed.

IN WITNESS WHEREOF, THE SIGNING PARTIES HERE TO have, as of the last signature date below, executed this programmatic Candidate Conservation Agreement with Assurances to be in effect as of the date of the last signatory to sign this agreement.

Board Chair Lakeview Soil and Water Conservation District	3-12-15 Date
Deputy Regional Director, Region 1 U. S. Fish and Wildlife Service	3/18/15 Date

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APPENDIX A – Conservation Measures

Sage-Grouse Conservation Measures: All Conservation Measures (CMs) listed in this appendix and any CMs developed for a Site Specific Plan (SSP) will maintain or improve sage-grouse habitat, while contributing to the economic stability and sustainability of the individual properties/ranches of Lake County. The SSP developed for an individual property will identify threats to sage-grouse that exist on that property. This list implies possible conservation measures to be applied to address threats and will serve as a menu of options for all parties to use when developing SSPs. Each identified threat will be addressed with one or more CM from the list below and additionally, **conservation measures not identified on this list may be developed with landowner agreement and with the approval of FWS.**

This list of threats to sage-grouse has been subdivided into habitat-related and species-specific threats. The conservation objectives for habitat-related threats are listed in the programmatic CCAA under *Section 6. Inventory and Monitoring Protocols* in Figures 2-4, applicable objectives from these figures will be included in each SSP. The conservation objectives for species-specific threats are listed in this appendix, below the specific threat.

These conservation measures have been developed, some specific and some general, based on the best available knowledge, science, and experience.

Habitat-Related Threats

Threat: Fragmentation of the landscape -Fragmentation of the landscape causes birds to leave leks or abandon nests or important habitats (i.e., direct impact to nests and brooding hens), resulting in decreased reproductive success.

Conservation Measures:

1. **All enrolled landowners must agree to: *Maintain contiguous habitat by avoiding further fragmentation.* The objective for this required CM is for no net loss in 1) habitat quantity (as measured in acres) and 2) habitat quality (as determined by the ecological state).** The baseline determination of habitat quality and quantity will be completed during the baseline inventory and will serve as a reference point in meeting the objective for CM 1. Losses in sage-grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice versa, as long as the action avoids further fragmentation (consistent with *Section 10. Covered Activities* Development subsection).
2. Consolidate new roads, buildings, and power lines.
3. Consider entering into conservation easements.
4. Convert generator or windmill powered pumps (noise) to solar, when economically feasible.
5. Consider removing vertical structures (i.e. raptor perches) by burying new and existing power lines, and where possible cooperate with local utilities to retrofit powerlines to reduce raptor perches, when economically feasible.

Threat: Wildfire-Wildfires can remove long-lived species such as sagebrush, reducing sage-grouse habitat quality and quantity.

Conservation Measures:

6. Identify sage-grouse habitat as a high priority for protection and prevention in the SSP.

Map lands as PPH and PGH. The following proactive prevention measures may apply:

a. In years of high fuel load accumulation, strategically utilize livestock grazing to reduce fuel loads while maintaining suitable habitat for sage-grouse, consistent with the livestock management practices section.
b. Design, establish, and maintain fire breaks or green-stripping along key existing roadways to provide a fuel break and safe zone from which to fight fire. Strips would be no larger than 50ft on either side of a road, which will provide foraging habitat for sage-grouse and provide >100ft of fuel breaks. Within fuel breaks where annual grasses are prevalent, plant aggressive, fire-resistant perennial species to stabilize the site, with the long term objective of re-establishing native species.
c. In a SSP, identify key roads on a map that could serve as a fire break to be widened approximately 50ft on either side of the road, when wildfire actively threatens enrolled lands. These maps will be available to the fire personnel.
d. Attain wildfire training certification. Where possible join or assist Rangeland Fire Protection Associations (RFPA) and state and federal fire officials (at landowner's discretion) with initial attack to protect existing or potential sage-grouse habitat.[9]

7. Use direct attack tactics when it is safe and effective to reduce the amount of burned habitat. Direct attack supported by any available mechanized equipment (i.e. bulldozer, tractor w/blade, aerial drops) is the most efficient at reducing the overall size of rangeland fires thereby keeping habitat intact. It is most critical during initial attack before the fire gains momentum.

8. Retain unburned areas (including interior islands and patches between roads and the fire perimeter) of sage-grouse habitat unless there is a compelling safety, resource protection, or control objectives at risk.

Threat: Loss of sagebrush habitat due to lack of fire and associated conifer encroachment: High elevation plant communities are dependent upon periodic fire to maintain healthy functional plant communities. The use of prescribed fire in low elevation sagebrush communities can result in a reduction of sage-grouse habitat in quality and quantity. Work with agency specialists to determine need for treatment and, if needed, the appropriate method (e.g., chainsaw, heavy machinery, chemical, prescribed fire, or a combination). Choose methods that will minimize or prevent soil disturbance or sterilization and methods least likely to result in weed invasions.

Conservation Measures:

9. Utilize prescribed fire treatments which will generally occur at higher elevations, where there is little risk of invasive plant establishment post-treatment. Treatments will be conducted so there is a mosaic of sagebrush and burned areas to provide a seed source for sagebrush and native grass and forb regeneration.

10. Remove encroaching juniper from sagebrush communities through cutting of juniper and burning piled trees and limbs ("jack-pot burning", which involves returning to juniper

[9] BLM will only allow RFPAs or their members to assist on initial attack and fire fighting on public lands. This is in accordance with current cooperative agreements and certification of current fire fighting training. Participation in or creation of a RFPA is proactive in protecting private land from fires ignited on public land.

piles when the ground is frozen or saturated to conduct burning), or other methods that are mutually agreed upon by the SWCD, landowner, and FWS. Ensure timing of these burns does not interfere with lekking or other known seasonal movements of sage-grouse (see "Threat: Juniper/Conifer Expansion" for full specifications).

11. Limit use of prescribed fires at lower elevations. Prescribed fire at these elevations will only be used when there are no other options, or a pre-burn evaluation has determined the risk of cheatgrass and other invasive weeds is minimal, and there is low risk of reducing critical sage-grouse habitat features.

Threat: Juniper/Conifer Expansion –Juniper/conifer encroachment can lead to a reduction of sage-grouse habitat, use, or abandonment. Slash from mechanical or chemical removals may continue to compromise habitat use.

Conservation Measures:

12. Remove encroaching juniper/conifer within existing riparian and transitional zones.
13. Treat/remove encroaching juniper/conifer in sage-grouse habitats.
14. For Phase I, juniper felling and leaving may be effective. Limb any branches >4 ft in height on a felled tree (i.e., lop and scatter).
15. For Phase I and Phase II, where jackpot burning is the most appropriate method of slash removal, consider a spring burn (Mar-Apr) when soils tend to be frozen but the moisture content of the felled trees is low. Ensure timing of these actions does not interfere with lekking or other known seasonal movements of sage-grouse.
16. Conduct broadcast burns of juniper-invaded sagebrush, judiciously taking into consideration the spatial and habitat needs of sage-grouse relative to the size of the burn.
17. Seed juniper treatment when current perennial grass community is in poor condition (<2 plants /10ft^2, <1 plant/10ft^2 on dry and wet sites) or if exotic annual grasses are present. Broadcast seeding prior to soil disturbance or under slash may increase the chances of establishment.
18. Rest treated area from grazing following treatment. Length of rest will depend on understory composition at time of treatment and response of desirable vegetation following treatment. Set quantifiable objectives for post-treatment vegetation recovery based on pre-treatment monitoring data, return livestock grazing once objectives have been met.

Threat: Unmanaged and/or Improper Grazing-Livestock, humans, and vehicles can physically disturb and cause birds to leave leks or abandon nests (i.e., direct impact to nests and brooding hens) resulting in decreased reproductive success. However, appropriate livestock grazing regimes (generally light to moderate utilization 25-50% (BLM Tech Reference 17-34-3) in nesting habitat) are compatible with sage-grouse habitat needs. The goal of grazing management is to maintain the desired ecological state or move the plant community toward the desired state. Adaptive management will be necessary to adjust levels and season of livestock grazing with a forage supply that is ever changing in response to varying growing conditions for vegetation (e.g., inter-annual climate variation) and habitat conditions. Annual monitoring information will be used by the landowner to make adjustments to grazing management to ensure a desirable vegetation trend is maintained (see *Section 6. Inventory and Monitoring Protocols*).

Conservation Measures:

19. Avoid placing salt, water, or mineral supplements within 0.6 miles of the perimeter of an occupied lek.
20. Reduce disruptive activities one hour after sunset to two hours after sunrise from March 1 through June 30 within 0.6 miles of the perimeter of occupied leks, unless brief occupancy is essential for routine ranch activities (e.g., herding or trailing livestock into or out of an area at the beginning or end of the grazing season). Examples of disruptive activities may include noise, human foot or vehicle traffic, or other human presence.
21. Reduce off-trail vehicular travel in nesting habitat from March 1 through June 30 unless travel is essential for routine ranch activities (including but not limited to: repairing fence, "doctoring" livestock, finding lost livestock, and irrigation activities).
22. Develop and/or use a written grazing management plan to maintain or enhance the existing plant community to ensure a community suitable as sage-grouse habitat. If available, use approved ecological site descriptions to set realistic goals for the plant community. (Example: NRCS Oregon 2007; Conservation Practice Standard – Prescribed Grazing Code 528).
23. Change salting and watering locations to improve livestock distribution and maintain or enhance sage-grouse habitat quality.
24. Avoid alteration of winter habitat with winter feeding in occupied habitat unless it is part of a plan to improve ecological health or to create mosaics in dense sagebrush stands that are needed for optimum sage-grouse habitat, or is needed for emergency care of livestock.
25. Develop additional water sources for wildlife and livestock, to reduce impacts to riparian, wetland, playas, and wet meadow areas important to sage-grouse.
26. Spring developments should be constructed or modified to maintain their free-flowing and wet meadow characteristics.
27. Ensure wildlife accessibility to water and install escape ramps in all new and existing water troughs.
28. Avoid construction of new livestock facilities (livestock troughs, fences, corrals, handling facilities, "dusting bags," etc.) at least 0.6 miles from leks or other important areas of sage-grouse habitat (i.e., known wintering and brood rearing areas) to avoid concentration of livestock, collision hazards to flying birds, or avian predator perches.
29. Refer to the model by Bryan Stevens for identification of areas that may contain fences that pose the highest threat to sage-grouse. In high risk areas, remove unnecessary fences and relocate or mark needed fences with anti-strike markers or other agreed upon visual markers (Stevens 2011).
30. Manage grazing in riparian areas to ensure bank stability, survival of deep-rooted riparian vegetation, floodplain connectivity, and stream functionality.

Threat: Exotic Invasive Vegetation -Establishment of plant communities that do not provide suitable habitat (e.g., introductions and monocultures of non-native, invasive plants) are reducing sage-grouse habitat quality and quantity. Prevention and early detection is needed. Invasive weeds continue to expand from borders of large infestations. Many sagebrush-steppe communities have crossed a threshold after which they are no longer recoverable by control methods.

Conservation Measures:

31. Enrollees will work with county weed experts and other experts to ensure they can

identify the invasives that are a threat to their land, to establish weed prevention areas, and to explore available assistance to implement treatments.

32. Identify and implement treatments for enrolled lands that will promote an intact and functioning sagebrush landscape

33. Systematic and strategic detection surveys should be developed and conducted in a manner maximizing the likelihood of finding new patches before they expand. Once patches are located, seed production should be stopped and the weeds should be eradicated. The most effective tools for eradication of many weeds are herbicides and possibly bio-controls.

34. When using herbicides, all best management practices and only approved herbicides listed in Appendix E will be used on enrolled lands for coverage under the 10(a)(1)(A) permit associated with this agreement.

35. Containment programs for large infestations should be maintained. Border spraying infestations, planting aggressive (even appropriate non-native species) plants as a barrier, establishing seed feeding biological control agents and targeted grazing to minimize seed production are all methods that could help contain large infestations.

36. Areas with an adequate understory (> 20% composition) of desired vegetation should be identified and prioritized as high for control since they have a higher likelihood of successful rehabilitation than areas where desired species are completely displaced.

37. Include in the SSP rehabilitation for areas with inadequate understory (< 20% composition) of desired vegetation. The species of choice should include perennial species that are competitive with invasive weeds. The goal should be to maximize niche occupation with desired species.

38. Report any new annual grass (e.g., cheatgrass, medusahead) infestations and take immediate action to eradicate when practical and economically feasible. Site plan should describe whether there is a commitment to reporting incidental sightings, or whether there will be specifically planned surveys.

39. Non-native perennial species such as crested wheatgrass may be seeded to stabilize and prevent further invasion of cheatgrass and medusahead. These species should be used with the intent to stabilize the plant community and allow for long term recovery of sagebrush and other native species.

40. Aggressively treat noxious weeds and other invasive plants where they threaten quality of sage-grouse habitat and apply best management practices to prevent infestations from occurring.

41. Use certified weed-free seed mixes and mulches.

42. Manage livestock use on newly seeded/planted rangeland, allow adequate rest, generally a minimum of two growing seasons. Set quantifiable objectives for post-treatment vegetation recovery; return livestock grazing once objectives have been met.

Threat: Vegetation Treatments -Vegetation treatments (e.g., chemical, mechanical) can result in a reduction of sage-grouse habitat quality and quantity.

