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**Greater Sage-grouse Programmatic  
Candidate Conservation Agreement with Assurances  
for Private Rangelands in Malheur County, Oregon**

between the  
**Malheur County Soil and Water Conservation District**  
and the  
**United States Fish and Wildlife Service**

**CCAA Duration: 30 years ( \_\_\_\_\_ , 2014 - \_\_\_\_\_ , 2044)**

**September 24, 2014**

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129 **PURPOSE**

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

133 **INTRODUCTION**

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

142  
143 A CCAA is a voluntary agreement whereby landowners agree to manage their lands to remove  
144 or reduce threats to a species that may become listed under the ESA. In return for managing their  
145 lands to the benefit of a species at risk, landowners receive assurances against additional  
146 regulatory requirements should that species ever be listed under the ESA. The programmatic  
147 design of this agreement, its “umbrella” nature, streamlines the process for landowner  
148 enrollment, as follows:

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

156  
157 Landowners wishing to enroll in this CCAA must agree to maintain contiguous habitat by  
158 avoiding further fragmentation and address all other threats to sage-grouse and their habitats  
159 within their control with one or more Conservation Measures (CMs), by doing this the enrolled  
160 lands will meet the “CCAA Standard”<sup>2</sup>. A CM is defined as an activity or action which, when  
161 implemented or continues to be implemented, will reduce or remove threats to sage-grouse and  
162 will improve or maintain their habitat. This CCAA provides, in **Appendix A**, a comprehensive  
163 list of specific CMs from which the landowner and the SWCD can jointly select those measures  
164 most appropriate to the property that will adequately address the identified threats to sage-  
165 grouse. This CCAA also provides the landowner the opportunity of working with the SWCD to  
166 develop additional CMs, with approval of FWS, when an appropriate CM cannot be found in  
167 **Appendix A**.

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<sup>1</sup> Habitat fragmentation is the breaking up of sage-grouse habitat into smaller parcels, creating discontinuous habitat.

<sup>2</sup> 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.”

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

171  
172 There are three goals this programmatic CCAA is designed to meet:

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

181  
182 This species is currently a candidate for listing under ESA; it is not listed. Therefore, there are no  
183 ESA regulations related to sage-grouse currently impacting private lands and livestock  
184 operations. The sage-grouse is currently managed by Oregon Department of Fish and Wildlife  
185 (ODFW).

## 186 ***Species Distribution and History***

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

194  
195 In Oregon, sage-grouse were once found in most grassland and sagebrush habitats east of the  
196 Cascades. European settlement and conversion of sagebrush steppe into agricultural production  
197 led to extirpation of the species in the Columbia Basin by the early part of the 1900s, but  
198 sagebrush rangelands have persisted, particularly in southeast Oregon. Sage-grouse populations  
199 have fluctuated markedly since the mid-1900s, with notable declines in populations from the  
200 1950s to early 1970s. Oregon sage-grouse numbers apparently have declined over the long-term  
201 (Hagen 2005). However, population indices over the last 30 years suggest a relatively stable  
202 statewide population (Hagen 2010). Reasons for these losses likely are the cumulative effects of  
203 habitat loss and degradation, changes in predator control methods, and increases in human  
204 disturbance (Hagen 2005). Habitat loss and fragmentation are the primary cause for long-term  
205 changes in population abundance and distribution. Additional threats include, sagebrush removal,  
206 agricultural conversion, drought, rising CO<sub>2</sub> levels, flooding, West Nile virus, unmanaged or  
207 improper grazing, wild horses, recreation, predation<sup>3</sup>, sagebrush defoliating insects (Aroga  
208 moth), and energy development and other infrastructure (USFWS 2010).  
209

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<sup>3</sup> 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; Lockyear et al. 2013; 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 (Bui 2009; Coates 2007; Hagen 2012; Lockyear et al. 0213).

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

213  
214 Current harvest management is not considered a significant threat to sage-grouse populations  
215 (USFWS 2010). In southeastern Oregon, there are healthy populations of sage-grouse with  
216 limited hunting. ODFW allows harvest of up to 5% of the projected fall population of birds, and  
217 in practice, harvest has been estimated at less than 3% of the fall population in hunted areas  
218 (Hagen 2005). Current research found that such limited hunting does not affect populations  
219 (Connelly et al. 2000; Sedinger et al. 2010). Harvest of candidate species is permissible under the  
220 law. Hunters contribute to sage-grouse management by submitting wings of harvested birds to  
221 ODFW, allowing biologists to learn more about age, sex, reproductive success, and distribution  
222 of the species.

### 223 ***Listing***

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

### 236 ***CCAA Development***

237 In anticipation of a final listing decision by the FWS, the Harney County Greater Sage-Grouse  
238 Candidate Conservation Agreement with Assurances Steering Committee (HC Steering  
239 Committee) and the Harney SWCD requested assistance from the FWS in developing a sage-  
240 grouse strategy for ranch and land management activities that could offer landowners assurances  
241 that their practices could continue in the event the species was listed under the ESA. Livestock  
242 production is a primary use of Oregon’s rangelands, and listing the sage-grouse could have a  
243 significant impact on this use and the communities of Harney County. Therefore, the Steering  
244 Committee, comprised of representatives from local private landowners, Harney SWCD, FWS,  
245 Natural Resources Conservation Service (NRCS), Harney County Court, ODFW, Bureau of  
246 Land Management (BLM), Oregon State University Extension (OSU Extension), The Nature  
247 Conservancy (TNC), Department of State Lands (DSL), and Eastern Oregon Agricultural  
248 Research Center (EOARC) developed a programmatic CCAA.

249  
250 Representatives from Harney SWCD met with a delegation of SWCD representatives from  
251 Baker, Malheur, Lake, Grant, and Crook Counties on April 16, 2014. The next day, Malheur  
252 County SWCD formed its own Malheur County Greater Sage-Grouse Candidate Conservation  
253 Agreement with Assurances Steering Committee (MC Steering Committee) to review and amend  
254 the Harney County Programmatic Candidate Conservation Agreement with Assurances

255 document to accurately reflect the primary use of Oregon’s rangelands and communities of  
256 Malheur County.

257  
258 Information on existing conditions, status, and threats in this programmatic CCAA is  
259 summarized from the following documents (we refer the reader to these documents for a more  
260 in-depth analysis):

- 261
- 262 • ODFW’s Greater sage-grouse conservation assessment and strategy for Oregon (hereafter  
263 referred to as ‘ODFW Strategy’) (Hagen 2011)
  - 264 • FWS March 23, 2010, 12-month Finding (75 FR 13910)
  - 265 • FWS January 12, 2005, 12-month Finding (70 FR 2243)
  - 266 • Greater sage-grouse ecology and conservation of a landscape species and its habitat  
267 (Knick and Connelly 2011).

## 268 **1. Factors Affecting the Species**

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

## 277 **2. Conservation Approach**

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

## 286 **3. Application and Enrollment Process**

287 The following steps summarize the process:

- 288 • The landowner contacts the Malheur County SWCD in Ontario. The SWCD will initially  
289 request from landowners the necessary information to initiate project review (i.e.,  
290 landowner name; contact information; legal and general description of the property  
291 location; description of land use and management).
- 292 • SWCD will announce a quarterly deadline for submission of applications. SWCD will  
293 evaluate all applications received during that timeframe based on the following criteria  
294 for prioritization. The SWCD is responsible for the prioritization of private lands to be  
295 included in this CCAA consistent with ODFW Strategy (Hagen 2011) and its local  
296 implementation teams:

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***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

- 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.

341

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

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

357 **5. Conservation Measures Development**

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

373  
374 The process of selecting and/or developing specific CMs for individual properties will be based  
375 on the threats identified for the enrolled property (detailed in the SSP/CI), recognizing that each  
376 property is unique and CMs will be site-dependent. The SWCD will work with each landowner  
377 to identify specific threats for the property and select and/or develop CM(s) to remove or reduce  
378 each threat. Each identified threat within the control of the landowner will be addressed and will  
379 have one or more corresponding CM(s); the FWS and SWCD recognize not every potential CM  
380 listed for a particular threat is appropriate for a given property. Therefore, CMs selected or  
381 developed will be based on their likely effectiveness, ability to be implemented, and should be  
382 the most beneficial for sage-grouse conservation on that particular property.

383  
384 If no threats are identified or if current management is addressing identified threats, a detailed  
385 description of current management and a monitoring strategy may suffice as the SSP. However,  
386 each enrolled landowner must agree to **CM 1: Maintain contiguous habitat by avoiding**

387 **further fragmentation.** The objective for this required CM is for no net loss in 1) habitat  
388 quantity (as measured in acres) and 2) habitat quality (as determined by the ecological state). The  
389 baseline determination of habitat quality and quantity will be completed during the baseline  
390 inventory and will serve as a reference point in meeting the objective for CM 1. Losses in sage-  
391 grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice versa,  
392 as long as the action avoids further fragmentation (consistent with **Section 10. Covered**  
393 **Activities** - development subsection).

394  
395 While this is the objective of CM 1, FWS and SWCD understand that changes out of the control  
396 of the landowner will be handled as a changed circumstance. If changed circumstances occur,  
397 conservation measures need to be included consistent with **Section 14. Changed**  
398 **Circumstances.** CM 1 does not exclude CMs that might create a short-term loss of habitat  
399 quality or quantity because such measures are intended to result in a long-term improvement to  
400 sage-grouse habitat. Development activities covered by this agreement will be described in the  
401 SSP at the time of enrollment or can be added as a modification (consistent with **Section N.**  
402 **Modification of SSP/CI**, located in **Appendix B**) to the SSP and internal mitigation may be  
403 required (consistent with **Section 10. Covered Activities** - development subsection).

404  
405 While these CMs should apply across the landscape, there may be circumstances where site-  
406 specific modifications or conditions warrant changes to the standard prescriptions. Changes to  
407 CMs and/or development of CMs will occur in consultation with the landowner and must have  
408 concurrence from the FWS. The SWCD will note those changes on the SSP/CI for enrolled  
409 properties, including rationale or justification for any modifications.

410  
411 This CCAA incorporates, by reference, all conservation strategies in the ODFW Strategy (Hagen  
412 2011) that are relevant to private lands. The landowner, SWCD, and FWS will draw from those  
413 strategies while developing CMs in the SSPs and implementing actions for the sage-grouse on  
414 lands enrolled in this CCAA. However, it is unlikely that the ODFW Strategy and this  
415 programmatic CCAA cover all needs for certain circumstances, so site specific measures outside  
416 of these references will be determined, as necessary, in consultation with landowners.