Conservation Measures:

43. Use brush beating in mosaic patterns as a tool to increase production of understory species and to increase diversity to benefit sage-grouse habitat. Current recommendations suggest brush beating (or other appropriate treatment) in strips (or a mosaic pattern) 12 to 50ft wide (with untreated interspaces 3 times the width of the

treated strips) in areas with relatively high shrub cover (>25%) without an understory of annual grasses to improve herbaceous understory for brood rearing habitats, where such habitats may be limiting. Also, take into account aged sagebrush stands with minimal recruitment and high shrub decadence. Such treatments should not be conducted in known winter habitat (Dahlgren et al. 2006).

44. Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to priority sage-grouse habitats to determine if they should be restored to sagebrush or habitat of higher quality for sage-grouse. Active restoration success has been extremely limited using current technology, where it is economically and logistically feasible, consider transplanting sagebrush or using sagebrush plugs, if not economically and/or logistically feasible, allow sagebrush recruitment into perennial herbaceous dominated communities (i.e., don't mow sagebrush that is reestablishing in crested seedings).

45. Any vegetation treatments conducted in plant communities dominated by exotic annual species will be accompanied by rehabilitation (and if necessary, reseeding) to achieve reestablishment of perennial vegetation and allow for long term recovery of sagebrush and other native species.

46. To minimize disturbance to sage-grouse populations, do not conduct broadcast applications of herbicides during nesting and early-brood rearing periods when sage-grouse are present (March 1 – June 30, at a minimum), unless this timeframe or target plant development stage is optimal for herbicide effectiveness.

47. The use of herbicides (primarily tebuthiuron) at low (0.1–0.3 kg ai/ha) application rates may effectively thin sagebrush cover while increasing herbaceous plant production (Olson and Whitson 2002). These treatments should be applied in strips or mosaic patterns. Site conditions must be critically evaluated prior to treatment (including fire rehabilitation, new seedings, and seeding renovations) to increase likelihood of the desired vegetation response.

48. Agency specialists will determine how sagebrush treatments are part of a larger landscape plan. If sagebrush treatment is warranted after a plan is developed with agency specialists, utilize a mosaic pattern of treatment (as described in CM 43) rather than a large uniform block.

Threat: Drought- When rangeland plants are deprived of precipitation, it affects the plant's growth cycle, volume of growth, and fruition. When drought conditions exist, annual monitoring will be used to determine site specific recommendations. Drought is site specific and is typically considered to occur when two growing seasons of precipitation are below the long term average, affecting plant life cycles as described above. Prolonged drought is when the conditions described above persist for three or more growing seasons. Prolonged drought can harm plants important to sage-grouse reducing sage-grouse habitat quality and quantity (*see Section 14. Changed Circumstances* - drought subsection - for more information on determination of drought conditions).

Conservation Measures:

49. Work with agency specialists to incorporate a drought management strategy for grazing which considers the needs of sage-grouse.

50. Adjust livestock use (season of use, timing, intensity, and/or duration) to reduce the impact on perennial herbaceous cover, plant diversity, annual native herbs and grasses,

and plant vigor to enable enrolled lands to meet the seasonal habitat needs for sage-grouse identified for the site.

Threat: Mechanical degradation of riparian area-Those actions utilizing mechanical equipment that results in decreased water table stability and function.
Conservation Measure:

51. Consider stream system hydrology prior to development of any facility, feature, or infrastructure such as roads, dams, culverts, water crossings, bridges, and ditches.

Threat: Catastrophic Flooding- Excessive runoff resulting from catastrophic hydrological events (e.g. rain on snow event) is associated with mass-wasting of hill slopes, damage to river banks, and downstream flooding. These events have the capability to drastically change stream hydrology and vegetative composition of riparian corridors.
Conservation Measure:

52. Manage livestock use (season of use, timing, intensity, and/or duration) in a manner that promotes herbaceous and deep-rooted riparian vegetation that will stabilize stream bank morphology and aid in the recovery following a catastrophic flood event.

Species-Specific Threats

Threat: Recreation -Repeated disturbance and harassment of sage-grouse could reduce mating and reproductive productivity.
Conservation Objective: Reduce the amount of sage-grouse disturbance and harassment, as well as direct mortality.
Conservation Measure:

53. If enrolled lands have high visibility leks and/or known winter concentration areas, protect existing habitat by restricting seasonal access for recreational use.

Threat: Predation – Some rangeland management activities can increase opportunities for predation of sage-grouse and sage-grouse nests. Predation may be underestimated as a limiting factor to sage-grouse population success in much of its occupied habitat. (Coates and Delehanty 2010; Coates et al. 2008; Dinkins et al. 2012; Kolada et al. 2009; Kolada et al 2009b; Moynahan et al. 2007; Willis et al. 1993). In particular the impacts of predation on sage-grouse can increase where habitat quality has been compromised by anthropogenic activities (Coates 2007; Bui 2009; Hagen 2012).
Conservation Objective: Minimize the effects of predation on isolated, translocated, or declining populations where predation has been identified as the limiting factor. Reduce direct mortality to individuals and broods.
Conservation Measures:

54. Minimize attractants for corvids, raptors, and coyotes (i.e., dump sites, bone piles, etc.).
55. Utilize predator management programs when documented as a limiting factor on sage-grouse populations. If poor habitat conditions are causing a predator problem, habitat conditions should be addressed first if possible, or jointly with, or shortly after predator control. Predator management includes lethal and non-lethal methods (see ODFW Strategy - Hagen 2011).

Threat: West Nile virus (WNv) - Sage-grouse immune systems lack resistance to WNv. Surface water developments may increase habitat for mosquitoes, increasing the potential for WNv exposure.
Conservation Objective: Reduce potential for direct mortality and/or disease transmission.
Conservation Measures:

56. Minimize unnecessary standing water that could be used as mosquito breeding grounds within sage-grouse habitat. Where new pond construction or water developments are proposed for rangeland management or habitat enhancement purposes, use innovative designs, when possible, to minimize the amount of mosquito habitat that could be created. Work with agency biologists on optimal locations for new water developments.

Threat: Wild Horses and Burros - Concentrated or overabundant wild horse and/or burro populations can reduce habitat quality and quantity.
Conservation Objective: Reduce impacts to sage-grouse habitat.
Conservation Measures:

57. Document and report habitat damage on enrolled lands from wild horses and/or burros.
58. On enrolled lands where base inventory, annual, or long term monitoring indicate wild horses may affect sage-grouse habitat, ensure all findings (as requested by the landowner) are reported to BLM. When habitat monitoring indicates negative impacts from wild horses to enrolled private lands, SWCD, FWS, and cooperators will provide written recommendations for the landowner to submit to BLM recommending gathering of wild horses and/or burros.
59. To maintain and/or improve sage-grouse habitat on enrolled lands with wild horses, SWCD, FWS, and CCAA cooperators will submit recommendations in writing to BLM to manage wild horse and/or burro numbers for long term management at or below the appropriate management level.
60. When habitat monitoring indicates damage from wild horses and/or burros on enrolled lands, upon the landowner's request SWCD, FWS, and CCAA cooperators will submit written recommendations to the BLM to relocate wild horses from affected private land.

Threat: Insecticide - Grasshoppers and Mormon crickets periodically have infestations which cause significant long term damage to sagebrush. The use of insecticides is not known to pose range-wide threats to sage-grouse. However, insecticides have been documented as causing mortality to sage-grouse. Some insecticides could have detrimental effects to individual sage-grouse through direct contact, either by consumption of insects exposed to certain insecticides or by reduction of insect populations during times when insects are a crucial part of the birds' diets USFWS 2010.
Conservation Objective: Maintain important sage-grouse forage base and avoid or minimize direct mortality to sage-grouse.
Conservation Measures:

61. If possible, contract with Animal and Plant Health Inspection Service (APHIS) and/or Oregon Department of Agriculture (ODA) for all insecticide treatments.
62. Consult with SWCD, ODA, and APHIS. Avoid carbaryl/malathion; use diflubenzuron (Dimilin) if at all possible.
63. Work with agency specialists to plan and design control efforts to avoid harming sage-grouse and non-target species.

64. Avoid spraying treatment areas in May and June (or as appropriate to local circumstances) to provide insect availability for early development of sage-grouse chicks.

65. Use approved chemicals with the lowest toxicity to sage-grouse that still provide effective control.

66. When feasible and as outlined by APHIS or ODA, use Reduced Area/Agent Treatments (RAAT) to control grasshoppers, which focuses control efforts along strips to avoid spraying entire fields.

APPENDIX B – Site Specific Plan/Certificate of Inclusion

SITE SPECIFIC PLAN/CERTIFICATE OF INCLUSION
Under the
Candidate Conservation Agreement with Assurances
For the Greater Sage-grouse in Lake[10] County, Oregon
Between
[insert landowner name– a tract # will be assigned for file retention]
and
Lakeview Soil and Water Conservation District
[insert date]

A. Legal Conveyance of Assurances
This certifies that the enrolled property described below, and owned by the landowner named above, is included within the scope of the Enhancement of Survival Permit (Permit) No. [insert #] issued on [insert date] to the Lakeview Soil and Water Conservation District (SWCD) under the authority of Section 10(a)(l)(A) of the Endangered Species Act of 1973 as amended, 16 U.S.C. 1539(a)(l)(B). Such Permit authorizes incidental take of the Greater sage-grouse (sage-grouse) as part of a Candidate Conservation Agreement with Assurances (CCAA). This incidental take is allowed due to conservation measures incorporated on the owner's property as described in the Site Specific Plan (SSP) contained herein. The implementation of this SSP will benefit the sage-grouse and/or its habitat within its range in Lake County, Oregon. Pursuant to the Permit and this Certificate of Inclusion (CI) the holder of this CI is authorized to incidentally take sage-grouse as a result of engaging in otherwise lawful covered activities on the property, subject to the terms and conditions of the Permit and the CCAA. Permit authorization is contingent to carrying out the Conservation Measures described in this SSP, the terms and conditions of the Permit and the CCAA. By signing this CI, the landowner agrees to carry out all of the Conservation Measures described in this SSP.

During the life of this CI, changes in the understanding of sage-grouse management and sagebrush habitat community management are anticipated. Additionally, events that lead to changes in habitats or uses may occur. These "changed circumstances" are changes affecting sage-grouse or the geographic area covered by this CCAA that can reasonably be anticipated and can be planned for. This CCAA has identified wildfire, drought, West Nile virus, catastrophic flooding, and habitat fragmentation from development as potential changed circumstances that are expected to occur over the 30-year life of the permit.

If it is determined by the landowner, SWCD, or FWS that a changed circumstance(s) exists, the landowner will implement the appropriate CCCM or a mutually agreed upon approach to address the additional threat or threats created by the changed circumstance(s). Conservation measures (referred to as changed circumstance conservation measures or CCCMs) will be adopted to maintain the benefit to sage-grouse and the meet the CCAA standard on the enrolled property.

[10] See Section 8. Covered Area in programmatic CCAA for inclusion of adjacent lands outside county boundaries

All modifications, changes or additions to the SSP will be mutually agreed upon by the landowner, SWCD and FWS. If a changed circumstance(s) occurs the SWCD will notify the FWS of the enrolled lands affected, the impact of the changed circumstance(s), and the CCCM(S) that will be implemented to address the changed circumstance(s).

A list of CCCMs is located in *Section 14. Changed Circumstances* of the programmatic CCAA. This list provides possible conservation measures to address threats created by a changed circumstance(s). Conservation Measures not identified on this list may be developed with landowner agreement and with approval of FWS.

The only situation where modification of conservation measures can be required by the FWS is described in *Section 16. Unforeseen* Circumstances of the programmatic CCAA. To respond to unforeseen circumstances, the FWS may require modified or additional conservation measures by the landowner, but only if such measures maintain the original terms of the CCAA/SSP to the maximum extent possible. The FWS will consider whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of sage-grouse in the wild. Additional conservation measures will not involve the commitment of additional land, water, or landowner funds, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA without the consent of the landowner, provided the SSP/CI is being properly implemented.

B. Parties

This Site Specific Plan (SSP) and Certificate of Inclusion (CI) for sage-grouse conservation, effective and binding on the date of the last signature below is between the Lakeview Soil and Water Conservation District and Private Landowner.