## 417 **6. Inventory and Monitoring Protocols**

418 The overall management goal is to facilitate maintenance of, or transition to, a desired ecological  
419 state that can serve the habitat needs of sage-grouse using an ecologically-based model (see state  
420 and transition diagrams for low elevation, high elevation, and riparian habitat shown in  
421 **Appendix C**). Additional conservation measures may be used to further increase the  
422 quality/value of sage-grouse habitat (e.g., timing of grazing in nesting habitat) or mitigate  
423 species-specific threats (e.g., raptor perches in the vicinity of essential habitat). However,  
424 focusing on species-specific conservation measures in habitat that is in, or at risk of, transition to  
425 a non-desired state can divert resources from addressing underlying ecological issues that  
426 ultimately define the current and future value of such habitats to sage-grouse and other sagebrush  
427 obligate wildlife species. For this reason, an ecologically-based model will be used to determine  
428 inventory, monitoring, and conservation needs during the site specific planning process (for a  
429 detailed explanation of state and transition models, see **Appendix C**).

430  
431

432 This section:

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

### 443 **6.1 Site Selection Protocol**

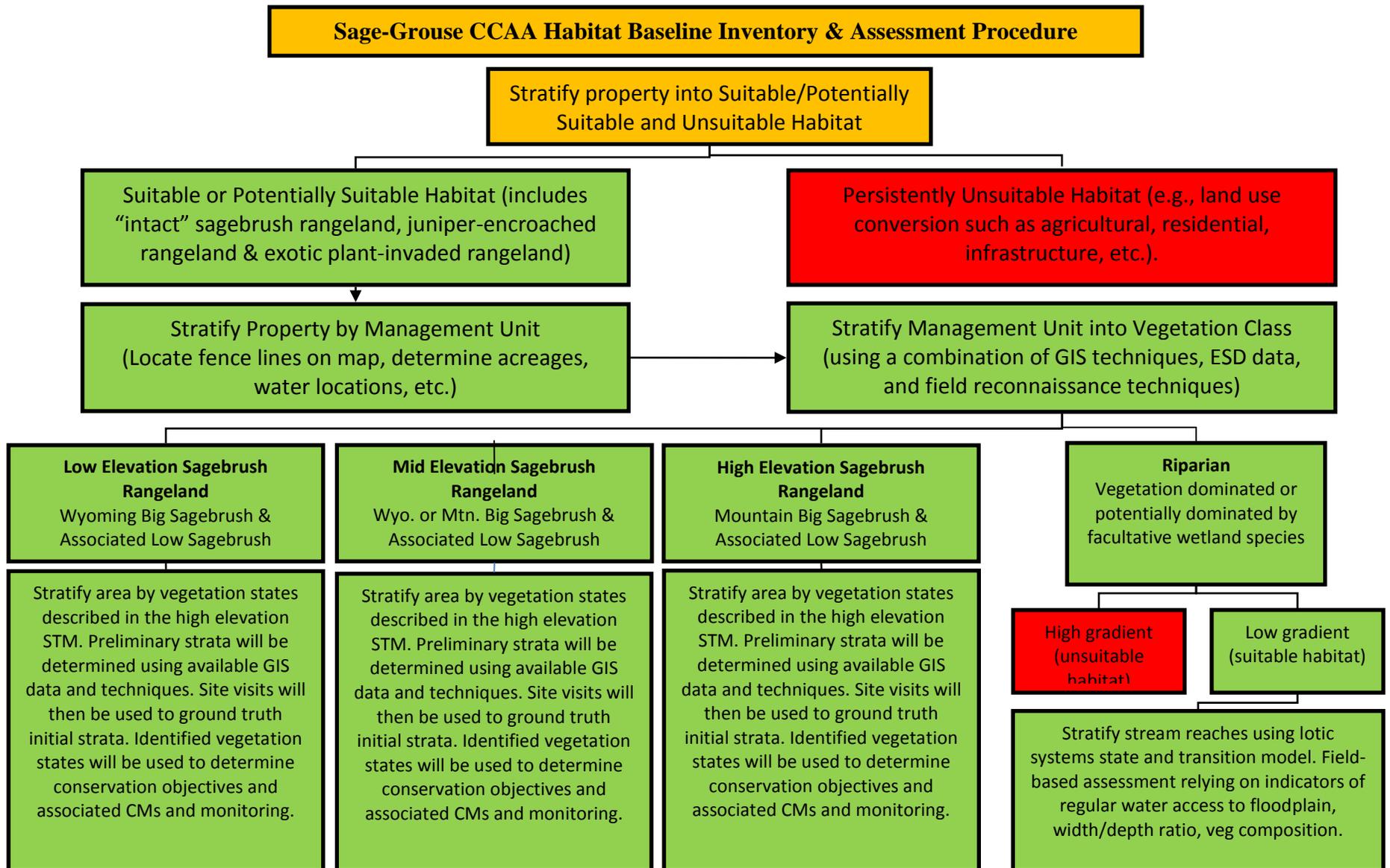
- 444 **1. Background information** – Stratifying enrolled lands into inventory and monitoring  
445 units will require gathering any of the following background information that exists for  
446 each property/properties for which a site specific plan is being considered: aerial  
447 photographs, satellite imagery, written and oral histories, disturbance history (e.g., burn  
448 maps), management history, property maps, plant species lists, ecological sites and site  
449 descriptions, and soil maps.
- 450  
451 **2. Stratify by habitat suitability using existing data** – The enrolled property will first  
452 be stratified into areas of existing suitable (i.e., low elevation ecological states A, B, and  
453 D; high elevation ecological states A and B; lotic riparian ecological states characterized  
454 by consistent access to floodplain) or potentially suitable sage-grouse habitat (i.e. low  
455 elevation ecological state C; high elevation ecological states C, D, and E; lotic riparian  
456 ecological states without consistent access to floodplain) and areas of persistently  
457 unsuitable habitat (e.g., historically non-habitat or permanently converted habitat –  
458 infrastructure, agriculture, residential, etc.) (see Figure 1).
- 459  
460 **3. On-site documentation of upland ecological states** – The upland property will then  
461 be stratified by management unit (typically by pasture). Each upland management unit  
462 will then be stratified into the two primary ecological types (i.e., high elevation sagebrush  
463 rangeland and low elevation sagebrush rangeland) using a combination of existing  
464 knowledge and/or data, ecological site descriptions, GIS techniques, and field  
465 reconnaissance. Ecological types within management units will then be stratified by the  
466 ecological states described in their respective state and transition model. Preliminary  
467 ecological state strata will be determined using GIS data. The resultant preliminary strata  
468 will then be used to direct ground truthing and associated habitat inventory efforts;  
469 ground truthing of preliminary ecological state strata will be accomplished following  
470 procedures outlined in the Upland Ecological State Documentation Form (**Appendix D-**  
471 **4**). The ocular assessment outline located in **Appendix D-4** will provide the basis for  
472 selecting representative areas for each stratum, where quantitative data will be collected  
473 and serve as permanent habitat monitoring sites for the management unit (long-term  
474 (trend) monitoring).
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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**.
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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.
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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.

521 **6.2 Annual Monitoring**

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

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



**Figure 1. Stepwise process for habitat baseline inventory and assessment procedure.** 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.

## Low Elevation Sagebrush Rangeland

<p><b>Ecological State A</b>                      Site dominated by sagebrush, large perennial bunch-grasses, and perennial forbs. Sagebrush cover &gt;10%. Capable of providing year around habitat for sage-grouse.</p> 	<p><b>Ecological State B</b>                      Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover &lt;10%. Capable of providing seasonal habitat for sage-grouse.</p> 	<p><b>Ecological State C</b>                      Site dominated by decadent sagebrush and Sandberg bluegrass and/or annual grasses. Sagebrush cover &gt; 10%. Capable of providing seasonal habitat.</p> 	<p><b>Ecological State D</b>                      Site dominated by exotic species. Often results in exotic annual grass-fire cycle. Not capable of providing habitat for sage-grouse in current state.</p> 
<p><b>Conservation Objectives</b>                      Prevent conversion to exotic annual grasses by maintaining dominance of large, deep-rooted perennial bunchgrasses and sagebrush. Manage for stable or improving trend.</p>	<p><b>Conservation Objectives</b>                      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.</p>	<p><b>Conservation Objectives</b>                      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.</p>	<p><b>Conservation Objectives</b>                      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 revegetate areas of exotic plants to veg dominated by deep-rooted perennial grasses.</p>
<p><b>Threats</b>                      Wildfire                      Improper grazing                      Exotic Invasives</p>	<p><b>Threats</b>                      Wildfire                      Improper Grazing                      Exotic Invasives                      Vegetative Treatment</p>	<p><b>Threats</b>                      Wildfire                      Improper Grazing                      Exotic Invasives</p>	<p><b>Threats</b>                      Wildfire                      Exotic Invasives                      Vegetative Treatment</p>
<p><b>Applicable CMs</b>                      Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b>                      Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b>                      Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b>                      Listed by threat in Appendix A.</p>

**Figure 2. Low elevation 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**, including conservation objectives, threats, and applicable conservation measures (CMs) for each ecological state.

## Mid Elevation Sagebrush Rangeland

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

**Figure 3. Mid elevation 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**, including conservation objectives, threats, and applicable conservation measures (CMs) for each ecological state.

## High Elevation Sagebrush Rangeland

Ecological State A	Ecological State B	Ecological State C	Ecological State D	Ecological State E
<p>Site dominated by sagebrush, large perennial bunchgrasses, and perennial forbs. Sagebrush cover &gt;10%. Capable of providing year around habitat.</p> 	<p>Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover &lt;10%. Capable of providing seasonal habitat.</p> 	<p>Co-dominance of conifers, perennial grasses and sagebrush. Areas of conifer cover &gt;5% not capable of providing seasonal habitat.</p> 	<p>Site over shallow soils dominated by conifers. Shrubs and herbaceous understory largely absent. Not capable of providing habitat in current state.</p> 	<p>Site over deep soils dominated by conifers. Understory shrubs largely absent. Perennial herbaceous plant present. Not capable of providing habitat in current state.</p> 
<p><b>Conservation Objectives</b></p> <p>Maintain sagebrush and large perennial bunchgrasses and perennial forbs. Maintain sagebrush cover &gt;10%.</p>	<p><b>Conservation Objectives</b></p> <p>Provide conditions for an increase in the cover of sagebrush. Manage for transition toward State A.</p>	<p><b>Conservation Objectives</b></p> <p>Remove conifers and prevent further encroachment and maintain cover of perennial grass and sagebrush</p>	<p><b>Conservation Objectives</b></p> <p>Restore dominance of shrub and perennial grasses and forbs through removal of dominant conifer overstory.</p>	<p><b>Conservation Objectives</b></p> <p>Restore shrubs and perennial herbaceous vegetation by removing of conifers and post treatment restoration of desired species.</p>
<p><b>Threats</b></p> <p>Lack of fire Improper grazing Conifer encroachment</p>	<p><b>Threats</b></p> <p>Lack of fire Improper grazing Conifer encroachment</p>	<p><b>Threats</b></p> <p>Lack of fire Improper grazing Conifer encroachment Exotic Invasives</p>	<p><b>Threats</b></p> <p>Lack of fire Exotic Invasives</p>	<p><b>Threats</b></p> <p>Lack of fire Exotic Invasives</p>
<p><b>Applicable CMs</b></p> <p>Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b></p> <p>Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b></p> <p>Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b></p> <p>Listed by threat in Appendix A.</p>	<p><b>Applicable CMs</b></p> <p>Listed by threat in Appendix A.</p>

**Figure 4. High elevation 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**, including conservation objectives, threats, and applicable conservation measures (CMs) for each ecological state.