C. Responsibilities

Landowners will:

- Assist in the development of mutually agreeable SSPs in cooperation with the SWCD and FWS and cosign the SSP/CI document upon receiving a Letter of Concurrence from FWS
- Implement all agreed upon CMs in their SSP
- The property owner agrees to allow SWCD and FWS employees or its agents, with reasonable prior notice (at least 48 hours) to enter the enrolled properties to complete agreed upon activities necessary to implement the SSP
- Continue current management practices that conserve sage-grouse and its habitats as identified in the enrollment process
- Avoid impacts to populations and individual sage-grouse present on their enrolled lands consistent with this SSP
- Record dates, locations, and numbers of sage-grouse observed on their enrolled lands to be included in the annual report
- Record new observations of noxious weeds that they incidentally find
- Report observed mortalities of sage-grouse to the SWCD within 48 hours
- Cooperate and assist with annual and long term monitoring activities and other reporting requirements identified in the SSP

The SWCD will:

- Conduct public outreach and education to encourage enrollment of landowners in the CCAA through Site Specific Plans (SSP)/Certificates of Inclusion (CIs)
- Enroll landowners according to the steps outlined in *Section 3: Application and Enrollment Process*
- Use the mutually agreed upon tracking system to protect landowner privacy
- Prepare and review SSPs/CIs for accuracy and cosign the SSP/CI document upon receiving a Letter of Concurrence from FWS
- Assist in the implementation of conservation measures, monitoring, or other measures if agreed upon during the development of the SSP by the landowner, SWCD, and FWS
- Ensure terms and conditions included in the SSPs are being implemented as agreed upon
- Collect and evaluate monitoring data to determine if CMs are providing the desired habitat benefit and provide a report of monitoring results to the landowner and copies of summary reports to FWS
- Provide technical assistance to aid enrolled landowners in implementing the CMs
- Work with enrolled landowners and other agencies (e.g., OSU Extension, NRCS) to facilitate appropriate rangeland monitoring and/or training
- Provide support and assist in obtaining funding from other sources for the implementation of CMs
- Monitor and report projects (e.g. implementation of CMs) in order to determine success and adaptations needed
- Immediately report to FWS and ODFW any observed or reported mortalities of sage-grouse
- Meet annually with FWS to present annual and trend monitoring information
- Protect, to the maximum extent available under federal, state, and local laws, against the release or disclosure of all confidential personal and/or commercial information provided by enrolled landowners and collected, gathered, prepared, organized, summarized, stored, and distributed for the purposes of developing and implementing this CCAA
- Provide notice to enrolled landowners when a request for public records concerning this CCAA is made, and allow the enrolled landowner to prepare a notification requesting that any confidential personal and/or commercial information be withheld

The U.S. Fish and Wildlife Service will:

- Provide assistance in coordinating development and implementation of this CCAA
- Review each SSP[11] and provide a Letter of Concurrence within 60 days if all issuance criteria are met for all SSPs completed under the EOS permit
- Provide technical assistance to aid the landowners in implementing the CMs
- Review monitoring data for consistency with CCAA objectives to determine if conservation measures are providing the desired benefit to sage-grouse
- Serve as an advisor, providing expertise on the conservation of sage-grouse

[11] FWS will participate in the development of up to the first five SSPs that represent the diversity of habitat in Lake County, including site visits, baseline inventory, analysis or other aspects of plan development.

- Assist in the implementation of conservation measures, monitoring, or other measures if agreed upon during the development of the SSP by landowner, SWCD, and FWS
- Provide FWS funding, to the extent funding is available, consistent with *Section 23. Availability of Funds* of the programmatic CCAA, to support implementation of this CCAA and associated SSPs/CIs
- Provide support and assist in obtaining funding from other sources for the implementation of CMs
- Conduct outreach and public education efforts to promote the conservation of sage-grouse
- Immediately report to ODFW any observed or reported mortalities of sage-grouse
- Protect, to the maximum extent permissible under federal laws, against the disclosure of all confidential personal and/or commercial information provided by enrolled landowners and collected, gathered, prepared, organized, summarized, stored, and distributed for the purposes of developing and implementing this CCAA
- Provide notice to SWCD when a Freedom of Information Act (FOIA) request for records concerning this CCAA is made, and allow the SWCD to prepare a notification requesting that any confidential personal and/or commercial information be withheld

D. Property Owner
[Insert name and if appropriate, include Leasee's signature after review of lease agreement and specific power of attorney documentation). A tract # will be assigned for file retention.]

E. Legal Description of the Enrolled Property
[Insert legal description of the land that is to be included under a SSP/CI and map of enrolled lands. A tract # will be assigned for file retention.]

F. General Description of the Enrolled Property
[Include acreage of parcel(s), general location and surrounding ownership, distance from nearest town, elevations and land forms, native and converted habitat types, observed use by sage-grouse, lek locations and/or other important sage-grouse habitat. Include general habitat type map or include on topographic map with property boundaries. Also include overview photos of property.]

G. Covered Activities and Level of Take
Based on the FWS' analysis in the Conference Opinion for the programmatic CCAA, incidental take is expected to occur from rangeland treatment, livestock management, recreation, farm operations, and development (see *Section 12. Covered Activities and Estimated Levels of Take, Section 14. Changed Circumstances*, and Appendix A. Conservation Measures of the programmatic CCAA, or as specifically identified herein). All other activities associated with the operations of [insert Private Landowner name or tract #] are either not anticipated to adversely affect sage-grouse on covered lands, or will not have adverse effects that rise to the level of incidental take as defined by the FWS.

The expected level of take of sage-grouse will be minimized and avoided through the implementation of CMs and the actual take will be identified to the extent possible through the monitoring methods associated with the SSP. Individual landowners with SSPs are not

specifically allocated a certain amount of take. Any incidental take reported by [insert Private Landowner or tract #] will be considered in the cumulative amount of take permitted in the area covered under the programmatic CCAA.

H. Historic Property Information

[Insert fire history, ownership, grazing history, drought, floods (5-10 years or additional if large scale event)]

I. Current Property Uses and Management Practices

[Describe existing structures on the enrolled property (e.g. houses, barns, fences, power lines). Describe all routine and management activities to include current grazing, farming, haying, and ranching practices.]

J. Habitat Inventory, Assessment, and Monitoring

Site Selection Protocol

1. Background information-Stratifying enrolled lands into inventory and monitoring units will require gathering any of the following background information that exists for each property/properties for which a site specific plan is being considered: aerial photographs, satellite imagery, written and oral histories, disturbance history (e.g., burn maps), management history, property maps, plant species lists, ecological sites and site descriptions, and soil maps.

2. Stratify by habitat suitability using existing data-The enrolled property will first be stratified into areas of existing suitable (i.e., low elevation ecological states A, B, and D; high elevation ecological states A and B; lotic riparian ecological states characterized by consistent access to floodplain) or potentially suitable sage-grouse habitat (i.e. low elevation ecological state C; high elevation ecological states C, D, and E; lotic riparian ecological states without consistent access to floodplain) and areas of persistently unsuitable habitat (e.g., historically non-habitat or permanently converted habitat – infrastructure, agriculture, residential, etc.) (see Figure 1).

3. On-site documentation of upland ecological states -The upland property will then be stratified by management unit (typically by pasture). Each upland management unit will then be stratified into the two primary ecological types (i.e., high elevation sagebrush rangeland and low elevation sagebrush rangeland) using a combination of existing knowledge and/or data, ecological site descriptions, GIS techniques, and field reconnaissance. Ecological types within management units will then be stratified by the ecological states described in their respective state and transition model. Preliminary ecological state strata will be determined using GIS data. The resultant preliminary strata will then be used to direct ground truthing and associated habitat inventory efforts; ground truthing of preliminary ecological state strata will be accomplished following procedures outlined in the Upland Ecological State Documentation Form (Appendix D-4). The ocular assessment outline located in Appendix D-4 will provide the basis for selecting representative areas for each stratum, where quantitative data will be collected and serve as permanent habitat monitoring sites for the management unit (long term (trend) monitoring).

4. Establish and monitor upland trend sites – Sites which are representative of the ecological states of sage-grouse habitat within a pasture will be determined during ocular assessment and permanently marked on the ground and recorded using the Site Documentation Form shown in Appendix D-2 (Johnson and Sharp 2012). Trend monitoring, which consists of measurements of plant community attributes (ground cover, foliar cover of shrubs, basal cover of perennial herbaceous species, density and frequency of occurrence) will be recorded in an initial or baseline monitoring with follow-up measurements recorded at intervals of 3 to 10 years. The frequency of trend monitoring is dependent on site stability, baseline data determinations and the conservation measures being applied. The changes in plant community attributes are measured over time to determine if the ecological state of the plant community is changing (transitioning) toward or away from desired habitat or remaining stable. This information is assessed along with annual monitoring to determine cause(s) of change which may be management or climatic or a combination of both. This becomes the basis of determining if selected conservation measures are having the desired effect or if adaptive changes are needed. The basic method of upland trend monitoring used in this CCAA is a modified Pace 180° with step-point and density measurements with plot photos and landscape photos in cardinal directions. However, the CCAA provides the SWCD with the flexibility to employ (with the concurrence of the landowner) the most efficient, generally accepted rangeland monitoring methodologies to measure change in ecological states as related to specific objectives in the SSP. For a detailed explanation of the upland protocols see Appendix D.

5. Stratify riparian areas - Each stream will be stratified by pasture. This will be done to better identify the factors that are influencing change within each management unit (i.e. pasture). A site visit will be performed on the stream segments to identify critical areas (e.g. headcuts, extreme downcutting) and to perform ocular assessments. The ocular assessment is a point-in-time measurement of visual indicators and will be used for initial assessment to determine the ecological state of each stream reach within the model (Appendix C). Ideally, one ocular assessment will be done per stream segment; however, due to stream heterogeneity and changes in ecological condition, multiple assessments may be necessary.

6. Establish and monitor riparian sites - Permanent representative trend sites will be determined during ocular assessment and only conducted on low gradient stream segments. The upstream and downstream ends of the monitoring location, as well as any other critical area in between will be documented with GPS and marked by rebar. These permanent locations will be used as repeat photo monitoring points. Photos will be taken from these points both upstream and downstream to assess stream movement, site stability, and vegetative trend. If photo assessment indicates a stable ecological state (A) then monitoring will consist of periodic photos. If photo monitoring indicates an unstable ecological state (B or C) then a CM should be applied with further assessment such as Proper Functioning Condition (PFC). If this assessment determines the stream segment is non-functioning or functioning-at-risk, then a quantitative method of trend monitoring should be enacted. The method selected will be determined by SWCD and the landowner for the specific stream segment.

Annual Monitoring
Sagebrush rangelands are dynamic systems that constantly change in response to fire, wildlife, climate, insect infestations, weed invasions, and natural vegetation succession; not just to inputs from management. Annual monitoring focuses on identifying management inputs and factors external to the management program that affect the responses of sagebrush rangeland over time. These are the factors that influence the change documented with trend monitoring (described above) and may include growing conditions for plants (e.g., precipitation, temperature trends, drought, etc.), livestock and wildlife numbers, utilization patterns of livestock and wildlife, insect and rodent infestations, recreational use, trespass livestock, and timing, duration, and frequency of livestock grazing. Suggested information and a data form for conducting annual monitoring are shown in Appendix D-3. In addition to the information in the "Annual Grazing and Habitat Summary", other potentially important annual records would include pasture-level grazing utilization and distribution, actual use, sage-grouse observations, or any other factors that could have affected the growing conditions for vegetation not identified on the form.

The property owner agrees to allow SWCD and FWS employees or its agents, with reasonable prior notice (at least 48 hours) to enter the enrolled properties to complete agreed upon activities necessary to implement the SSP.

The landowner will report incidental take of individual sage-grouse to the SWCD who will provide the information to the FWS and ODFW.

K. Threats Assessment, Conservation Objectives, Conservation Measures, Inventory and Monitoring
This section will identify threats to sage-grouse habitat. This will include a discussion of haying and farming practices and measures to minimize any possible hazards. Identified future plans for the enrolled property will also be documented in this section. Conservation Measures for the enrolled property will be identified with quantifiable conservation objectives and monitoring outlined to measure progress for each specific conservation measure.

According to the FWS 2010 12-month Finding (75 FR 13910), the primary threat to sage-grouse is habitat fragmentation. Therefore, in order for this CCAA to address the conservation needs of the sage-grouse, this threat must be addressed by all enrolled landowners on the enrolled portion of their property through the incorporation of CM 1 into this SSP: *Maintain contiguous habitat by avoiding further fragmentation.* The objective of this required CM is for no net loss in 1) habitat quantity (as measured in acres) and 2) habitat quality (as determined by the ecological state). The baseline determination of habitat quality and quantity will be completed during the baseline inventory and will serve as a reference point in meeting the objective for CM 1. Losses in sage-grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice versa (consistent with *Section 12. Covered Activities and Estimated Levels of* Take - development subsection).

[Insert schedule for completing long term monitoring (trend)]

[Insert here all identified threats, conservation objectives, conservation measures, and monitoring requirements as outlined similar to the example below]

Example:

Threat: In the Upper Pasture (1500 acres) of this property juniper has encroached into high elevation sagebrush rangeland. Juniper is in Phase II and III on 500 acres and is/has decreased available sage-grouse nesting and brood rearing habitat. (Based on stratification of habitat suitability from the Upland Ecological State Documentation Form).

Conservation Objective: Prevent transition to conifer dominated state by reducing or eliminating conifers on 250 acres of Ecological State C mountain big sagebrush/Idaho fescue range sites in the Upper Pasture over the next 10 years. (These 250 acres were selected based on an initial baseline assessment of their location within PPH/Core habitat, potential for recovery based on deep, north slope soils, and post management capabilities of the landowner).

Conservation Objective: Restore dominance of shrubs and perennial grasses and forbs through removal of dominant conifer overstory on 250 acres of Ecological State E mountain big sagebrush/Idaho fescue range sites in the Upper Pasture over the next 10 years. (Information collected during the baseline inventory indicated restoration of these 250 acres was important for providing connectivity between large areas of intact sagebrush habitat and for meeting the nesting and brood-rearing life history needs of sage-grouse).

Conservation Measures: # 10, 13, 15, 17, 18 (Due to the location of the treatment areas in proximity to potential invasive species, cutting, piling and pile burning with follow-up seeding will be utilized as conservation actions to improve the landscape capability for supporting sage-grouse).

Monitoring: Two representative, permanent monitoring locations will be established in each of the proposed treatment areas and Modified Pace 180° data, supplemented with density measurements and transect photos, will be collected prior to implementation of conservation measures to establish the baseline for trend monitoring. Trend monitoring will be repeated three and five years post treatment implementation. Subsequent trend monitoring will be conducted every five years.

Interpretation of Trend Indicators and Associated Triggers for Adaptive Management: Key indicators of vegetation trend will include perennial bunchgrass basal cover and density and sagebrush cover and density. An upward trend in these key indicators at representative monitoring locations (e.g. 1. perennial grass basal cover and density has increased and interspaces between perennial plants is either bare ground or occupied by desirable annual forbs and 2. sagebrush cover and density has increased) would suggest the applied conservation measures were successful in transitioning the ecological status of vegetation from being conifer dominated to being sagebrush/bunchgrass dominated. A static or downward trend in these key indicators would suggest the need for intervention

with follow-up measures (e.g. weed control and/or re-vegetation treatments) to ensure progress is being made toward achieving conservation objectives. Conifer cover will become a key indicator of trend during longer term monitoring. An increase in conifer cover suggests a negative trend toward conifer dominance.

Threat: Medusahead rye has invaded 20 acres of low elevation rangeland in Ecological State B in the House Pasture. (This patch of medusahead rye was discovered during the first site visit and was found in a relatively intact Wyoming big sagebrush and blue bunch wheatgrass/Sandberg bluegrass range site).

Conservation Objective: Restore dominance of deep-rooted perennial vegetation to 20 acres of medusahead rye to protect the surrounding 500 acres of intact low elevation rangeland in Ecological State B in the House Pasture.

Conservation Measures: #32, 37, 40 (Conservation Measure 40 will be implemented within one year of signing the SSP).

Monitoring: One representative, permanent monitoring location will be established in the proposed treatment areas and Pace 180 data, supplemented with density measurements and transect photos, will be collected prior to implementation of conservation measures to establish the baseline for trend monitoring. Trend monitoring will be repeated two and four years post treatment implementation. Subsequent monitoring intervals will be determined at this time based on the progress toward meeting the conservation objective. In addition to Lakeview SWCD conducting trend monitoring associated with medusahead control and re-vegetation treatments, the landowner has agreed to annually conduct planned searches for incipient infestations of medusahead with emphasis on roadways and livestock and ATV trails as part of an annual monitoring program.

Interpretation of Trend Indicators and Associated Triggers for Adaptive Management: Key indicators of vegetation trend will include perennial bunchgrass basal cover and density and niche occupation of interspace areas between perennial plants. An increase in the basal cover and density of perennial bunchgrasses and niche occupation by bare ground or desirable annual forbs of interspaces areas between perennial plants (i.e., not exotic annual grasses) would suggest perennial plants are fully occupying the site. An upward trend in these indicators at the representative monitoring location would suggest the applied conservation measures were successful in transitioning the ecological status of vegetation from being annual grass dominated to being perennial bunchgrass dominated. A static or downward trend in these key indicators would suggest the need for intervention with follow-up measures (e.g. weed control and/or re-vegetation treatments) to ensure progress is being made toward achieving conservation objectives.

Conservation Measures will describe the actions that will be taken to maintain or improve habitat on lands covered by the Certificate of Inclusion (CI) and are the actions agreed to within the Site Specific Plan (SSP). On some properties existing management will provide for sage-grouse habitat needs while other properties will require specific habitat improvements (conservation measures to be taken to meet sage-grouse habitat needs).

[Insert a list and a description of the specific habitat improvement techniques (conservation measures) that will be implemented on the lands covered by this agreement]

[Include a map of the areas where these activities are to be implemented]

[Insert a schedule of expected dates of implementation of Conservation Measures, or as an attachment to this SSP/CI]

L. Funding

The SWCD and the enrolled landowners will be responsible for acquiring funds for conservation implementation through use of grant money or through partnerships with State and Federal agencies, county government, non-governmental organizations, or a combination of the above. The FWS will assist through its Partners for Fish and Wildlife program, or other funding opportunities when available. The FWS will also provide technical support to the SWCD and landowners applying for funding to implement CMs. Failure to complete the funded activities within an agreed upon timeframe may result in withdrawal of the assurances provided to the landowner under the CCAA and this CI.

[Insert anticipated/potential funding sources for the activities described in this CI]

M. Duration of Site Specific Plan/Certificate of Inclusion

This SSP/CI and the coverage of "take" under the Permit are effective from the date of last signature below until expiration of the programmatic CCAA, unless terminated by either party prior to the expiration.

N. Modification of SSP/CI

Any enrolled landowner, FWS, or SWCD may propose modifications to a SSP/CI, as provided in 50 CFR 13.23. The party proposing the modification will provide a written statement to the other participating parties describing the proposed modification(s), the reason for it and the expected results. The landowner, SWCD, and FWS will use their best efforts to respond in writing to proposed modifications within 60 days of receipt of a request. Proposed modifications to a SSP/CI will only become effective upon the written concurrence of all participating parties.

If FWS determines that additional conservation measures not provided for in the CCAA are necessary to respond to changed circumstances the FWS will not require any modifications or additional CMs or CCCMs in the CCAA or the SSP/CI without the consent of the enrolled landowner, provided the SSP is being properly implemented. Modifications will be done in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act (NEPA), and the FWS's permit regulations at 50 CFR 13 and 50 CFR 17.

For each proposed modification, the FWS must determine whether the proposed modification is minor or major in nature. Minor modifications involve routine administrative revisions or changes to the operation and management program associated with a SSP/ CI, and may or may not alter the conditions of the permit. For example, a minor modification might include a change in monitoring or reporting protocols based upon recommendations from new research. Upon the written request of one of the participating parties, the FWS can approve minor modifications if it

does not conflict with the purposes of the programmatic CCAA or does not result in some material change to the FWS's NEPA analyses (i.e., with respect to meeting the CCAA standard, the amount of take authorized, the section 10 determination, or the NEPA decision). These minor modifications do not require a formal process, but do require written documentation that all participating parties approved the modification(s) prior to it becoming effective.

A major modification would either (1) result in a different level or type of take than was analyzed in association with the SSP/ CI or (2) result in a change to the cumulative conservation benefits to sage-grouse such that the CCAA standard might not be met. Major modification(s) may be subject to the procedural requirements of Federal laws and regulations, such as NEPA, and to require additional analysis by the FWS, public notification in the Federal Register, and a formal CCAA modification process. For example, a major modification might include a proposal to use an insecticide in sage-grouse habitat not specified in the SSP.

O. Termination of SSP/CI

The landowner agrees to give 30 days' written notice to the SWCD of his or her intent to terminate this SSP/CI. The landowner may terminate implementation of this SSPs voluntary management actions prior to the SSP/CI expiration date, even if the expected benefits have not been realized.

If monitoring data indicates the landowner has failed to comply with or implement agreed CMs, reporting, or other responsibilities specified and agreed upon in his/her SSP/CI, the SWCD and or FWS may revoke the landowner's SSP/CI. This will not occur without an attempt by SWCD and/or FWS to work with the landowner through an informal resolution process as outlined in *Section 22. Dispute Resolution* of the programmatic CCAA, or through other agreed-upon methods. However, if no resolution can be achieved, revocation of the SSP/CI will be effective upon receipt of written notice of revocation from the SWCD and/or FWS. The landowner will no longer be covered under the provisions of the SSP/CI and the CCAA and relinquishes any assurances and take authority specified therein.

P. Remedies

Each party shall have all remedies otherwise available to enforce the terms of the CCAA and this SSP/CI, except that no party shall be liable in monetary damages for any breach of the CCAA and this SSP/CI, any failure to perform an obligation under the CCAA and this SSP/CI, or any other cause of action arising from the CCAA and this SSP/CI.

Q. Transfer of Property

The landowner agrees to give 30 days' written notice to the SWCD of his or her intent to sell the enrolled property so the SWCD and the FWS can offer the new owner the option of receiving CCAA assurances by signing a new SSP/CI. (For further information see *Section 19. Succession and Transfer* of the programmatic CCAA).

R. Privacy Statement

The landowner provides and the SWCD receives all personal and confidential commercial information, including, but not limited to: names, contact information, general and legal description of the enrolled property, grazing practices, land use practices, commercial activities

on the land, recreational activities on the land, site-specific species sightings, and site-specific species habitat condition, regardless of the form, under the belief and obligation that the information is personal and/or commercial and is confidential in nature. The landowner and SWCD acknowledge that the release or disclosure of information may result in an unwarranted invasion of personal privacy and/or cause substantial harm to the commercial interest of the landowner. Accordingly, SWCD will, to the maximum extent available under federal, state, and local law, protect against disclosure of the information by utilizing a case by case review and determination.

S. Notice of Possible Disclosure

In the event that a request for information is made to SWCD that would result in the possible disclosure of personal and/or commercial confidential information, the impacted landowner shall receive notice of the request. Additionally, the landowner shall be provided with the opportunity to state, orally or in writing, why a release of the requested information would constitute a clearly unwarranted invasion of privacy and/or cause substantial harm to the his/her commercial interest.

CERTIFICATE OF INCLUSION

This document represents a binding contract between the LakeviewSoil and Water Conservation District (LSWCD) and [NAME OF COOPERATOR (tract # will be assigned for file retention)]. In consideration of the commitment by [NAME OF COOPERATOR (tract # will be assigned for file retention)] to comply with all applicable terms of the Candidate Conservation Agreement with Assurances (CCAA) as defined in the accompanying Site Specific Plan, LSWCD hereby certifies that the property described as follows [DESCRIPTION (tract # will be assigned for file retention)], is included within the scope of the Enhancement of Survival permit issued by the U.S. Fish and Wildlife Service on [DATE] (Permit No._____) to LSWCD under the authority of § 10(a)(1)(A) of the Endangered Species Act. 16 U.S.C. § 1539(a)(1)(A). The Permit allows certain activities by participating landowners to maintain, restore, and enhance habitat for sage-grouse, while providing incidental take coverage for associated habitat enhancement and routine ranching activities. The parties to this contract agree that, in the event that [NAME OF COOPERATOR (tract # will be assigned for file retention)] breaches the commitment to comply with the CCAA, LSWCD may suspend or revoke this certificate. In addition, the U.S. Fish and Wildlife Service may suspend or revoke this certificate for cause in accordance with 50 C.F.R. §§ 13.27, 13.28 and 17.22(c)(7), or if [NAME OF COOPERATOR (tract # will be assigned for file retention)] becomes disqualified under 50 C.F.R. § 13.21(c).

_____ _____

Private Landowner (A tract # will be assigned for file retention) Date

_____ _____

Board Chair Date
Lakeview Soil and Water Conservation District

APPENDIX C – State and Transition Models

The **overall management goal** is to facilitate maintenance of, or transition to, a desired ecological state (state "A" or "B") using an ecologically-based model (see state and transition diagrams for low elevation, high elevation, and riparian habitat shown in Figures 2-4) that can serve the habitat needs of sage-grouse. Once this state is achieved, additional conservation measures may be used to further increase the quality/value of sage-grouse habitat (e.g., timing of grazing in nesting habitat) or mitigate species-specific threats (e.g., raptor perches in the vicinity of critical habitat). However, focusing on species-specific conservation measures in habitat that is in or at risk of transition to a non-desired state (states "C", "D", or "E") can divert resources from addressing underlying ecological issues that ultimately define the current and future value of such habitats to sage-grouse and other sagebrush obligate wildlife species. For this reason, an ecologically-based model will be used to determine inventory, monitoring, and conservation needs during the site specific planning process.

The states in the models will be determined by a combination of information including: 1) NRCS ecological site descriptions; 2) data collected during the baseline inventory; 3) best professional judgment; 4) local climatic variation; 5) site history and other information collected as outlined in *Section 6. Inventory and Monitoring Protocols*, of this CCAA. Recovery of shrub-steppe habitat is slow (varies greatly from 20 -100 years depending on pre-disturbance state) and the CCAA is a 30-year permit, therefore the threshold for meeting the objectives in states A or B is that the vegetation on the site is trending towards the desired plant community. The restoration potential of the other states (C, D and E) depends on the degree of degradation; objectives for states C, D, and E will need to be based upon degree of degradation and probability of success of treatments.