## Lotic Riparian Systems

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

**Figure 5. Lotic riparian state and transition model.** Conceptual ecological framework for managing a generalized state-and-transition model for riparian ecological type in Oregon with a warm/cool and moist soil temperature/moisture regime, including conservation objectives, threats, and applicable conservation measures (CMs) for each ecological state.

541 **6.3 Scientific Studies and Species Monitoring**

542 Currently, species monitoring is limited to official lek counts by ODFW, which any landowner  
543 may participate in. Enrolled landowners may conduct lek counts when proper training for counts  
544 is acquired from ODFW.

545  
546 Important information can be learned by landowners and agencies by closely monitoring sage-  
547 grouse populations on a relatively fine scale. Furthermore, scientific studies on sage-grouse in  
548 Malheur County can help landowners and participants in this CCAA to more effectively  
549 implement conservation measures. Knowledge of the seasonal habitat use of sage-grouse, for  
550 example, will help landowners prioritize conservation measures in areas of known use, thus  
551 increasing the benefit to sage-grouse. Monitoring activities and scientific studies are encouraged  
552 in cooperation with appropriate agencies. Findings from monitoring and scientific studies may  
553 result in modification of existing CMs with concurrence by the landowner, FWS, and SWCD.

554 **6.4 Monitoring Summaries, Evaluation, and Reporting**

- 555 • **Annual Monitoring** – Each year, the SWCD will review all documentation and complete  
556 an on-site visit with each enrolled landowner. During the on-site visit the landowner and  
557 SWCD will view current habitat conditions and discuss results of the annual monitoring.  
558 During this visit the SWCD and the landowner will complete the Annual Grazing and  
559 Habitat Summary Form (**Appendix D-3**). Subsequent to the on-site visit and based on  
560 the discussion with the landowner during that visit, SWCD will ensure the completion of  
561 the *Annual Grazing and Habitat Summary* Form with any additional summary attached as  
562 needed. The completed form and summary will include progress toward implementing  
563 agreed upon CMs, any recommendations discussed and any agreed upon actions to be  
564 implemented. A copy of the completed form and summary will be sent to the enrolled  
565 landowner and the original will be retained with that landowner’s SSP file.
  - 566 • **Trend Monitoring** – This monitoring will be completed for each enrolled landowner  
567 every three to ten years, as scheduled in the SSP. The frequency of the trend monitoring  
568 within the timeframe described is dependent upon habitat health and site stability, as  
569 determined by the baseline inventory and the CMs selected for the SSP. Each year,  
570 SWCD will review SSPs to determine which enrolled properties are due for long-term  
571 monitoring (trend) that year. SWCD will then notify these landowners of the planned  
572 trend monitoring and with the landowner, will schedule a date to collect data.
  - 573 • In the year following trend monitoring, the SWCD will evaluate the outcome of the  
574 applied CMs, comparing the initial (baseline) data to the current trend data to determine  
575 if the site habitat characteristics measured indicate movement toward or away from  
576 objectives. The SWCD will provide the landowner a trend monitoring report, which will  
577 include the results of trend monitoring, an evaluation of these results, and any  
578 recommendations for adaptive management.
  - 579 • Each year, the SWCD will report the summary of results of all trend monitoring to the  
580 FWS via an annual report (see **Section 26. Reports**). The annual report will be  
581 submitted to FWS for review and approval and will include an analysis of all enrolled  
582 landowners of the overall changes to habitat quality, changes in ecological states, extent  
583 of threats addressed, and recommendations for adaptive management.
- 584

585 **6.5 Use of Adaptive Management in the CCAA process**

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

595  
596 An adaptive, outcome-based approach (Walters 1986) will be used to allow management  
597 flexibility, recognizing CMs may need to be updated based on changing conditions or new  
598 information. Such an adaptive approach explicitly recognizes multiple factors (environmental  
599 conditions, biological processes) affect sage-grouse populations. Furthermore, the consequences  
600 of prescriptive CMs cannot be predicted with certainty. Therefore, the CCAA provides a  
601 framework for making objective decisions in the face of uncertainty. If the desired results of a  
602 CM are not achieved, the SWCD will work with the landowner to modify the CM or enact  
603 another CM in order to achieve the desired results. Adaptive management relies on an iterative  
604 cycle of monitoring, assessment, and decision making to clarify the relationships among the CMs  
605 and the response of habitat and, ultimately, sage-grouse abundance.

606 **7. Authorities**

607 **7.1 SWCD Authorities**

608 Oregon Revised Statute (ORS) 190.110 gives Malheur County SWCD statutory authority to  
609 enter into agreements. Additional statutory authority is given to carry out district responsibilities  
610 under ORS 568.550:

- 611 1. The board of directors of a soil and water conservation district has the following powers:
- 612 (d) To enter into written agreements with and, within the limits of appropriations duly  
613 made available to the board by law, to furnish financial or other aid to any  
614 governmental or nongovernmental agency or any owner or occupier of lands within  
615 the district, for the purpose of:
    - 616 (A) Carrying on within the district soil erosion control and prevention operations,  
617 water quality improvement, watershed enhancement and improvement, fish and  
618 wildlife habitat management activities and other natural resource management  
619 activities; or
    - 620 (B) Carrying out district responsibilities under ORS 541.898, 568.225, 568.550 and  
621 568.900 to 568.933.

622 **7.2 FWS Authorities**

623 Sections 2, 7, and 10 of the ESA of 1973, as amended (Act, 16 U.S.C. 1531 *et seq.*), allow the  
624 FWS to enter into this CCAA. Section 2 of the ESA states that encouraging interested parties,  
625 through Federal financial assistance and a system of incentives, to develop and maintain  
626 conservation programs is key to safeguarding the Nation's heritage in fish, wildlife, and plants.

627 Section 7 of the ESA requires the FWS to review programs it administers and utilize such  
628 programs in furtherance of the purposes of the ESA. The purposes of the ESA are “to provide a  
629 means whereby the ecosystems upon which endangered species and threatened species depend  
630 may be conserved,” and “to provide a program for the conservation of such endangered species  
631 and threatened species ...” “Conserve” is defined in section 3(3) of the ESA and means “to use  
632 and the use of all methods and procedures which are necessary to bring any endangered species  
633 or threatened species to the point at which the measures provided pursuant to this Act are no  
634 longer necessary.”

635  
636 Section 10 of the ESA describes permits issued under the ESA, exempting certain prohibitions  
637 under Section 9 of the ESA. Section 10(a)(1)(A) of the ESA authorizes the issuance of EOS  
638 permits to “enhance the survival” of a listed species. Enhancement means the permitted activities  
639 benefit species in the wild. By entering into a CCAA, the FWS is utilizing its Candidate  
640 Conservation Programs for further conservation of the Nation’s fish and wildlife, consistent with  
641 the FWS’s “Candidate Conservation Agreement with Assurances Final Policy” (64 FR 32726;  
642 June 17, 1999). The conservation goal of this programmatic CCAA is to maintain and enhance  
643 sage-grouse on private lands within the range of the species in Malheur County, Oregon. Upon  
644 approval of this Programmatic CCAA the FWS will issue an EOS permit to the Malheur County  
645 SWCD. Landowners will meet this conservation goal by implementing agreed upon CMs in  
646 individual SSPs to address threats to the species, and will receive regulatory certainty from the  
647 FWS concerning land use restrictions that might otherwise apply, should this species be listed  
648 under the ESA.

649  
650 Even if Site Specific Plans (SSPs) are implemented under this programmatic CCAA, the FWS  
651 cannot guarantee listing will never be necessary for all or part of the sage-grouse range. It is  
652 important to note that the FWS’s directive to, “preclude or remove any need to list” is based  
653 upon the removal of threats and the stabilization or improvement of the species’ status. The  
654 decision to list or not to list sage-grouse under the ESA is a regulatory process independent of a  
655 CCAA or a Candidate Conservation Agreement (CCA). The FWS will evaluate actions and  
656 successes of this CCAA in accordance with the FWS Policy for Evaluation of Conservation  
657 Efforts (PECE) during the listing determination process, as required under section 4(b)(2)(A) of  
658 the ESA. The FWS will consider the contribution to conservation made by these agreements in a  
659 “five-factor analysis” which is used to make any species listing determination (50 CFR Chapter  
660 IV, Federal Register Vol. 63, No. 60, March 2003).