Ecological States and their relationship to sage-grouse habitat

It is important to note that much of the knowledge base concerning vegetation composition and structure in habitats used by sage-grouse has been based on small (patch) scale measurements that reflect the immediate vicinity of the location of radio-marked or flushed birds (e.g., Gregg et al. 1994; Sveum et al. 1998; for detailed information on sage-grouse habitat at the patch scale see Connelly et al. 2000 and Hagen et al. 2011). This is significant because large-scale monitoring efforts (including procedures described in this document) are most feasible at the plant community scale or larger and current knowledge of successional change in the sagebrush steppe is firmly based on relationships described at the plant community scale. This discrepancy in scale can lead to problems when plant composition at the plant community scale is expected to conform to idealized vegetation attributes based on smaller scale measurements. For example, working at the community scale, Davies et al. (2006) examined over 100 "late-seral" Wyoming big sagebrush communities and reported that: "No sites met the nesting or optimum brood-rearing habitat vegetation cover values suggested by Bureau of Land Management (2000). Mesic and arid breeding vegetation cover values suggested by Connelly et al. (2000) were met by 0% and 18% of the sites, respectively". Additionally, in a meta-analysis of sage-grouse nesting and brood rearing habitats Hagen et al. (2007) determined that sagebrush cover, grass cover and grass height was greater at nest sites than at random points and vegetation at brood areas contained less sagebrush, taller grasses and greater grass and forb cover than random sites. Understanding the optimum mix and spatial arrangement of these communities and their effects

on demographic rates in a landscape could substantially enhance sage-grouse management. Furthermore, in the 2010 Warranted but Precluded Finding USFWS identified threats contributing to sage-grouse habitat fragmentation and loss that occur at the plant community and larger scales. The Finding went on to suggest that local regulatory mechanisms be developed/strengthened to address known threats to sage-grouse. Such mechanisms will logically occur at scales consistent with the identified problems. It thus follows that assessment of habitat and monitoring of the effectiveness of implemented conservation measures will be conducted at a scale consistent with the identified threats and the conservation measures designed to address those threats. Therefore, the focus in this document is at the scale of the plant community and the monitoring procedures reflect that scale-specific focus. Thus, the intent is to use best available knowledge to promote a sustainable composition of plants (termed "states" in these models) that provides elements necessary for sage-grouse habitat at the plant community scale.

The use of a color-coding system to label habitats as year-around (green), seasonal (yellow), or non-habitat (red) is based on the presumption of the presence or absence of specific vegetation components that comprise different elements of sage-grouse habitat. Those presumptions are based on characterizations of sage-grouse habitat elements as described by Crawford et al. (2004). Focusing on the low and high elevation models, different habitat needs with different vegetation states can be associated, and the sum of those associations can be used to broadly characterize habitat as year-around, seasonal, or non-habitat. However, just because a state may be suitable for, for example, nesting habitat, that doesn't mean that it is currently being used or will be used in the future for nesting purposes. That said, in both the ***low and high elevation models, states A and B*** have the potential to support ***nesting activities***, although the suitability of state B for this purpose could be limited by sagebrush abundance in some cases. ***Brood-rearing habitat*** could occur in either ***state A or B, although riparian areas in other states*** have potential to provide late season brood-rearing habitat. For the ***low elevation model, winter habitat*** will be associated primarily with states ***A and D***, and in the ***high elevation model winter habitat*** would be mainly in ***state A***.

Breeding Habitat:

- During the spring lekking period, sage-grouse use areas of low-statured vegetation (both shrubs and herbaceous) for purposes of display and breeding. There is strong fidelity to particular lekking sites and this habitat type is rarely limited on a landscape basis. Nesting habitat can be thought of as being comprised of two distinct time elements.
- During the pre-laying period, which is the month prior to actual nesting, female sage-grouse continue to eat sagebrush but focus a growing portion of their diet on protein-rich forbs, which are thought to increase the nutritional status of the birds prior to the upcoming nesting period.
- Sage-grouse typically nest under mature sagebrush, or in some cases other shrubs, and during the nesting period rely on perennial bunchgrasses in the immediate vicinity of the nest to provide screening cover from nest predators. Potential cover and height values for perennial grasses will vary strongly based on both ecological site and yearly conditions. Nests are often located near (e.g., < 3 km) lekking sites, but hens may move large distances from leks for nesting purposes. Mature sagebrush with umbrella-shaped canopies may provide increased screening cover of nests and this canopy shape also helps

to decrease grazing of under-shrub screening cover by cattle (France et al. 2008).

Brood Rearing Habitat:

- As with nesting, the brood-rearing period can be broken into distinct time phases. During **early brood-rearing**, the diet of chicks is focused on forbs and insects (chicks are actually obligate insectivores for roughly the first two weeks of life). From a vegetation standpoint, these habitats are often represented by areas of reduced sagebrush canopy cover, with increased herbaceous expression. As the growing season progresses, broods move into **late brood rearing habitat**, which is determined largely by the presence of succulent vegetation; primarily forbs, although some sagebrush is consumed. This succulent vegetation is often associated with riparian areas or seeps, however, broods may also migrate up in elevation, effectively staying ahead of the advancing desiccation.

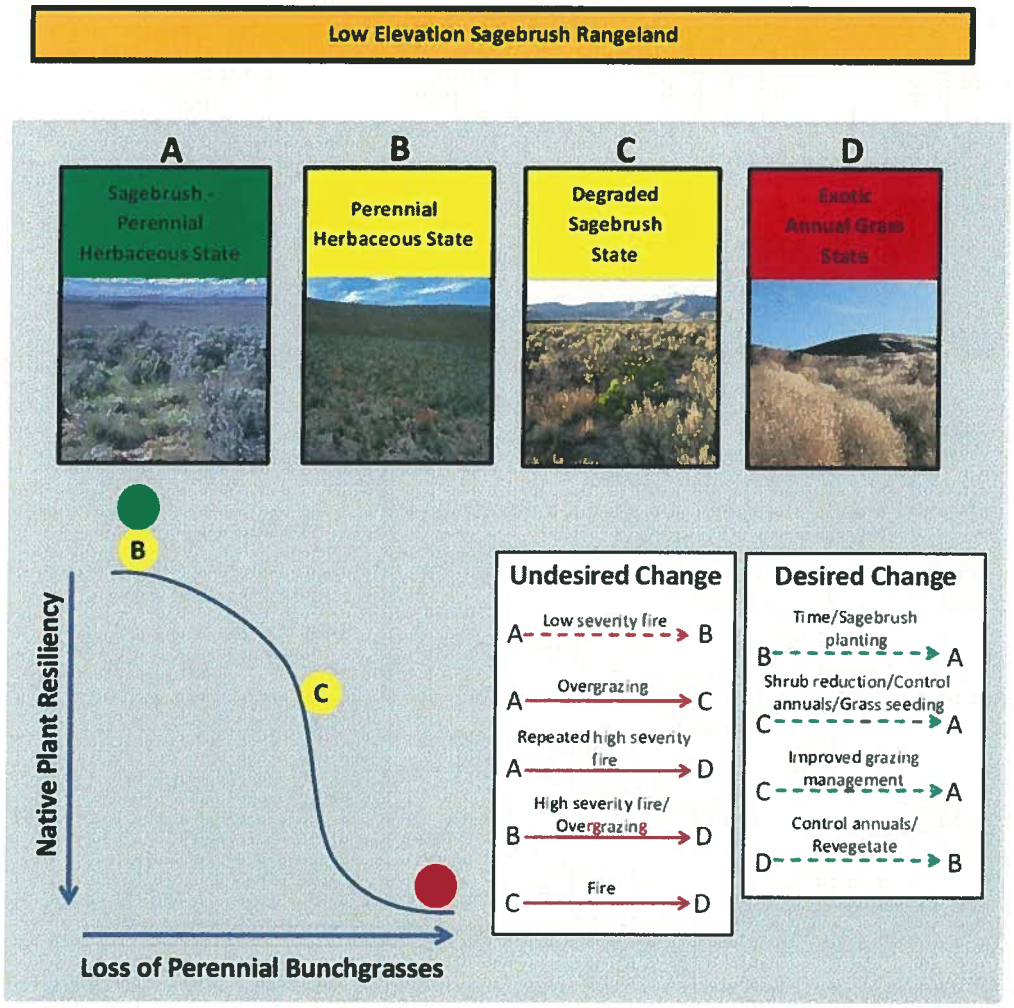
Winter Habitat

- The critical vegetation component during the **winter period** is sagebrush, given that winter diets are comprised almost entirely of sagebrush. Shrub height may or may not be important, depending on context. On sites with deep snow, a certain height is obviously necessary to ensure food availability and mature big sagebrush (*Artemisia tridentata* Nutt. ssp.) is of high importance, however, sage-grouse have also been reported to use smaller-statured low sagebrush (*Artemisia arbuscula* Nutt.) on wind-swept ridges with minimal snow cover.

Interpretation

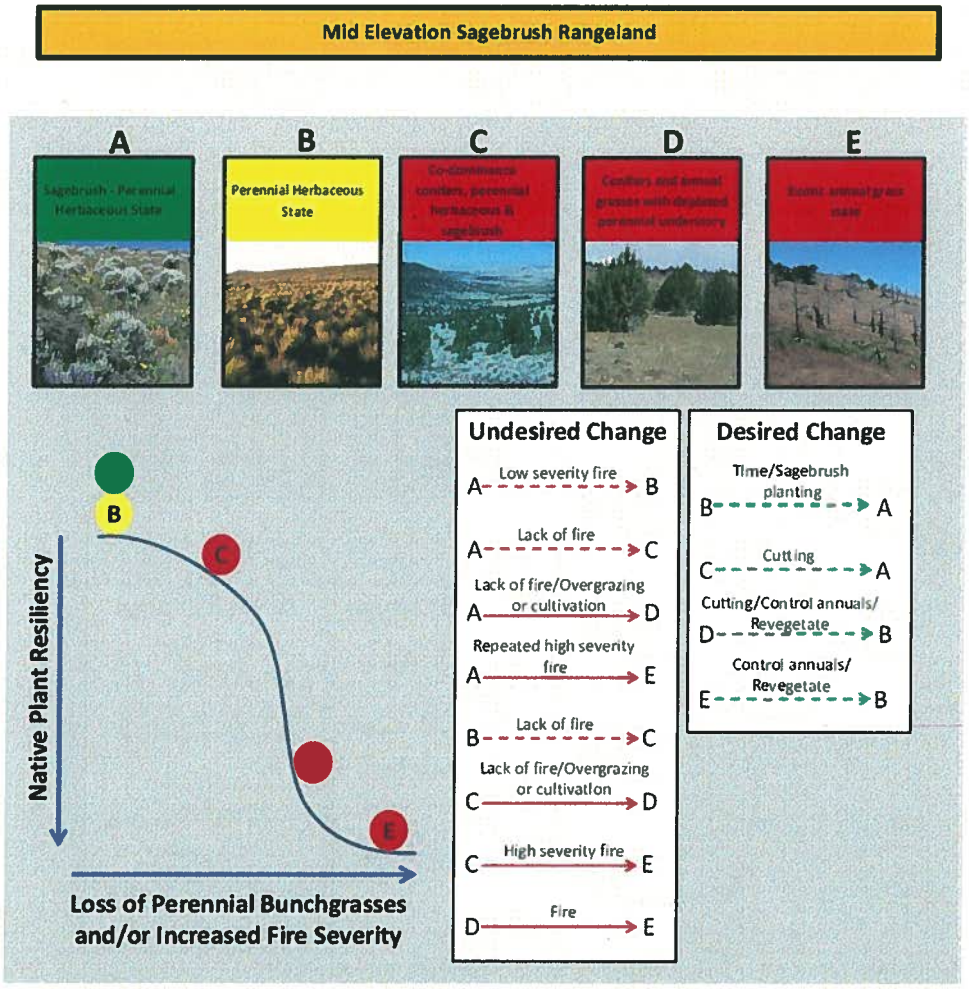
While state and transition models are typically viewed as being site specific, it is critical to recognize the consequences of spatial connectivity between vegetation states across the larger landscape. For example, a low elevation vegetation community in state "A" provides for year-around sage-grouse habitat. However, if a given community in this state is set within a larger landscape comprised mainly of low elevation state "C" (i.e., annual grass-dominated), then fire risk to state "A" will increase dramatically, suggesting that conservation measures to reduce annual grass abundance in the larger landscape will have significant implications to the security of state A. This example illustrates that conservation measures may have value to sustaining existing sage-grouse habitat, even if these measures are applied in locations that are currently non-habitat, and reinforces the importance of considering spatial connectivity between vegetation communities across the landscape when defining threats and associated conservation measures. This same concept can also be applied over time. For example, during wet years fuel accumulations across the landscape may be high enough to create high fire danger for most vegetation communities, regardless of what "state" they are in. In such cases, conservation measures to reduce fuel loading could be applied generally, regardless of vegetation state, to reduce risk of wildfire. This example illustrates that conservation needs vary over time and that application of conservation measures must take place within the framework of adaptive management.

Figure 8. Low elevation sagebrush state and transition model.



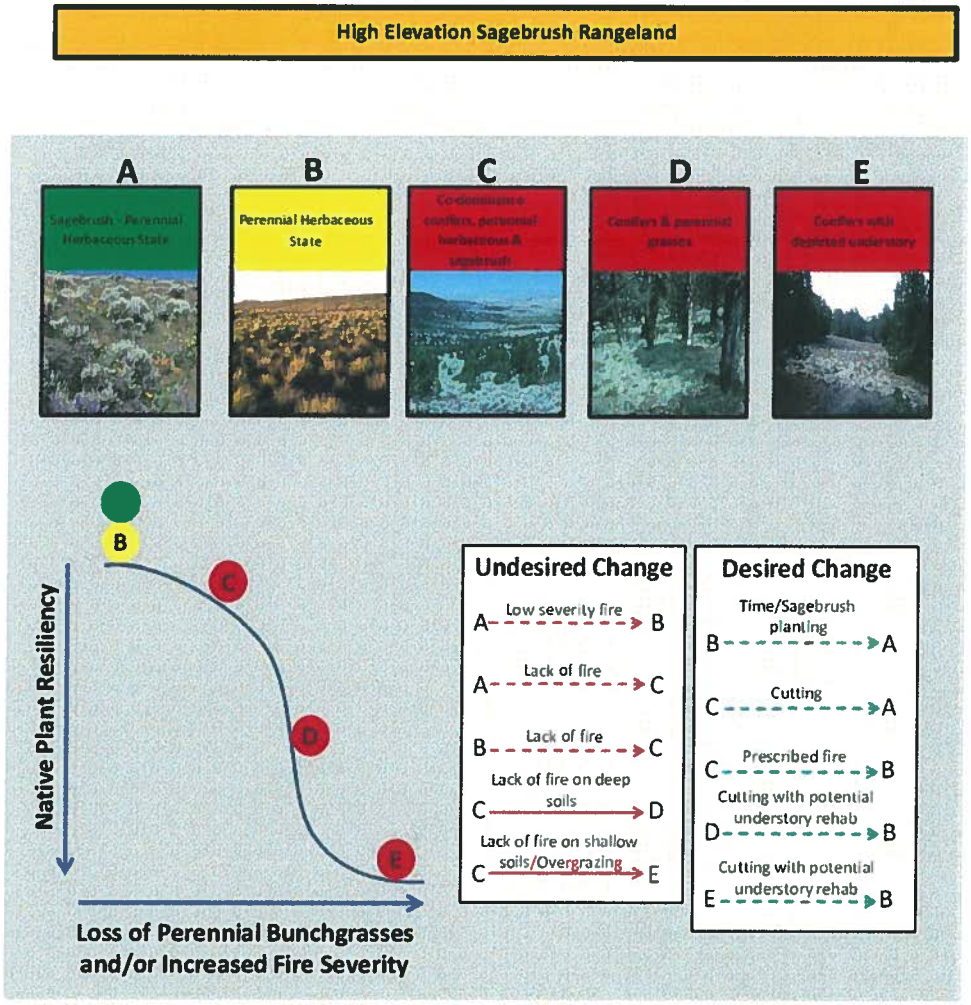
Conceptual ecological framework for managing sage-grouse habitat using a generalized state-and-transition model for **low elevation sagebrush plant communities in Oregon with warm and dry or cool and dry soil temperature/moisture regimes** (Miller et al. 2013). Resiliency will be lower for communities on warm and dry sites. States (top) shaded in green indicate potential year-round habitat suitability for sage-grouse. States in shaded yellow and red indicate potential seasonal habitat and non-habitat, respectively. "Native plant resiliency" (lower left) indicates the relative likelihood of a plant community to recover to a native plant-dominated state following disturbance and decreases with loss of large perennial bunchgrasses. Persistent transitions (lower right) between states are depicted with solid arrows, while non-persistent transitions are arrows with dotted lines.

Figure 9. Mid Elevation Sagebrush State and Transition Model



Conceptual ecological framework for managing sage-grouse habitat using a generalized state-and-transition model for **mid to high elevation sagebrush plant communities in Oregon with a warm and moist soil temperature/moisture regime** (Miller et al. 2013) in Oregon. States (top) shaded in green indicate potential year-round habitat suitability for sage-grouse. States in shaded yellow and red indicate potential seasonal habitat and non-habitat, respectively. "Native plant resiliency" (lower left) indicates the relative likelihood of a plant community to recover to a native plant-dominated state following disturbance and decreases with loss of large perennial bunchgrasses and increasing fire severity. States with increased woody plant fuel loading (e.g. D) can be less likely to burn due to decreased fine fuel loading, but more likely to experience higher severity fire when they do burn (Miller et al. 2008). Persistent transitions (lower right) between states are depicted with solid arrows, while non-persistent transitions are arrows with dotted lines. Warm and dry sites often occur at the same elevation as cool and moist conditions, with differences being driving largely by aspect or other abiotic factors. Prescribed fire is depicted as a management option for reducing conifers on cool and moist sites, but not warm and dry sites, due to the potential for transition to annual grass dominance with fire in the latter.

Figure 10. High elevation sagebrush state and transition model.

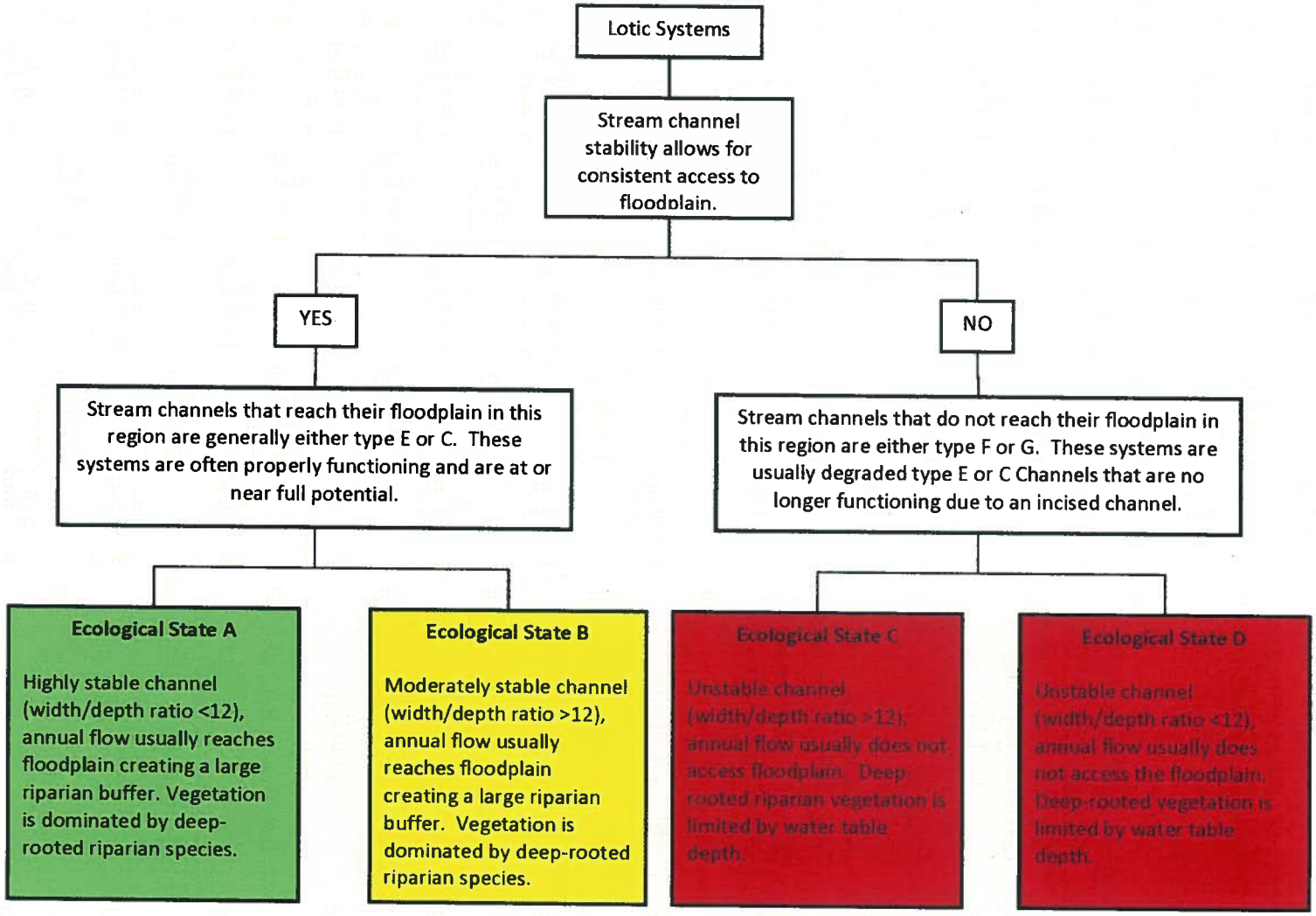


Conceptual ecological framework for managing sage-grouse habitat using a generalized state-and-transition model for **high elevation sagebrush plant communities in Oregon with a warm/cool and moist soil temperature/moisture regime** (Miller et al. 2013) in Oregon. States (top) shaded in green indicate potential year-round habitat suitability for sage-grouse. States in shaded yellow and red indicate potential seasonal habitat and non-habitat, respectively. "Native plant resiliency" (lower left) indicates the relative likelihood of a plant community to recover to a native plant-dominated state following disturbance and decreases with loss of large perennial bunchgrasses and increasing fire severity. States with increased woody plant fuel loading (e.g. D and E) can be less likely to burn due to decreased fine fuel loading, but more likely to experience higher severity fire when they do burn (Miller et al. 2008). Persistent transitions (lower right) between states are depicted with solid arrows, while non-persistent transitions are arrows with dotted lines.

Figure 11: Riparian state and transition model.

The **management goal is** to facilitate maintenance of, or transition to, a desired riparian state using a hydrology-based model. These states will be determined using Rosgen's stream classification guide, focusing primarily on stream channel classifications that can serve or have the potential to serve the habitat needs of sage-grouse and excluding those not applicable to this area (type D) or too high gradient (type A and B channels). The Lake County region will be dealing primarily with lower gradient type E, C, F, and G channels. The functional riparian systems will be characterized by type E and C channels. E shape channels are characterized by their high sinuosity, well-vegetated banks, and low width/depth ratio. C shape channels have similar access to floodplain and well-vegetated banks, but have a higher width/depth ratio and possible slight entrenchment. Type F and G channels are typically going to be degraded C or E channel streams that have been incised and lost regular contact with their flood plain. Down cutting lowers the water table and prevents riparian bank vegetation access to adequate moisture. Entrenchment is the major characteristic of both F and G channel shapes. The major difference is the high width/depth ratio of F channels and the low width/depth ratio in G channels. Transitions between riparian states can be addressed through various conservation measures, which address ecosystem threats such as unmanaged grazing, juniper/conifer expansion, invasive vegetation management, catastrophic flooding events, and mechanical degradation. Proper Functioning Condition (PFC) can be utilized to identify the factors influencing change between riparian states and is used by management professionals, such as those at the Lakeview Soil and Water Conservation District (SWCD), to direct future conservation strategies.

Figure 12: Lotic systems



APPENDIX D – Inventory and Monitoring

The basic method of upland trend monitoring used in this CCAA is a modified Pace 180° with step-point and density measurements with plot photos and landscape photos in cardinal directions, as described below. However, the CCAA provides the SWCD with the flexibility to employ (with the concurrence of the landowner) the most efficient, generally accepted rangeland monitoring methodologies to measure change in ecological states as related to specific objectives in the SSP.

Upland Trend Monitoring

- The Pace 180° Method is a quantitative procedure for monitoring vegetation trend. It involves documenting groundcover "hits" using the toe of a boot along a pace transect at specified intervals. This method provides an estimate of ground cover (bare ground, litter, rock, perennial vegetation, annual vegetation, moss, and biological soil crusts), basal cover of perennial herbaceous plants (grasses and grass-like plants and forbs), foliar cover of woody species (trees and shrubs), and perennial plant composition (see Johnson and Sharp, 2012).
- The Step-Point method employs a long pin flag or piece of welding rod dropped at the toe of the forward boot along a pace transect to arrive at an estimate of cover. While holding the pin flag vertical at the toe of the observer's boot, he or she records all vegetation interceptions along the full length of the pin beginning with top vegetation layers and working down the pin flag to the soil surface. It measures cover for individual species, total cover, and species composition by cover. Pace 180° and Step-Point measurements will be collected every pace along a 100-point pace transect amounting to 100 samples (see Herrick et al., 2005 for a detailed description of the Step-Point Monitoring Method).
- Density of perennial vegetation by species will be recorded every 5th pace in a 0.25 m^2 frame; amounting to 20 density measurements for each transect. Density is simply the number of plants per unit area. It is a particularly useful measurement for monitoring sagebrush rangelands in which the herbaceous understory is typically dominated by perennial bunchgrasses. Density is less well-suited to areas that support rhizomatous perennial grass species because of difficulties associated with identifying and counting individual plants. Density of perennial bunchgrasses is perhaps the best indicator of the resistance of sagebrush rangeland to conversion to undesirable vegetation states. A 3'x 3' photo plot will be established at the starting point of the modified Pace 180° transect (see Johnson and Sharp 2012 for a detailed description of placement of the photo plot). A landscape photo will be taken from the 3'x 3' photo plot toward a permanent reference point that defines the direction of the modified Pace 180° transect. Landscape photos will also be taken in the cardinal directions from the 3'x 3' photo plot.
- Repeat Photo Monitoring involves establishing a permanent photo plot and periodically taking both ground level and transect view photographs. Comparing pictures of the same site taken over a period of years provides visual evidence of vegetation and soil trend. A properly located permanent photo point allows observation of changes in important rangeland attributes including plant species composition, total plant cover, perennial plant density, litter, spatial pattern of plants, plant vigor, and soil erosion. The form for recording data using the modified Pace 180° method is shown in Appendix D-1.