661  
662 The five factors include:

- 663 • The present or threatened destruction, modification, or curtailment of the species’ habitat  
664 or range
- 665 • Overutilization of the species for commercial, recreational, scientific, or educational  
666 purposes
- 667 • Disease or predation
- 668 • The inadequacy of existing regulatory mechanisms
- 669 • Other natural or man-made factors affecting the species’ continued existence

670

671 **8. Covered Area**

672 This CCAA pertains to private lands within sage-grouse habitat in Malheur County, Oregon,  
 673 both by the current distribution of sage-grouse and to those private lands that provide potential  
 674 habitat that may be occupied by the species in the future. The map of the "Covered Area" (see  
 675 Figure 5) includes the private lands in Malheur County that could be eligible for enrollment.  
 676

677 For purposes of analysis, FWS analyzed PPH and PGH as representing the best current estimate  
 678 of sage-grouse habitat. However, private lands within the covered area that are not currently  
 679 designated as PPH or PGH but have the characteristics of sage-grouse habitat or have known  
 680 sage-grouse occupancy may be included in the agreement.  
 681

682 The authorities granted to Soil and Water Conservation Districts in Oregon Revised Statutes (see  
 683 **Section 7. Authorities**) allow for private lands in counties adjacent to Malheur County to be  
 684 included in this programmatic CCAA. The process that would allow Malheur County SWCD the  
 685 jurisdiction to work with landowners who have property in both counties is: upon a joint request  
 686 from Malheur County SWCD and the affected landowner, the neighboring SWCD may approve  
 687 the request and pass a resolution.  
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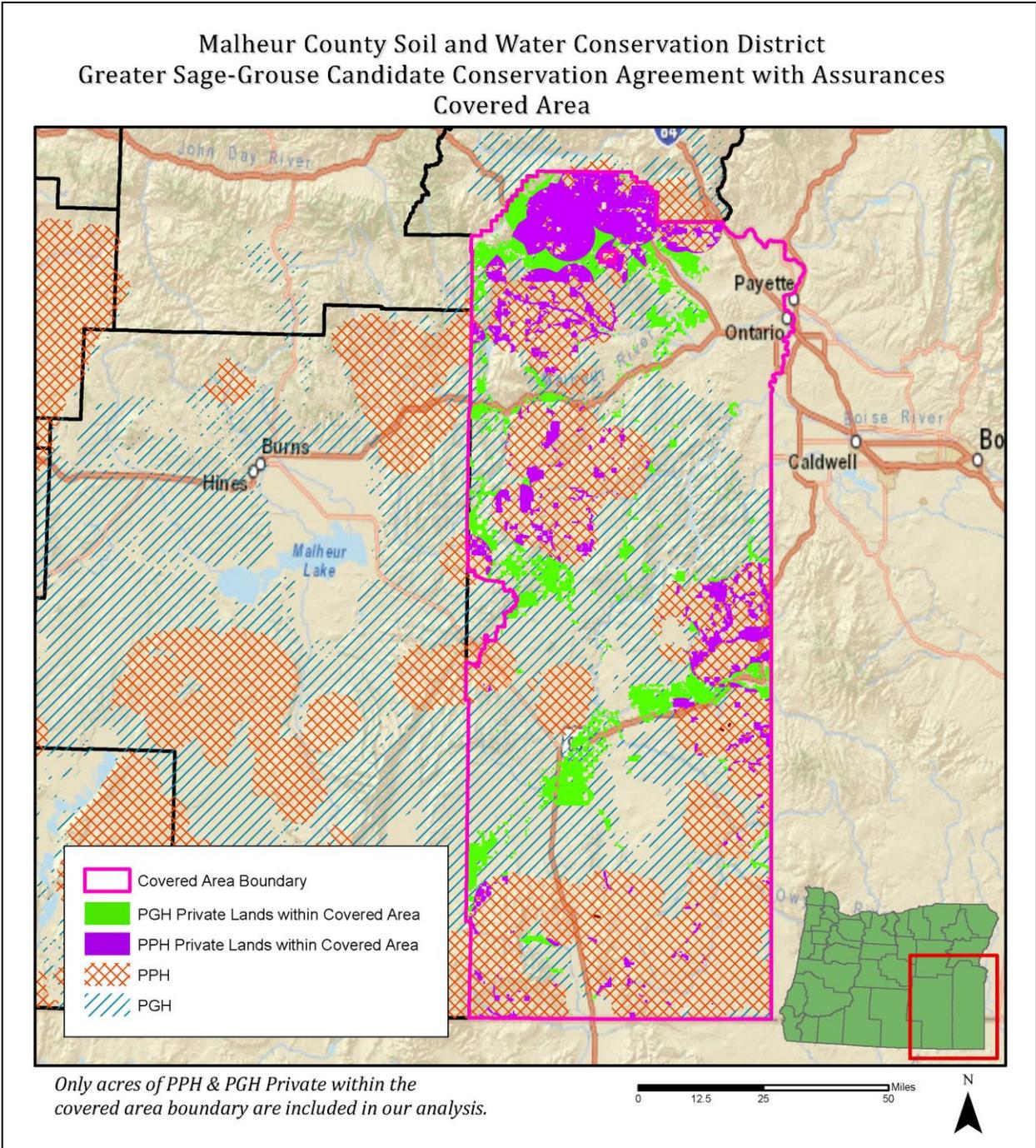
689 Within Malheur County, there are over 5 million acres of potential sage-grouse habitat. See table  
 690 below for a breakdown of these acreages in the Malheur County:  
 691

692 **Table 1: Acreage breakdown for covered area**

<b>Landowner</b>	<b>PGH within Covered Area</b>	<b>PPH within Covered Area</b>	<b>Total</b>
<b>Private Acres within Covered Area</b>	414,021	472,528	<b>886,549</b>
<b>BLM in Malheur County</b>	1,958,339	2,089,574	<b>4,047,913</b>
<b>Other* in Malheur County</b>	224,068	119,471	<b>343,539</b>
<b>Totals</b>	<b>2,596,428</b>	<b>2,681,573</b>	<b>5,278,001</b>

693 \*State lands, Forest Service, Bureau of Indian Affairs, Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S.  
 694 Department of Agriculture, Undetermined  
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**Figure 6: Covered area map**

**9. Responsibilities of the Parties**

**9.1 Landowner Responsibilities:**

- 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

- 742 • Implement all agreed upon CMs in their SSP
- 743 • The property owner agrees to allow SWCD and FWS employees or its agents, with
- 744 reasonable prior notice (at least 48 hours) to enter the enrolled properties to complete
- 745 agreed upon activities necessary to implement the SSP
- 746 • Continue current management prac`
- 747 • Avoid impacts to populations and individual sage-grouse present on their enrolled lands
- 748 consistent with this SSP
- 749 • Record dates, locations, and numbers of sage-grouse observed on their enrolled lands to
- 750 be included in the annual report
- 751 • Record new observations of noxious weeds that they incidentally find
- 752 • Report observed mortalities of sage-grouse to the SWCD within 48 hours
- 753 • Cooperate and assist with annual and long-term monitoring activities and other reporting
- 754 requirements identified in the SSP

## 755 **9.2 SWCD Responsibilities:**

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

786 **9.3 U.S. Fish and Wildlife Service Responsibilities:**

- 787 • Provide assistance in coordinating development and implementation of this CCAA
- 788 • Review each SSP<sup>4</sup> and provide a Letter of Concurrence within 60 days if all issuance
- 789 criteria are met for all SSPs completed under the EOS permit
- 790 • Provide technical assistance to aid the landowners in implementing the CMs
- 791 • Review monitoring data for consistency with CCAA objectives to determine if
- 792 conservation measures are providing the desired benefit to sage-grouse
- 793 • Serve as an advisor, providing expertise on the conservation of sage-grouse
- 794 • Assist in the implementation of conservation measures, monitoring, or other measures if
- 795 agreed upon during the development of the SSP by landowner, SWCD, and FWS
- 796 • Provide FWS funding, to the extent funding is available consistent with **Section 23.**
- 797 **Availability of Funds**, of the programmatic CCAA, to support implementation of this
- 798 CCAA and associated SSPs/CIs
- 799 • Provide support and assist in obtaining funding from other sources for the
- 800 implementation of CMs
- 801 • Conduct outreach and public education efforts to promote the conservation of sage-
- 802 grouse
- 803 • Immediately report to ODFW any observed or reported mortalities of sage-grouse
- 804 • Protect, to the maximum extent permissible under federal laws, against the disclosure of
- 805 all confidential personal and/or commercial information provided by enrolled landowners
- 806 and collected, gathered, prepared, organized, summarized, stored, and distributed for the
- 807 purposes of developing and implementing this CCAA
- 808 • Provide notice to SWCD when a Freedom of Information Act (FOIA) request for records
- 809 concerning this CCAA is made, and allow the SWCD to prepare a notification requesting
- 810 that any confidential personal and/or commercial information be withheld

811 **10. Covered Activities**

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

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

821 **10.1 Ongoing and planned rangeland practices**

822 Activities that are covered by this CCAA and the associated EOS permit include most activities  
823 commonly practiced on rangelands. However, as complex as rangelands are, so are the  
824 landowners’ uses that depend on these for their livelihoods. If activities not included below are  
825 occurring on lands to be enrolled, the FWS will determine if they are consistent with the

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<sup>4</sup> FWS will participate in the development of up to the first five SSPs that represent the diversity of habitat in Malheur County, including site visits, baseline inventory, analysis or other aspects of plan development.

826 programmatic CCAA and permit issuance criteria as well as whether or not additional NEPA  
827 analysis is needed to cover them. Activities that meet all required standards may be considered  
828 for inclusion in individual SSPs, provided that the effect of including such activities does not  
829 significantly change the CCAA's effect on the environment. Rangeland practices were divided  
830 into five categories: rangeland treatments, livestock management, recreation, farm operations,  
831 and development; and are described in more detail below and in association with the  
832 conservation measures in **Appendix A**.

### 833 *10.1.1 Rangeland Treatments*

- 834 • Establishing and maintaining fire breaks or green strips of fire resilient vegetation
- 835 • Limited sagebrush removal in areas where the sagebrush canopy cover is too high (>25%) for  
836 the development of understory grasses and forbs if they are determined to be limited
- 837 • Seeding or plugs with perennial grasses, forbs, and sagebrush to enhance both sage-grouse  
838 habitat and livestock forage
- 839 • Juniper and conifer removal to enhance sage-grouse habitat
- 840 • Weed control (mechanical, herbicides, biological agents)
- 841 • General stewardship of rangelands

### 842 *10.1.2 Livestock Management*

- 843 • Grazing of forage
- 844 • Construction, placement, and maintenance of fences, ponds, stock-tanks and other watering  
845 sources
- 846 • Feeding hay and dietary supplements in pastures
- 847 • Establishing and maintaining remote camps
- 848 • Gathering, moving, trailing, temporary penning, rounding-up and shipping livestock;
- 849 • Calving and branding operations
- 850 • Disposal of dead animals
- 851 • General stewardship and animal husbandry practices

### 852 *10.1.3 Recreation*

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

### 859 *10.1.4 Farm Operations*

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

865 **10.1.5 Developments**

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

869 **10.2 Stipulations on Developments in this CCAA**

870 If proposed new buildings and facilities impact existing sage-grouse habitat the proposal will  
871 need to include internal mitigation that will ensure enrolled lands will still meet the CCAA  
872 standard. These actions must be completed, or funded and scheduled prior to any loss of habitat  
873 quality or quantity associated with the new construction. The type of planned development, scale  
874 in relation to enrolled acres, and location relative to important areas of sage-grouse use, present  
875 habitat condition, and conformance with relevant regulatory policies will be taken into account  
876 when developing the SSP.

877  
878 Developments that are not associated with the immediate operations of the ranch (e.g. multiple  
879 unit residential development or subdivisions, resort developments, energy developments) are not  
880 covered activities under this agreement.

881 **11. Anticipated Incidental Take**

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

887  
888 We considered three primary types of incidental take: (1) injury or death; (2) harm in the form of  
889 habitat fragmentation, loss, or degradation and (3) harassment in the form of human activities  
890 that significantly disrupt normal behavioral patterns such as breeding, feeding, or sheltering. For  
891 each type of take we describe the associated covered activities and conservation measures that  
892 will minimize the take.