Riparian Inventory and Trend Monitoring

The upstream and downstream ends of each long term or trend monitoring location and any other critical area will be marked with rebar. These permanent locations will be used as repeat photo monitoring points. Photographs will be taken looking both upstream and downstream of each point and repeated periodically to assess stream movement (lateral and down cutting) and provide evidence of vegetative trend. If the ocular assessment indicates ≥ 70% groundcover of deep-rooted riparian plant species or anchored rock (i.e. riparian ecological state A) then monitoring will consist of trend photos only; however, if future photos indicate downward trend, then further assessments such as Proper Functioning Condition (PFC) and Multiple Indicator Monitoring (MIM) are recommended. If the ocular assessment indicates < 70% groundcover of deep-rooted riparian plant species or anchored rock (i.e. riparian ecological states B or C) then additional assessments are recommended. Further assessment for stream segments with 50-69% groundcover of deep-rooted riparian plant species or anchored rock (riparian ecological state B) may include other qualitative measurement tools, such as PFC, which identify factors influencing change within riparian systems. If the stream is shown to be "functional-at risk" or "nonfunctional" according to PFC classifications, or has <50% groundcover of deep-rooted riparian plant species or anchored rock (riparian ecological state C) upon ocular assessment, then remedial conservation measures may be required to improve riparian conditions. If conservation measures are required, a quantitative monitoring technique should be used to evaluate long term trend. One suggested quantitative trend monitoring technique is the MIM method, which combines observations of up to 10 indicator variables (BLM, TR 1737-23) that can be used to monitor long term trend, short term trend, and current condition along a specified stream reach to gauge progress toward management objectives. The decision to perform long term monitoring and the specific quantitative monitoring technique will be left to the discretion of the SWCD and the landowner.

APPENDIX D-1 - Modified Pace 180° Method Form

VEGETATION TREND MONITORING

Methodology _____ Ranch _____

Pasture _____ Observer(s) _____ Date _____

Transect No. _____ Veg. Type _____ Ecological Site _____

Top Layer																					
Code 1																					
Code 2																					
Code 3																					
Soil Surface																					
Nearest Plant																					
Toe Hit																					
Top Layer																					
Code 1																					
Code 2																					
Code 3																					
Soil Surface																					
Nearest Plant																					
Toe Hit																					
Top Layer																					
Code 1																					
Code 2																					
Code 3																					
Soil Surface																					
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Code 2																					
Code 3																					
Soil Surface																					
Nearest Plant																					
Toe Hit																					
Top Layer																					
Code 1																					
Code 2																					
Code 3																					
Soil Surface																					
Nearest Plant																					
Toe Hit																					

Soil Surface (do not use litter):
Species Code
(for basal intercept)

R = rock fragment (> 1/4 " diameter)
BR = bedrock
M = moss
LC = lichen
S = soil
EL = embedded litter
D = duff

Top Canopy Codes:
Species code
Common Name
NONE (no canopy)

Lower Canopy Codes:
Species Code
Common Name
L (herbaceous litter)
W (woody litter >1/4")

Comments:

Additional comments on back

APPENDIX D-1– Modified Pace 180° Method Form Continued

VEGETATION TREND MONITORING

Methodology _____ Ranch _____

Pasture _____ Observer(s) _____ Date _____

Transect No. _____ Veg. Type _____ Ecological Site _____

PLANT DENSITY (Plants/0.25 m^2)

Frame	1		2		3		4		5		6		7	
Plant Species / Functional Group	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile

Frame	8		9		10		11		12		13		14	
Plant Species / Functional Group	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile

Frame	15		16		17		18		19		20		REMARKS ON BACK
Plant Species / Functional Group	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile	

APPENDIX D-2–Site Documentation Form

Page____of____

Site Location and Documentation Data

Study (Transect) Number		Study Method	
Ranch/Project Area		Pasture	
Ecological Site ID		Plant Community	
Established by (Name)		Date Established	
Map Reference			
Elevation	Slope	Aspect	Aerial Photo Reference

Township Range Section ¼ ¼ ¼

GPS Coordinates:

Scale: _____ inches equals one mile

Key Species				
1 2 3				
Distance and bearing between reference post or reference point and the transect location stake, beginning of transect, or plot.				
Transect Length				
Transect Bearing				

Notes (Description of study location, diagram of transect/plot layout, description of photo points, etc. If more space is needed, use reverse side or another page.)

Appendix D-3 Annual Grazing and Habitat Summary Form

ANNUAL GRAZING AND HABITAT SUMMARY

_____ GRAZING SEASON

Ranch Name (tract # will be assigned for file retention)_____

Pasture Name (tract # will be assigned for file retention)_____

Yield Index_____ Weather Station _____

Was there effective precipitation for early growth or regrowth? Yes No

Indicators of Resource Conditions (check relevant indicators):

Fire Riparian Insects Weeds Nutrient CyclingWildlife Habitat

Trespass Drought Watershed Function Utilization Wolf Plants

Livestock Distribution Range Improvements Deviation in system or Season of use

Summary of field notes, observations and data that describe range, livestock, and habitat conditions at the end of the year.

Description of actions, events, or activities that may have caused resource objectives to be met, not met, or moved toward or away from. Recommended changes for next grazing season.

Individuals providing input or review: _____, _____,

_____,_____,_____,_____,

_____. DATE: _____

APPENDIX D-4–Baseline Inventory

The Upland Ecological State Documentation Form and the Riparian Ecological State Documentation Form are ocular assessments that will document each ecological state within a pasture and will provide the basis for selecting representative areas for each stratum, where quantitative data will be collected and serve as permanent monitoring sites for the management unit. For uplands, indicators will be surveyed within strata by applying the intuitive random meander method (Nelson 1984) that traverses each stratum. Sampling of each stratum should be conducted; however, certain strata (e.g., low elevation state C) will likely require less intensive observation for confirmation than areas preliminarily identified as year-round or seasonal sage-grouse habitat.

The Upland Ecological State Documentation Form and the Riparian Ecological State Documentation Form will be used to document each strata, by:

- ground truthing preliminary ecological state strata. The procedure for ground confirming preliminary ecological state strata will largely rely on an ocular assessment of key indicators within each stratum.
- making adjustments to boundaries of mapped ecological states when field observations reveal deviations from preliminary strata.
- taking a landscape photo with coordinates which represents the existing ecological state.

Upland Ecological State Documentation Form

Ranch _____ **Observer(s)** _____

Management Unit _____ **Date** _____

Preliminary Ecological State Designation _____

Ecological State Confirmed by Ocular Assessment _____

Vegetation Type _____ **Habitat Function** _____ **Acreage** _____

Transect Coordinates: Start _____ End _____

Rep. Landscape Photo_____

Dominant Plant Species List:

Grasses	Forbs	Shrubs

Estimated average density of mature, large perennial bunchgrasses (individuals/m^2): _____

Sagebrush present? ___NO ___YES; if yes, species _____Estimate of sagebrush cover_____

Juniper present? ___ N/A ___NO ___YES; if yes, Estimate of juniper cover: _____ Phase of encroachment:_____

Exotic annual grass present? ___NO ___YES; if yes, species _____ Phase of Invasion[1]: _____;

Infestations mapped? ___NO ___YES; if yes, date mapped _____

Other weeds present? ___NO ___YES; if yes, species _____ _____ _____;

Infestations mapped? ___NO ___YES; if yes, date mapped _____

Key area(s) identified in ecological state stratum? ___NO ___YES; if yes, location(s):_____

_____ _____ _____

Potential Threats (check those present):

Threat	Present	Threat	Present	Threat	Present	Threat	Present
Fragmentation		Unmanaged Grazing		Flooding		Feral Horses	
Wildfire		Invasive Vegetation		Recreation		Insecticide	
Vegetation Treatment		Lack of Fire		Predation			
Juniper Encroachment		Drought		WNv			

Notes:

---

[1] **Phase I:** Interspaces primarily bare ground (≥90% interspaces bare ground) and multiple bunchgrass age classes represented; generally associated with Ecological States A & B. **Phase II:** Exotic annual grasses present at intermediate levels in interspaces (≤ 50% interspaces occupied by exotic annual grasses) and multiple bunchgrass age classes represented; generally associated with Ecological States A & B that are at risk of conversion to Ecological States C & D. **Phase III:** Interspaces primarily occupied by exotic annual grasses (>50% interspaces occupied by exotic annual grasses) and ≤ 1 bunchgrass age class represented; generally associated with Ecological States C & D.

Riparian Ecological State Documentation Form

Ranch _____ **Observer(s)** _____

Management Unit _____ **Date** _____

Plant Functional/Structural Groups Represented (box dominant groups; circle subdominant but common groups):

Conifers	Deciduous Trees	Riparian Shrubs	Riparian Bunchgrasses	Riparian Rhizomatous Grasses	Native Forbs
Upland Perennial Grasses	Sedges	Rushes	Upland Shrubs	Exotic Grasses	Exotic Forbs

---

Greenline Vegetation Composition[12]:

___ ≥ 70% Groundcover of deep-rooted riparian species and anchored rock

___50-69% Groundcover of deep-rooted riparian species and anchored rock

___< 50% Groundcover of deep-rooted riparian species and anchored rock

---

Potential Threats (check those present):

Potential Threat	Present	Potential Threat	Present	Potential Threat	Present
Excessive Lateral Movement		Mechanical Degradation		Juniper Encroachment	
Downcutting		Catastrophic Flooding		Recreation	
Invasive Vegetation		Drought		Unmanaged Grazing	

Ecological State Confirmed by Ocular Assessment_____

Designated Monitoring Area (DMA) Coordinates:

Upstream _____ _____

Downstream _____ _____

---

[12] *Greenline Vegetation Composition:* Groundcover of deep-rooted riparian species and anchored rock will be used as an indicator of stream channel condition. It involves the documentation of groundcover "hits" using the toe of a boot along 100 paces of the upstream and downstream greenlines of each stream segment. When the toe comes in contact with deep-rooted riparian species it is recorded and the total number of "hits" is then divided by the total paces (e.g. 140 hits divided by 200 paces = 70% groundcover).

APPENDIX E – Herbicides and Best Management Practices

A major threat to sage-grouse within the CCAA area is the loss of habitat quality and quantity due to the increase of exotic invasive plant species (noxious weeds) replacing native sagebrush plant communities.

Herbicide use

Herbicide application used alone or in combination with other methods may be used where appropriate to provide a feasible and effective strategy for controlling invasive species and preparing sites for desirable sage-grouse habitat restoration. Specific herbicides anticipated for restoration and management of sage-grouse habitat or potential habitat are described in further detail below. They were chosen for maximum effectiveness against wild land weeds and least environmental and non-target species' risks.

Background

The herbicide list for this CCAA includes 19 herbicides. Seventeen of those tier to the *Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS July 2010* (FEIS) and related Record of Decision dated October 1, 2010. This July 2010 Oregon Final Environmental Impact Statement tiers to the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) and related Record of Decision completed in 2007, by the BLM Washington Office Rangelands Resources Division; this set of documents made 17 herbicides available for a full range of vegetation treatments in 17 western states, including Oregon. The additional two herbicides are aminopyralid and rimsulfuron. The BLM intends to prepare an Environmental Impact Statement (EIS) to evaluate the use of these two herbicides in its vegetation treatment programs on public lands in 17 Western States (Federal Register, Volume 77, Number 246, Dec. 21, 2012). The risk assessment for these two chemicals (aminopyralid and rimsulfuron) have been completed and no additional best management practices will be required than those identified in the July 2010 FEIS that this document is tiered towards and are outlined below. (BLM 2014 e-mail communication)

Sage-grouse Consideration

Both the *Sage Grouse Conservation Assessment* (Connelly et. al 2004) and *Ecology and Conservation of Greater Sage Grouse: A Landscape Species and Its Habitats* (USGS 2009) were reviewed and considered in preparation of the Oregon FEIS. Invasive plant treatments in infested sage-grouse habitats would be part of restoration projects carefully designed to benefit sage-grouse.

Consistency with Labels and Laws

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) establishes procedures for the registration, classification, and regulation of all herbicides. Before any herbicide may be sold legally, the EPA must register it. The EPA may classify an herbicide for general use if it determines that the herbicide is not likely to cause unreasonable adverse effects to applicators or the environment, or it may be classified for restricted use if the herbicide must be applied by a certified applicator and in accordance with other restrictions. The herbicide label is a legal document. Federal, state, and local law and all herbicide label requirements will be adhered to.

Herbicides may be used only for the objectives and type of vegetation for which they are registered, as displayed on the herbicide label.

Best Management Practices

1. All manufacturer's label requirements and restrictions will be followed and recommendations will be used as appropriate.
2. To minimize risks to terrestrial wildlife, do not exceed typical application rates for applications of dicamba, diuron, glyphospate, hexaxinone, tebuthiron, or triclopyr, where feasible.
3. Conduct a pretreatment survey. This may include, but is not limited to, flagging areas for treatment, determining what noxious or invasive species are within the area, defining the extent of area, and completing a through overview of the area before applying herbicides.
4. Minimize the size of application area and use spot applications or low boom broadcast where possible to limit the probability of contaminating non-target food and water sources, when feasible.
5. Where practical, limit glyphosphate and hexazinone to spot applications in grazing land and wildlife habitat areas to avoid contamination of wildlife food items.
6. Clean Off Highway Vehicles (OHVs) to remove plant material and herbicide residue to minimize impact to non-target sites.
7. Sprayers will be set to minimize drift (e.g., with low nozzle pressure, large droplet size, low nozzle height) to the extent practical and feasible.
8. Dyes may be used for herbicide application to ensure complete and uniform treatment of invasive plants as well as to immediately indicate drift issues.
9. Do not use adjuvant R-11.
10. Either avoid using glyphosphate formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risk to amphibians.
11. Do not use bromacil or diuron in rangelands and use appropriate buffer zones.
12. To minimize disturbance to sage-grouse populations, do not conduct aerial or ground broadcast applications of herbicides during nesting and early-brood rearing periods when sage-grouse are present (March 1 – June 30, at a minimum), unless this timeframe or target plant development stage is optimal for herbicide effectiveness.
13. Most activities covered under this CCAA will occur on uplands, however, if herbicide treatments are planned in ephemeral or perennial watercourses where listed fish may occuradditional coordination with the Service should occur.