893 **11.1 Injury or death**

- 894 • Haying and other farming operations that use heavy equipment can directly kill or injure  
895 adult and juvenile sage-grouse especially brooding females and their young or eggs. If only  
896 the female is killed or injured any young or eggs are likely to die due to lack of parental care.  
897 The risk of this is low because areas that are under cultivation are typically not suitable sage-  
898 grouse habitat; however, margins of fields that have sagebrush habitat nearby may be used  
899 for nesting and foraging. These impacts will be minimized by implementation of practices  
900 identified during site-specific plan development (**Appendix B, Sections I and K**).

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<sup>5</sup> 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.

- 901 • Fences used for livestock management, especially those in certain high-risk locations can  
902 cause direct mortality to sage-grouse from collision (Beck and Mitchell 2000; Connelly et al.  
903 2004; Crawford et al. 2004; Cagney et al. 2010). The risk of collision with fences will be  
904 minimized by removing unnecessary fences; and marking fences in high-risk locations to  
905 make them more visible to sage-grouse (see **CM 28** and **CM29**). Vertical structures such as  
906 telephone and power lines and poles serve as raptor perches and therefore can indirectly  
907 contribute to injury and death to sage-grouse from avian predators. This risk will be  
908 minimized by removing unnecessary structures, undergrounding lines when feasible, and  
909 limiting new construction (see **CM 2** and **CM 5**).
- 910 • Sage grouse can drown in livestock water tanks when they use them as a water source. This  
911 risk will be minimized by properly equipping stock-tanks with escape ramps (see **CM 27**).
- 912 • Standing water sources including stock-tanks and ponds managed for livestock watering can  
913 attract mosquitoes and increase the risk of West Nile virus outbreaks (USFWS 2010). West  
914 Nile virus is known to injure or kill sage-grouse. This risk will be reduced by minimizing  
915 unnecessary standing water sources (see **CM 55**).
- 916 • Use of the herbicides listed in **Appendix E** are not known to directly injure or kill sage-  
917 grouse, however there have been limited studies that are specific to sage-grouse. The risk of  
918 mortality associated with herbicide use will be minimized by only using approved herbicides  
919 consistent with Appendix E, implementing all best management practices and applicable  
920 CMs on enrolled lands (see **CM 34, CM 40, and CM 46**). If it is found that these herbicides  
921 do injure or kill sage-grouse their use may be discontinued as a covered activity consistent  
922 with changed circumstances provisions (see **CCCM16**).

## 923 **11.2 Harm:**

- 924 • Construction of new buildings, fences, powerlines for ranch operations are likely to decrease  
925 habitat quantity and/or quality. Any actions of this type will be carefully designed to  
926 minimize impacts and internal mitigation will be required to ensure that the impact of these  
927 actions are mitigated in order to meet the CCAA standard and meet the objectives of CM 1.  
928 (see **CM 1, CM 2, CM 4, and CM 5**)
- 929 • Removing sagebrush along roadsides to create firebreaks can decrease the amount of this  
930 habitat available to sage-grouse. However, the benefits of firebreaks outweigh the harm.  
931 Firebreaks can prevent large tracts of sage-grouse habitat from being degraded by fire or may  
932 serve as an anchor point to effectively fight fire from. Risk will be minimized by limiting  
933 size of firebreaks. (see **CM 6**)
- 934 • Rangeland treatments may temporarily reduce sagebrush cover in order to inter-seed with  
935 desired grasses and forbs to improve sage-grouse habitat, resulting in a short-term loss but  
936 long-term gain in sage-grouse habitat. This risk will be minimized by limiting size of  
937 treatment area, consideration of how treatments will affect overall landscape for sage-grouse  
938 and assessment of current vegetation condition or other effective measure as identified. (see  
939 **CM 43, CM 44, CM 45, CM 46, and CM 47**)
- 940 • Improperly managed livestock grazing can result in decreased beneficial grasses and forbs in  
941 nesting and brood-rearing habitat (Hagen et al. 2007; Gregg et al. 1994). There are several  
942 CMs that address impacts of livestock grazing and landowners will be required to modify  
943 grazing practices if the threat of “improperly managed livestock grazing” is occurring on  
944 lands to be enrolled. This risk will be further minimized with annual monitoring and  
945

946 reporting of utilization on enrolled lands as well as adapting to drought or other  
947 environmental factors that may increase or decrease forage. (see **CMs 19-30**)  
948 • Concentration of livestock that results in compaction of soils and increased bare ground, can  
949 degrade nesting and brood-rearing habitat and increase the risk of establishing invasive  
950 weeds (Mack and Thompson 1982; Miller and Eddleman 2000). This risk will be minimized  
951 if the threat is identified during site specific plan development by changing timing, intensity,  
952 and duration of livestock grazing in areas at risk or other effective measure as identified. (see  
953 **CMs 19-30**)

### 954 **11.3 Harassment**

- 955 • Due to seasonal accessibility or weather issues, rangeland treatments such as juniper removal  
956 from sagebrush habitat may need to be conducted when sage-grouse are nesting or otherwise  
957 utilizing these areas. If so this would cause some temporary harassment of sage-grouse.  
958 However without treatment, juniper encroachment can make habitat unsuitable for sage-  
959 grouse. Harassment will be minimized through careful scheduling of treatments. (see **CM 15**)
- 960 • Livestock management activities such as moving cattle to different areas may cause sage-  
961 grouse to flush or otherwise disrupt their behavior. In the majority of instances this  
962 disturbance is expected to be of very short duration such that it does not rise to the level of  
963 take. (see **CM 20** and **CM 21**)
- 964 • Farm operations including the use of heavy equipment, vehicles, noise from generators or  
965 windmill powered pumps may cause short-term disturbances to sage-grouse or in the case of  
966 ongoing noise and frequent activities, it may cause sage-grouse to avoid otherwise usable  
967 habitat. These impacts are expected to be fairly localized as birds using the margins of fields  
968 can easily retreat to sagebrush from machinery noise. When economically feasible new and  
969 existing pumps would be converted to solar power to reduce noise and sage-grouse  
970 disturbance. (see **CM 4**)
- 971 • Recreational activities in the vicinity of active leks may cause birds to flush or abandon. This  
972 risk will be minimized by limiting un-necessary access during certain times of the year when  
973 sage-grouse are using enrolled lands (for example: lekking, wintering or brood-rearing) as  
974 applicable. (see **CM 52**)
- 975 • Development activities associated with construction of new buildings, fences, power lines for  
976 ranch operations can cause harassment of sage-grouse. Risk of disturbance from these  
977 activities can be minimized by timing them outside of the breeding and nesting season. (see  
978 **CM 20** and **CM 21**)

### 979 **12. Authorized Take**

980 Authorization of incidental take is provided in the EOS permit issued by the FWS, if sage-grouse  
981 is listed. This authorization is limited to incidental take resulting from covered activities and  
982 implementation of conservation measures identified in the CCAA/SSP or EOS Permit. The  
983 amount of authorized incidental take from covered activities, if 100% of the covered area is  
984 enrolled, would be a maximum of 2,700 sage-grouse over the 30-year term of the CCAA or 90  
985 birds annually. If less than 100% of the area is enrolled under the CCAA, then the authorized  
986 take would be proportionally less. If the species is listed, take will be authorized based on the  
987 amount of acres of PPH and PGH enrolled in the CCAA. Additionally, evaluation of take will be  
988 based on a rolling 5-year average such that if take is high in one year it will not exceed

989 authorized take unless the 5-year average annual take exceeds authorized take. Statewide  
 990 population estimates as well as the amount and types of sage-grouse habitat (PPH and  
 991 PGH)(Table 3, **Appendix F**) available under the Malheur County SWCD CCAA were used to  
 992 come up with this level of take.

993  
 994  
 995

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

<b>Take Calculation:</b>	<b>Habitat Type</b>	<b>Acres Impacted</b>	<b>Birds Exposed</b>	<b>Rate of Injury or Mortality</b>	<b>Annual Take</b>
<b>Rangeland Treatments</b>	5% of PGH	20,701	6	3.59%	0.22
	5% of PPH	23,626	79	3.59%	2.85
<b>Livestock Management</b>					
Nest Abandonment	5% of PGH		51	3.59%	1.84
(60% birds exposed – 1,027 birds)	100% of PPH		975	3.59%	34.98
Nest Trampling	5% of PGH		51	1.11%	0.57
(60% birds exposed – 1,027 birds)	100% of PPH		975	1.11%	10.83
<b>Farm Operations</b>					
Haying	PGH	69,911	21	0.95%	0.20
	PPH	47,309	159	0.95%	1.51
<b>Development</b>					
Fences (high risk marked)	PGH		123	1.62%	1.99
	PPH		1588	1.62%	25.72
<b>Additional Authorized Take</b>	100% of PGH	414,021	123	0.50%	0.61
	100% of PPH	472,528	1588	0.50%	7.94
<b>Total authorized Annual Take</b>					<b>90</b>
<b>Total Take over 30 years</b>					<b>2,700</b>
<b>Annual Take Percentage</b>					<b>5.26%</b>

996  
 997

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

## 998 **12.1 Impacts of the Taking**

999 Authorizing an average annual take of approximately 5% of the estimated statewide spring total  
 1000 sage-grouse population from covered activities will not adversely affect the population (Sedinger  
 1001 2010; Connelly 2000; ODFW 2010). The authorized take associated with this CCAA (5%),  
 1002 combined with ODFW’s actual (3%) or allowed (5%) harvest rates (ODFW 2011) could account  
 1003 for an average 8-10% annual loss of the sage-grouse population in areas that are under this  
 1004 CCAA and where hunting of sage-grouse occurs. Cumulative impacts of harvest on sage-grouse  
 1005 populations in Oregon are evaluated annually by ODFW. An 8-10% loss is within range-wide

1006 sage-grouse management guidelines that recommend a harvest rate of 10% or less for healthy  
1007 sage-grouse populations (Connelly et al. 2000), and below recently published peer-reviewed  
1008 science for Colorado and Nevada, which found “at harvest rates <11% harvest is unlikely to have  
1009 an important influence on local population dynamics of sage-grouse” (Sedinger et al. 2010).

1010  
1011 The authorized amount of take may be adjusted if the statewide 10-year minimum spring  
1012 breeding population average changes by more than 10%. While the total amount of authorized  
1013 take will be proportional to the amount of enrolled properties, take will be counted against the  
1014 whole permit rather than individual properties in order to allow more management flexibility.

## 1015 ***12.2 Monitoring and Evaluation of Take***

1016 Monitoring of take will be addressed through the monitoring strategies associated with the  
1017 SSP/CI. These include monitoring of the extent of occupied habitat and habitat condition.  
1018 Landowners will be required through their SSP/CI to report mortality from incidental take to the  
1019 SWCD, who will report to the FWS as required in **Section 9. Responsibilities of the Parties.**  
1020 While the total amount of authorized take will be proportional to the amount of enrolled  
1021 properties, take will not be allotted to individual landowners. All take that occurs will be counted  
1022 against the whole permit rather than individual properties in order to allow more management  
1023 flexibility. Evaluation of take will be based on a rolling 5-year average such that if take is high in  
1024 one year it will not exceed authorized take unless the 5-year average exceeds the amount of take  
1025 permitted.

## 1026 **13. Expected Benefits**

1027 Benefits to sage-grouse habitat in Malheur County are expected as a result of implemented SSPs  
1028 developed under this agreement. The CMs identified in this CCAA are expected to benefit sage-  
1029 grouse through maintenance, enhancement, and rehabilitation of sage-grouse habitats by  
1030 reducing threats causing direct and indirect mortality. Enhanced survival of sage-grouse is the  
1031 objective of this agreement and implementation of the CMs identified in this CCAA is expected  
1032 to compensate any estimated take. Private rangeland management can be complementary to  
1033 sage-grouse habitat; livestock management was not a primary contributor to the 2010  
1034 “warranted” determination. In the FWS 2010 listing decision, the FWS determined the act of  
1035 grazing was not the specific threat affecting the species, but that some aspects of livestock  
1036 management have the potential to influence habitat loss, fragmentation, and degradation.

1037  
1038 The sage-grouse is affected range-wide by a variety of threats, such as habitat fragmentation  
1039 from wildfire, invasive species, conifer encroachment, energy and other types of development as  
1040 well as predation, recreation, sagebrush conversion and other threats. This CCAA addresses a  
1041 subset of these threats on a portion of the species range, the occupied sage-grouse habitat of  
1042 Malheur County, Oregon. For this CCAA, the conservation measures must reduce all the threats  
1043 within their control on enrolled lands. If actions identified in species conservation strategies<sup>6</sup>  
1044 were undertaken on all necessary properties range-wide, the declining trend would be reversed  
1045 and there would be no need to list. This level of conservation benefit is more than just a net

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<sup>6</sup> 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.

1046 conservation benefit to recovery; it is a reversal in the species trend - if it could be replicated on  
1047 all necessary properties. Thus, it is more than just an improvement in status on that property, it is  
1048 significant reduction in threats.

1049  
1050 Some specific benefits to sage-grouse habitat provided by rangeland management activities  
1051 implemented in accordance with this CCAA include:

- 1052 • maintenance of large tracts of un-fragmented and undeveloped land;
- 1053 • managing fuels to help reduce the risk of catastrophic wildfires and associated fragmentation;
- 1054 • potentially increasing rangeland plant diversity, including perennial grasses and forbs;
- 1055 • weed and invasive species management;
- 1056 • maintenance and enhancement of healthy springs and seeps (Beck and Mitchell 2000;  
1057 Connelly et al. 2004; Crawford et al. 2004; Cagney et al. 2010);
- 1058 • contributing to meeting the strategies and objectives of ODFW’s Strategy (Hagen 2011) that  
1059 are relevant to enrolled private lands; and
- 1060 • ranking preference for obtaining resources from federal, state, and local programs for sage-  
1061 grouse habitat improvement (e.g. NRCS Sage Grouse Initiative, FWS Partners, OWEB).

1062  
1063 Enrolled landowners agree to manage their lands in a manner that provides a benefit to sage-  
1064 grouse. Under an SSP, enrolled lands may be suitable for appropriate mitigation actions or  
1065 conservation banking from off-site development (if and when available). As FWS, SWCD, and  
1066 other cooperators become aware of any mitigation opportunities in Oregon or nationally, they  
1067 will help direct such opportunities to enrolled landowners. Mitigation actions or conservation  
1068 banks for off-site or on-site development may occur, but will have a separate agreement with  
1069 independent requirements (for information about internal mitigation - mitigation within a  
1070 landowner’s enrolled property- see Development Subsection in **Section 10. Covered**  
1071 **Activities**).

1072  
1073 Additionally, the assurances conferred under the CCAA program by section 10(a)(1)(A) EOS  
1074 permits provide economic stability of current land and livestock management activities on  
1075 enrolled lands. Since private landowners control substantial acreage of important habitat for  
1076 sage-grouse, implementation of CMs by enrolled landowners throughout Malheur County could  
1077 potentially maintain or improve over 1 million acres of sage-grouse habitat, county wide. The  
1078 FWS believes if similar conservation measures that address threats to sage-grouse were  
1079 implemented throughout sage-grouse range; the need to list sage-grouse would likely be  
1080 precluded.

## 1081 **14. Assurances Provided**

1082 Through this CCAA, the FWS provides the SWCD and participating landowners enrolled  
1083 through SSPs/CIs with assurances that no additional conservation measures or additional land,  
1084 water, or resource use restrictions, beyond those voluntarily agreed to and described in the  
1085 Conservation Measures (**Appendix A**) of this CCAA and associated SSPs/CIs will be required  
1086 should sage-grouse become listed as a threatened or endangered species in the future, provided  
1087 that the SSPs are being implemented as agreed upon (the **ONLY** exception is when an  
1088 unforeseen circumstance occurs -see **Section 16. Unforeseen Circumstances**). These  
1089

1090 assurances will be authorized with the issuance of an EOS permit under ESA section  
1091 10(a)(1)(A).

## 1092 **15. Changed Circumstances**

1093 Changed circumstances are changes affecting sage-grouse or the geographic area covered by this  
1094 CCAA that can reasonably be anticipated and can be planned for. This CCAA has identified  
1095 wildfire, drought, West Nile virus, catastrophic flooding, habitat fragmentation from  
1096 development, and herbicide use as potential changed circumstances that are expected to occur  
1097 over the 30-year life of the permit.

1098  
1099 If it is determined by the landowner, SWCD, or FWS that a changed circumstance(s) exist, the  
1100 landowner will implement the appropriate changed circumstance conservation measures  
1101 (CCCMs) or a mutually agreed upon approach to address the additional threat or threats created  
1102 by the changed circumstance(s). CCCMs will be adopted to meet the CCAA standard on enrolled  
1103 lands. All modifications, changes or additions to the SSP will be mutually agreed upon by the  
1104 landowner, SWCD and FWS. If a changed circumstance(s) occurs, the SWCD will notify the  
1105 FWS of the enrolled lands affected, the impact of the changed circumstance(s), and the CCCM(s)  
1106 that will be implemented to address the changed circumstance(s), the FWS will provide a letter  
1107 of concurrence (within 30 days) to the SWCD approving the CCCMs if the CCCM's will allow  
1108 enrolled lands to continue to meet the CCAA standard. The following list provides possible  
1109 conservation measures to address threats created by a changed circumstance(s). Conservation  
1110 Measures not identified on this list may be developed with landowner agreement and with  
1111 approval of FWS.

### 1112 **15.1 Wildfire**

1113 Wildfire impacts affecting landowners enrolled with SSPs/CIs will be handled on a case-by-case  
1114 basis. SWCD will work with the individual landowners to determine the management practices  
1115 to be applied, which may include:

1116 **CCCM 1.** SWCD will evaluate with the landowner the need for rehabilitation based on pre-  
1117 fire plant community health, fire intensity, and proximity to invasive annual species (e.g.  
1118 cheatgrass, medusahead). SWCD will provide a written summary to the landowner of their  
1119 evaluation and need for active rehabilitation or for natural recovery.

1120 **CCCM 2.** Landowner will allow for natural vegetation recovery where healthy pre-fire plant  
1121 communities exist and observed fire intensity indicates natural recovery and proximity of  
1122 invasive species are not a concern. Timing of livestock grazing following wildfire will  
1123 depend on response of desirable vegetation. SWCD and the landowner will identify and set  
1124 quantifiable objectives for post-fire vegetation recovery based on pre-fire monitoring data,  
1125 returning livestock grazing once objectives have been met.

1126 **CCCM 3.** Following wildfire, landowner will participate in rehabilitation where natural  
1127 recovery is unlikely, due to fire intensity and/or proximity to invasive annual species, and  
1128 where feasible, practicable, and if adequate funding is available. Where annual grasses are  
1129 prevalent, plant aggressive fire-resistant perennial species to stabilize the site and allow for  
1130 long-term recovery of sagebrush and other native species.

1131 **CCCM 4.** Landowner will implement, as needed, CMs listed under "Threat: Exotic Annual  
1132 Invasion" in **Appendix A**.

1133

1134 **CCCM 5.** SWCD will conduct post-treatment monitoring to determine if rehabilitation  
1135 techniques have been successful or if implementation changes are indicated (see **Section 6.**  
1136 **Inventory and Monitoring Protocols**).  
1137 **CCCM 6.** Landowners will replace fence or temporarily fence where needed to protect  
1138 recovering habitat post-fire, and, where appropriate, mark these fences with anti-strike  
1139 markers or other agreed upon visual markers, as described by CM 30 in **Appendix A.**

## 1140 **15.2 Drought**

1141 When rangeland plants are deprived of precipitation, it affects the plant's growth cycle, volume  
1142 of growth, and fruition. When drought conditions exist, annual monitoring will be used to  
1143 determine site-specific recommendations. Drought is site specific and is typically considered to  
1144 occur when two growing seasons of precipitation are below the long-term average, affecting  
1145 plant life cycles as described above. Prolonged drought is when the conditions described above  
1146 persist for three or more growing seasons.

1147  
1148 Variation in precipitation is common throughout the sage-grouse range. Annual rangeland  
1149 monitoring and CMs on enrolled lands are expected to address year-to-year variations in  
1150 precipitation. Droughts in important sage-grouse habitats may create conditions reducing  
1151 seasonally available habitat resulting in changed circumstances. In some instances, failure to  
1152 make timely adjustments in livestock use during drought has resulted in limited plant regrowth,  
1153 overuse in wet meadows and riparian areas, and has negated gains in rangeland conditions made  
1154 during higher-precipitation years (Thurrow and Taylor 1999).

1155  
1156 In the event of moderate to extreme drought, as determined by National Oceanic and  
1157 Atmospheric Administration (NOAA)<sup>7</sup> or if annual monitoring indicates drought conditions, the  
1158 SWCD will meet with enrolled landowners to evaluate the drought condition effect on sage-  
1159 grouse habitat and then consult with FWS. The following CCCM is intended to address the  
1160 changed circumstance:

1161 **CCCM 7.** Utilize adaptive management to adjust levels and season of livestock grazing during  
1162 drought conditions to maintain suitable sage-grouse habitat using the site specific conditions  
1163 as determined in the baseline and subsequent trend monitoring. These adaptive management  
1164 measures may include:

- 1165 a. Implement management changes, such as grazing rest, deferment, rotation, or  
1166 other changes designed to maintain long-term vegetation health for sage-grouse  
1167 habitat.
- 1168 b. Develop grass banks for use during drought conditions.
- 1169 c. Develop additional water sources for livestock and sage-grouse.
- 1170 d. Employ other vegetation management to ensure long-term plant community  
1171 health.