Herbicides

It is also noted that during the 30-year life of this agreement many technological changes for control of invasives such as biological agents and herbicides will be developed for use on rangelands and may be applied to improve sage-grouse habitat. As such herbicides and biological control agents are approved by Environmental Protection Agency (EPA) and Oregon Department of Agriculture (ODA) for use on rangelands, they will be considered for use under this umbrella document to improve sage-grouse habitat. As previously noted, this document lists 19 specific herbicides, however if other herbicides or biological agents are anticipated to be applied on enrolled rangelands, agricultural and crop lands, an analysis will be conducted by SWCD. This analysis will assess the risk associated with application of proposed chemicals, and if needed,

additional Best Management Practice(s) will be developed (e.g., a different timing recommendation for herbicide application). For permit coverage, use of herbicides other than the following 19 listed will require a modification consistent with *Section N. Modification of SSP/CI* in Appendix B or with *Section 18. Modification of Programmatic CCAA*.

Herbicides can be categorized as selective or nonselective. Selective herbicides kill only a specific type of plant. For example, an herbicide selective for broadleaved plants can be used to manage such species while maintaining desirable grass species in rangeland communities. Non-selective herbicides kill all types of plants, and thus should only be applied to the target species. Herbicides can be used selectively to control specific types of vegetation (e.g. killing invasive weeds), or non-selectively to clear all vegetation on a particular area (e.g. keeping a roadway clear of vegetation). Some herbicides are post-emergent, which means they can be used to kill existing vegetation; others are pre-emergent, which stops vegetation before it grows (e.g. prohibiting seeds from germinating).

List

2, 4-D
Product(s): Many, including Amine, Hardball, Unison, Saber, Salvo, Aqua-Kleen, and Platoon
Common Targets: Annual and biennial broadleaf weeds. *Kochia, whitetop, perennial pepperweed, Russian thistle and knapweed, sagebrush, rabbitbrush.* Selective to broadleaf.
Application: Post-emergent
Point of application: foliar

Bromacil
Product(s): Hyvar
Common Targets: Annual grasses and broadleaf weeds. *Cheatgrass, puncturevine, ragweed, wild oat, dandelion, quackgrass, wildcarrot.* Nonselective.
Application: Pre- and post-emergent
Point of application: soil

Chlorsulfuron
Product(s): Telar
Common targets: Thistles, wild carrot, giant horsetail, poison hemlock, Russian knapweed, marestail, perennial pepperweed, puncturevine, tansy ragwork, common tansy, common teasel, dalmation toadflax, yellow toadflax, whitetop, dyer's woad. Selective to broadleaf.
Application: Pre- and early post-emergent
Point of application: soil and foliar

Clopyralid
Product(s): Transline, Stinger, Spur
Common targets: Thistles, common burdock, knapweeds, yellow starthistle, oxeye daisy, hawkweeds, prickly lettuce, dandelion, cutleaf teasel, kudzu, buffalobur. Selective to broadleaf.
Application: Post-emergent
Point of application: foliar

Dicamba

Product(s): Vanquish, Banvel, Diablo, Vision, Clarity
Common targets: Knapweeds, kochia, and thistles. Selective to broadleaf and woody plants.
Application: Pre- and post-emergent
Point of application: foliar

Diflufenzopyr + dicamba
Product(s): Overdrive, Distinct
Common targets: Knapweeds, kochia, and thistles. Selective to broadleaf.
Application: Post-emergent
Point of application: foliar

Diuron
Product(s): Direx, Karmex
Common targets: Annual grasses. (*including* bluegrass) and broadleaf weeds. *Lambsquarters, kochia and Russian thistle.* Selective to annual weeds, some perennials.
Application: Pre-emergent
Point of application: soil

Fluridone
Product(s): Avast!, Sonar
Common targets: Hydrilla and watermilfoils. Selective to submersed plants.
Application: Post-emergent
Point of application: aquatic

Glyphosate
Product(s): Many, including Rodeo, Mirage, Roundup Pro, and Honcho
Common targets: Grasses (including *Italian ryegrass)*, sedges, broadleaf weeds, and woody shrubs. Nonselective.
Application: Post-emergent
Point of application: soil or foliar

Hexazinone
Product(s): Velpar
Common targets: Annual and perennial grasses and broadleaf weeds, brush, and trees. Selective to grasses, broadleaf, woody plants.
Application: Pre- and post-emergent
Point of application: soil or foliar

Imazapic
Product(s): Plateau, Panoramic
Common targets: Cheatgrass, leafy spurge, medusahead, whitetop, dalmation toadflax and Russian knapweed. Selective to some broadleaf and grasses.
Application: Pre- and post-emergent
Point of application: soil

Imazapyr

Products: Arsenal, Habitat
Common targets: Whitetop, cheatgrass, common knotweed, north Africa grass, Russian olive
Application: Pre- and post-emergent
Point of application: soil or foliar

Metsulfuron methyl
Product(s): Escort, Patriot, PureStand
Common targets: Whitetop, perennial pepperweed, and other mustards and biennial thistles. Selective to some broadleaf and grasses.
Application: Post-emergent
*Point of application:*soil or foliar

Picloram
Product(s): Triumph, OutPost, Tordon
Common targets: Perennial and woody species. *Knapweeds, starthistle, thistle, bindweed, leafy spurge, rabbitbrush, rush skeletonweed, and poison oak.*Selective to broadleaf and woody plants.
Application: Pre- and post-emergent
Point of application: foliar

Sulfometuron methyl
Product(s): Oust, Spyder
Common targets: Cheatgrass, annual and perennial mustards, and medusahead. Nonselective.
Application: Pre- and post-emergent
Point of application: Soil or foliar

Tebuthiuron
Product(s): Spike
Common targets: Sagebrush (thinning). Selective to broadleaf and woody plants.
Application: Pre- and post-emergent
*Point of application:*soil

Triclopyr
Product(s): Garlon, Renovate, Element
Common targets: Saltcedar, purple loosestrife, Canada thistle, tanoak, Himalayan blackberry. Selective to broadleaf and woody plants.
Application: Post-emergent
Point of application: foliar

Aminopyralid
Product(s): Milestone
Common targets: thistles, knapweed, some broadleaf weeds. Selective to broadleaf plants.
Application: Post-emergent
Point of application: soil or foliar

Rimsulfuron
Product(s): Matrix, Resolve DF, Bais

Common targets: Used to control weeds in potato crops. Some use on annual grass medusahead rye. Selective.
Application: Pre and post-emergent
Point of application: soil or foliar

APPENDIX F – Information Used to Calculate Take

Sage-grouse Density Calculation:

The density of sage-grouse in the covered area was calculated as follows. There are an estimated 24,515 sage-grouse in Oregon based on a 10-year (2004-2013) average of the statewide total spring population (ODFW unpublished data 2013). According to Hagen (2011) 90% of sage-grouse occupy PPH (core), which is estimated at 6.57 million acres in Oregon. The assumption was made that the remaining 10% of the sage-grouse population lie within PGH, which is estimated at 8.26 million acres in Oregon (Hagen 2011). Using the 10-year minimum breeding population average, sage-grouse densities in PPH are estimated at 0.0034 birds per acre (90% of 24,515 = 22,064 sage-grouse divided by 6.57 million acres of PPH). Average sage-grouse densities in PGH are estimated at 0.0003 birds per acre (10% of 24,515 = 2,452 divided by 8.26 million acres) (Table 3, below). These statewide average densities were then multiplied by the number of acres of PPH (115,185 ac x 0.0034 birds per ac) and PGH (283,439 ac x 0.0003 birds per ac) covered under this CCAA (see Table 1 in *Section 8. Covered Area*) to come up with an estimated 10-year minimum population average of 478 sage-grouse for the covered area.

Table 3: Estimated Number and Density of Sage-Grouse within Covered Area

Distribution of Birds by Habitat Type	Number of Birds	Acres of habitat	Birds per Acre
10% of Birds in PGH	2452	8,257,373	0.0003/PGH
90% of Birds in PPH	22064	6,567,011	0.0034/PPH
Total: 2004-2013 Statewide Minimum Spring Breeding Population Average	**24515**	14,824,384	
Habitat Type	**Acres of Habitat**	**Birds by Habitat Type**	
PGH	283,439	86*	Birds in PGH
PPH	115,185	392*	Birds in PPH
Totals	398,624	478	

* These numbers were calculated by multiplying acres of habitat by the corresponding birds per acre cell in an excel spreadsheet. However, when the calculations were done, they were done using the non-truncated numbers and will differ due to non-rounding. For a full explanation details can be found in the excel spreadsheet that was used to calculate take.

Information used to calculate take percentages:

- ***Rangeland Treatments:*** When determining the level of take associated with Rangeland Treatments we used nest abandonment from livestock as a surrogate. We assumed that the types of disturbances that would occur as part of the activities described as "Rangeland Treatments" would have similar impacts to sage-grouse in the area being treated as those associated with repeated disturbance that cause hens to abandon their

nests (see livestock management section below). We estimated that no more than 5% of the covered area (all acres PPH and PGH) would be treated in any one year. We felt this estimate was likely an overestimate because many rangeland treatments will occur in unsuitable habitats (juniper encroached areas, degraded sagebrush habitats etc.). Additionally, as described in the conservation measures under rangeland treatments, minimization measures (timing etc.) will be employed when treatments occur to lessen the impacts to the covered area.

- ***Livestock Management:*** We were able to calculate levels of take associated with nest abandonment and trampling of nests from livestock grazing in occupied sage-grouse habitats. Three studies, identified nest abandonment due to disturbance from livestock grazing resulting in a total of 8 out of 223 or 3.59% of nests being abandoned. (Rasmussen and Griner 1938 ((n=5/161 nests research conducted in Utah), Danvir 2002 (n=2/36, research conducted in Utah), and Holloran 2003 (n=1/26 research conducted in Wyoming)). Two studies containing a total of 450 nests with five nests documented as destroyed or trampled by livestock resulting in a take percentage of 1.11%. (Rasmussen & Griner (n=2/161), Severson in progress unpublished (n=3/289)). According to ODFW 60% of the population are females (0DFW 2014 email), we further assumed all females initiate nests and would be exposed to these threats. We placed 95% of females in PPH and 5% of females in PGH, we based this assumption on the information provided in the 2011 ODFW Strategy that states 95% of nesting occurs in core habitats which is equivalent to PPH, so we assumed the additional 5% of nesting occurs on lands outside core or PGH.

- ***Farm Operations:*** The acres impacted in the covered area were developed using 2010 LANDFIRE data, a GIS analysis was conducted by intersecting the data identified as "agricultural" and the acres identified in this CCAA as the "covered area". The resulting acres (37,423 acres of PGH and 1,087 acres of PPH) are the acres we identified that interactions between sage-grouse and farm equipment are most likely to occur. Very little data exists documenting direct take from farm operations, one unpublished study by Davis in Oregon documented one sage-grouse being killed during haying out of 105 collared birds, resulting in a take percentage of .95% (n=1/105). Additionally, when site specific plans are developed minimization measures (either those currently in place or new measures) related to haying/farming will be identified in Section K of the SSP.

- ***Development:*** Fences are currently present throughout much of the covered area and some new fences may be needed to protect sensitive areas of sage-grouse habitat or to evenly distribute livestock within the covered area. Fences pose a strike risk to sage-grouse. A Utah study concluded that 18% of documented mortalities to sage-grouse were from fence strikes. (Danvir 2002) The overall mortality rate for this population was 53%, making the relative risk of a sage-grouse hitting an unmarked fence at 9.54%. In 2011-2013, Stevens published 3 papers examining the relative risk of hitting fences and identifying key factors present in the habitat that would make a fence "high risk", these factors led to the development of a lek based model taking into account distance from leks, slope, roughness and other factors, Stevens concluded that if high risk fences were

marked with anti-strike markers or reflectors it would reduce mortalities by 83%, which would reduce overall fence strike mortality rate down to 1.62%. For our calculations we assumed 100% of all birds in the covered area would be exposed to fence strikes annually, we also assumed all high risk fences that are enrolled will be marked as part of enrolled landowners SSPs.

Allowance of Additional 0.5% Take within covered area:

There may be additional take associated with both the direct and indirect aspects of rangeland management, however there have been very few cause and effect studies quantifying this. (Rowland 2004). We are providing an allowance of up to 0.5% as a result of these types of activities across all covered lands and affecting all birds.

Examples might include:

- Striking a sage-grouse with a vehicle while landowners or their agents are performing covered activities, implementing conservation measures or recreating.
- Small amounts of take from fence strikes to lower risk unmarked fences.
- Non-commercial recreational activities.
- Drowning in stock tanks fitted with escape ramps.