## 1172 **15.3 West Nile virus**

1173 WNV has spread to eastern Oregon. In 2006, a die-off of at least 60 sage-grouse was documented  
1174 near Burns Junction, Oregon, and two other sage-grouse deaths were confirmed from WNV near  
1175 Crane and Jordan Valley, Oregon. Of the birds found dead, three provided suitable tissue

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<sup>7</sup> For updated drought conditions visit the following link: <http://www.ncdc.noaa.gov/sotc/drought/2012/8>

1176 samples and all were confirmed to be infected with WNV. No other significant mortalities have  
1177 been documented in Oregon since 2006. However, there is the potential for an outbreak among  
1178 sage-grouse, which are susceptible to the disease and suffer a high rate of mortality when  
1179 infected. Currently, sage-grouse show low to no resistance to WNV, and mortality is assumed to  
1180 be 100% (Naugle et al. 2004).

1181  
1182 If outbreak occurs, as identified by state health officials<sup>8</sup> or other appropriate regulatory agency,  
1183 the landowner should implement the following CCCMs, as appropriate:

1184 **CCCM 8.** Report observations of dead or sick sage-grouse or other bird deaths that could be  
1185 attributed to disease or parasites to SWCD or FWS within 48 hours.

1186 **CCCM 9.** Cooperate with responsible agencies to implement feasible mosquito control, which  
1187 may include:

1188 a. Minimize unnecessary standing water that could be used as mosquito breeding  
1189 grounds within sage-grouse habitat

1190 b. Use larvicides in areas that mosquito habitat cannot be reduced

1191 c. Evaluate the effectiveness of spraying for adult mosquitoes, and consider using  
1192 mosquito specific control measures

#### 1193 ***15.4 Habitat fragmentation and disturbance resulting from development***

1194 Impacts can include both direct loss of habitat from agricultural conversion or sagebrush removal  
1195 and habitat fragmentation by roads, pipelines, power lines, wind turbines, and other  
1196 infrastructure. Accompanying noise disturbance can also reduce lek attendance and nesting  
1197 success.

1198  
1199 In the event of development on, or adjacent to, lands enrolled under this programmatic CCAA, in  
1200 which the landowner does not have the legal ability (e.g. split estate mineral rights, noise  
1201 disturbance from adjacent development) to exclude such development, the following measures  
1202 may apply:

1203 **CCCM 10.** The SWCD, FWS and the landowner will evaluate the direct and indirect impacts  
1204 to determine if the impacts will negate the intended benefits of the conservation measures  
1205 being implemented or planned to be implemented on the enrolled lands.

1206 **CCCM 11.** If these impacts are found to negate the CMs on some portion of the enrolled  
1207 lands the landowner, SWCD and FWS will meet and develop alternative, mutually agreed  
1208 upon conservation measures including, but not limited to, alternate CM implementation  
1209 location within the enrolled lands.

1210  
1211 In the event that planned development, on lands that the landowner chose not to enroll in the  
1212 CCAA but *does* have legal control of, is likely to affect sage-grouse and their habitats on the  
1213 landowner's enrolled lands, the following CCCMs may apply:

1214 **CCCM 12.** The landowner, SWCD, and FWS will evaluate the direct and indirect impacts to  
1215 determine if the impacts are likely to negate the intended benefits of the conservation  
1216 measures being implemented or planned to be implemented on the enrolled lands.

1217 **CCCM 13.** If these impacts are found to negate the CMs to the extent that the CCAA standard

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<sup>8</sup> Website/link of the health authorities that track West Nile virus in Oregon:  
<http://public.health.oregon.gov/DISEASES/CONDITIONS/DISEASESAZ/WESTNILEVIRUS/Pages/survey.aspx>

1218 is no longer being met, the landowner will work with the SWCD and FWS and develop an  
1219 alternate approach for the planned development or for the enrolled lands to maintain the  
1220 CCAA standard and landowner enrollment. If an agreement cannot be reached and the  
1221 CCAA standard is no longer being met, the enrolled landowner or the SWCD or FWS can  
1222 terminate the SSP and associated assurances provided under the CI.

### 1223 **15.5 Catastrophic Flooding**

1224 Excessive runoff resulting from catastrophic hydrological events (e.g. rain on snow event) are  
1225 associated with mass-wasting of hill slopes, damage to river banks, and downstream flooding.  
1226 These events have the capability to drastically change stream hydrology and vegetative  
1227 composition of riparian corridors. These events are often associated with a 100-year flood cycle.

1228 **CCCM 14.** Utilize adaptive management based on evaluation of degree of flood impact.  
1229 Adjust levels and season of livestock grazing after a catastrophic flood event to maintain  
1230 and/or rehabilitate suitable sage-grouse habitat.

1231 **CCCM 15.** Re-evaluate stream segments to identify critical areas and changes in ecological  
1232 state and identify measures that could enhance stream function.

### 1233 **15.6 Herbicide Use**

1234 Currently, information is lacking on the direct effects of herbicides to sage-grouse; however,  
1235 research on sage-grouse is ongoing and published studies and other new information often  
1236 become available. If new research or other information indicates that one or more of the covered  
1237 herbicides causes significant adverse effects to sage-grouse that outweigh the benefits of treating  
1238 their habitats, the following CCCM may be implemented.

1239 **CCCM 16.** The Service can remove those herbicides (or group of herbicides) from the  
1240 covered list; or if feasible require implementation of additional best management practices  
1241 with SWCD and/or enrolled landowners to avoid and minimize take.

## 1242 **16. Changed Circumstances Not Provided for in the CCAA**

1243 If FWS determines that additional conservation measures not provided for in the CCAA are  
1244 necessary to respond to the changed circumstances, the FWS will not require any additional  
1245 CMs in the CCAA or the SSP/CI without the consent of the enrolled landowner, provided the  
1246 SSP is being properly implemented. The SWCD, FWS, and/or the landowner, if he or she  
1247 desires, will assist by seeking funding to implement the agreed upon CMs.

## 1248 **17. Unforeseen Circumstances**

1249 Unforeseen circumstances are changes in circumstances affecting sage-grouse or the geographic  
1250 area covered by the CCAA that could not reasonably have been anticipated by the landowner,  
1251 SWCD and the FWS at the time of the CCAA's development, and result in a substantial and  
1252 adverse change in the status of the sage-grouse.

1253  
1254 The only situation where modification of conservation measures can be required by FWS is an  
1255 unforeseen circumstance. To respond to unforeseen circumstances, the FWS may require  
1256 modified or additional conservation measures by the landowner, but only if such measures  
1257 maintain the original terms of the CCAA/SSP. The FWS will consider whether failure to adopt  
1258 additional conservation measures would appreciably reduce the likelihood of survival and

1259 recovery of sage-grouse in the wild. Additional conservation measures will not involve the  
1260 commitment of additional land, water, or landowner funds, or additional restrictions on the  
1261 use of land, water, or other natural resources available for development or use under the  
1262 original terms of the CCAA without the consent of the landowner, provided the SSP/CI is  
1263 being properly implemented. Funding for conservation measures warranted under this section  
1264 will be sought by FWS, SWCD, and/or other partners, including the landowner if he or she  
1265 desires.

1266  
1267 The FWS will have the burden of demonstrating that unforeseen circumstances exist, using  
1268 information that is both reliable and credible and incorporates the best scientific and commercial  
1269 data available. These findings must be clearly documented and based upon reliable technical  
1270 information regarding the status and habitat requirements of sage-grouse. The FWS will  
1271 consider, but not be limited to, the following factors:

- 1272 • Size of the current range of sage-grouse
- 1273 • Percentage of range adversely affected within the CCAA
- 1274 • Percentage of range conserved by the CCAA
- 1275 • Ecological significance of that portion of the range affected by the CCAA
- 1276 • Level of knowledge about sage-grouse and the degree of specificity of the species'  
1277 conservation program under the CCAA

## 1278 **18. Duration of CCAA, EOS Permit, and SSP/CI**

1279 This programmatic CCAA will be in effect for 30 years following its approval and signing by the  
1280 FWS. The section 10(a)(1)(A) EOS permit authorizing take of the species also will have a term  
1281 of 30 years from the effective date of the permit. This duration should be sufficient to determine  
1282 that the CMs are benefiting the sage-grouse. SSPs/CIs for enrolled landowners will be in effect  
1283 for up to 30 years (or the amount of years remaining on the EOS permit for the programmatic  
1284 CCAA) following FWS approval through a Letter of Concurrence and signing of the SSP/CI by  
1285 the landowner and SWCD. This suits the practicalities of maximizing enrollment opportunities  
1286 for interested landowners. While sage-grouse remain unlisted, the FWS may renew SSPs/CIs and  
1287 permits, based upon reevaluation of the CCAA's ability to continue to meet the CCAA standard.  
1288 An enrolled landowner may also voluntarily terminate a SSP/CI as described in **Section O**.  
1289 **Termination of SSP/CI**, located in **Appendix B**. The FWS can only enroll new properties as  
1290 long as sage-grouse has not been listed.

## 1291 **19. Modification of Programmatic CCAA**

1292 The FWS may not, through modification of the programmatic CCAA, impose any new  
1293 requirements or conditions on, or modify any existing requirements or conditions applicable to,  
1294 an enrolled landowner or successor in interest to the landowner to compensate for changes in the  
1295 conditions or circumstances of any species or ecosystem, natural community, or habitat covered  
1296 by the CI except as stipulated in 50 CFR 17.22(d)(5) and 17.32(d)(5).

1297  
1298 17.22 is the section of the Code of Federal Regulations (CFR) pertaining to: Permits for  
1299 scientific purposes, enhancement of propagation or survival, or for incidental taking.

1300 17.32 is the section of the Code of Federal Regulations CFR pertaining to: Permits – general.

1301

1302 Language for both CFR sections is identical, and is as follows:  
1303 (5) *Assurances provided to permittee in case of changed or unforeseen circumstances.* The  
1304 assurances in this paragraph (d)(5) apply only to permits issued in accordance with paragraph  
1305 (d)(2) where the Candidate Conservation with Assurances Agreement is being properly  
1306 implemented, and apply only with respect to species adequately covered by the Candidate  
1307 Conservation with Assurances Agreement. These assurances cannot be provided to Federal  
1308 agencies.

## 1309 **20. Succession and Transfer**

1310 Within the SSP, the enrolled landowner agrees to give 30 days' written notice to the SWCD of  
1311 his or her intent to sell the enrolled property or of any transfer of ownership, so that the SWCD  
1312 can attempt to contact the new owner, explain the baseline responsibilities applicable to the  
1313 property, and allow the new owner to have the option of receiving CCAA assurances by signing  
1314 the original SSP/CI. As a party to the original SSP/CI and permits, the new owner will have the  
1315 same rights and obligations with respect to the enrolled property as the original owner.  
1316 Alternatively, the new owner may enroll in a new SSP/CI if sage-grouse has not been listed.  
1317 Assignment or transfer of the permit shall be governed by FWS regulations in force at the time.  
1318 If a new owner chooses not to enroll, the permit authorizations and assurances will cease.

## 1319 **21. EOS Permit Suspension or Revocation**

1320 The FWS may suspend the privileges of exercising some or all of the EOS permit authority at  
1321 any time if the permittee is not in compliance with the conditions of the permit, or with any  
1322 applicable laws or regulations governing the conduct of the permitted activity. Such suspension  
1323 shall remain in effect until the issuing officer determines that the permittee has corrected the  
1324 deficiencies.

1325  
1326 *The FWS may not revoke an EOS permit except as follows:*

1327  
1328 The FWS may revoke an EOS permit for any reason set forth in 50 CFR 13.28(a)(1) through (4).  
1329 This regulation authorizes revocation if: the permittee willfully violates any Federal or State  
1330 statute or regulation, or any Indian tribal law or regulation, or any law or regulation of any  
1331 foreign country, which involves a violation of the conditions of the permit or of the laws or  
1332 regulations governing the permitted activity; or the permittee fails within 60 days to correct  
1333 deficiencies that were the cause of a permit suspension; or the permittee becomes disqualified; or  
1334 a change occurs in the statute or regulation authorizing the permit that prohibits the continuation  
1335 of a permit issued by FWS.

1336  
1337 *A permit can be disqualified or revoked if:*

- 1338 1. A conviction, or entry of a plea of guilty or nolo contendere, for a felony violation of the  
1339 Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act  
1340 disqualifies any such person from receiving or exercising the privileges of a permit,  
1341 unless such disqualification has been expressly waived by the Director in response to a  
1342 written petition.

- 1343 2. The revocation of a permit for reasons found in § 13.28 (a)(1) or (a)(2) disqualifies any  
1344 such person from receiving or exercising the privileges of a similar permit for a period of  
1345 five years from the date of the final agency decision on such revocation.
- 1346 3. The failure to pay any required fees or assessed costs and penalties, whether or not  
1347 reduced to judgment disqualifies such person from receiving or exercising the privileges  
1348 of a permit as long as such moneys are owed to the United States. This requirement shall  
1349 not apply to any civil penalty presently subject to administrative or judicial appeal;  
1350 provided that the pendency of a collection action brought by the United States or its  
1351 assignees shall not constitute an appeal within the meaning of this subsection.
- 1352 4. The failure to submit timely, accurate, or valid reports as required may disqualify such  
1353 person from receiving or exercising the privileges of a permit as long as the deficiency  
1354 exists.

1355 The FWS may revoke an EOS permit if continuation of the permitted activity would either  
1356 appreciably reduce the likelihood of survival and recovery in the wild of any listed species, or  
1357 directly or indirectly alter designated critical habitat such that it appreciably diminishes the value  
1358 of that critical habitat for both the survival and recovery of a listed species.

1359 Before revoking a permit for either of the two reasons in the preceding paragraph, the FWS, with  
1360 the consent of the permittee, will pursue all options that FWS consider appropriate to avoid  
1361 permit revocation. These options may include, but are not limited to: extending or modifying the  
1362 existing permit, compensating the enrolled landowner to forgo the activity, purchasing an  
1363 easement or fee simple interest in the enrolled property, or arranging for a third party acquisition  
1364 of an interest in the property.  
1365

## 1366 **22. Remedies**

1367 Each party shall have all remedies otherwise available to enforce the terms of the CCAA and the  
1368 EOS permit, except that no party shall be liable in monetary damages for any breach of this  
1369 CCAA, any failure to perform an obligation under this CCAA, or any other cause of action  
1370 arising from this CCAA.

## 1371 **23. Dispute Resolution**

1372 The landowner, SWCD, and FWS recognize disputes concerning implementation of, compliance  
1373 with, or termination of the CCAA, EOS permit, or SSP/CI may arise from time to time. The  
1374 landowner, SWCD, and FWS agree to work together in good faith to resolve such disputes, using  
1375 the informal dispute resolution procedures set forth in this section, or such other procedures upon  
1376 which the parties may later agree. However, if at any time any party determines circumstances so  
1377 warrant, they may seek any available remedy without waiting to complete informal dispute  
1378 resolution.

1379 Unless the parties agree upon another dispute resolution process, or unless an aggrieved party  
1380 has initiated administrative proceedings or suit in Federal court as provided in this section, the  
1381 parties may use the following process to attempt to resolve disputes:  
1382

1383  
1384

- 1385
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- 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.

## 1400 **24. Availability of Funds**

1401 Nothing in this CCAA will be construed by any party to require the obligation, appropriation, or  
1402 expenditure of any funds from the U.S. Treasury. The FWS will not be required under this  
1403 CCAA to expend any federal agency’s appropriated funds unless and until an authorized official  
1404 of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

## 1405 **25. Relationship to Other Agreements**

1406 The Oregon Cattlemen’s Association, BLM, and FWS have signed a Candidate Conservation  
1407 Agreement (CCA) for certain public lands. Most livestock operations in eastern Oregon are  
1408 dependent upon public land livestock grazing for much or portions of their livestock grazing  
1409 operations. The Harney SWCD and FWS have signed a sage-grouse CCAA for private  
1410 rangelands in Harney County. In addition, the remaining eastern Oregon SWCDs with sage-  
1411 grouse habitat within their jurisdiction (Lake, Crook, Deschutes, Baker, Grant, and Malheur  
1412 County SWCDs) are working with the FWS on sage-grouse CCAA that will nearly be identical  
1413 to the Harney County sage-grouse CCAA. These CCAA and CCA efforts in Oregon provide a  
1414 unique opportunity for landscape-scale conservation of sage-grouse habitat in Oregon. While  
1415 private and federal lands are innately different, coordination between the CCAA and the CCA is  
1416 critical for landowners to manage for sage-grouse across their private lands and onto their federal  
1417 allotments.

## 1418 **26. No Third-Party Beneficiaries**

1419 This programmatic CCAA and any subsequent SSPs/CIs signed under the programmatic CCAA  
1420 do not create any new right or interest in any member of the public as a third-party beneficiary,  
1421 nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or  
1422 damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of  
1423 the landowner, SWCD, and FWS to this CCAA with respect to third parties shall remain as  
1424 imposed under existing law.

1425 **27. Reports**

1426 Annual summary reports will be delivered to the person listed below:  
1427 Field Supervisor, La Grande Field Office  
1428 U.S. Fish and Wildlife Service  
1429 3502 Highway 30  
1430 La Grande, OR 97850

1431 **28. Notices**

1432 This programmatic CCAA was written with the participation of the Steering Committee (for list  
1433 of parties, see p. 6-7). It is because of the collaborative efforts of those parties that this CCAA  
1434 was completed.

1435  
1436 IN WITNESS WHEREOF, THE SIGNING PARTIES HERE TO have, as of the last signature  
1437 date below, executed this programmatic Candidate Conservation Agreement with Assurances to  
1438 be in effect as of the date of the last signatory to sign this agreement.

1439  
1440 \_\_\_\_\_  
1441 Board Chair \_\_\_\_\_ Date  
1442 Malheur County Soil and Water Conservation District

1443  
1444  
1445 \_\_\_\_\_  
1446 **Title** \_\_\_\_\_ Date  
1447 U. S. Fish and Wildlife Service

1448  
1449  
1450

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- 1591

1592 **APPENDIX A – Conservation Measures**

1593 Sage-Grouse Conservation Measures: All Conservation Measures (CMs) listed in this appendix  
1594 and any CMs developed for a Site Specific Plan (SSP) will maintain or improve sage-grouse  
1595 habitat, while contributing to the economic stability and sustainability of the individual  
1596 properties/ranches and of Malheur County. The SSP developed for an individual property will  
1597 identify threats to sage-grouse that exist on that property. This list implies possible conservation  
1598 measures to be applied to address threats and will serve as a menu of options for all parties to use  
1599 when developing SSPs. Each identified threat will be addressed with one or more CM from the  
1600 list below and additionally, **conservation measures not identified on this list may be**  
1601 **developed with landowner agreement and with the approval of FWS.**  
1602

1603 This list of threats to sage-grouse has been subdivided into habitat-related and species-specific  
1604 threats. The conservation objectives for habitat-related threats are listed in the programmatic  
1605 CCAA under **Section 6. Inventory and Monitoring Protocols** in Figures 2-4, applicable  
1606 objectives from these figures will be included in each SSP. The conservation objectives for  
1607 species-specific threats are listed in this appendix, below the specific threat.  
1608

1609 These conservation measures have been developed, some specific and some general, based on  
1610 the best available knowledge, science, and experience.  
1611

1612 **A. Habitat-Related Threats**

1613 **Threat: Fragmentation of the landscape** - Fragmentation of the landscape causes birds to  
1614 leave leks or abandon nests or important habitats (i.e., direct impact to nests and brooding hens),  
1615 resulting in decreased reproductive success.

1616 **Conservation Measures:**

- 1617 1. All enrolled landowners must agree to: **Maintain contiguous habitat by avoiding**  
1618 **further fragmentation.** The objective for this required CM is for no net loss in 1)  
1619 habitat quantity (as measured in acres) and 2) habitat quality (as determined by the  
1620 ecological state). The baseline determination of habitat quality and quantity will be  
1621 completed during the baseline inventory and will serve as a reference point in meeting  
1622 the objective for CM 1. Losses in sage-grouse habitat quantity may be offset by  
1623 increases in sage-grouse habitat quality and vice versa, as long as the action avoids  
1624 further fragmentation (consistent with **Section 10. Covered Activities** - Development  
1625 subsection).
- 1626 2. Consolidate new roads, buildings, and power lines.
- 1627 3. Consider entering into conservation easements.
- 1628 4. Convert generator or windmill powered pumps (noise) to solar, when economically  
1629 feasible.
- 1630 5. Consider removing vertical structures (i.e. raptor perches) by burying new and existing  
1631 power lines, and where possible cooperate with local utilities to retrofit powerlines to  
1632 reduce raptor perches, when economically feasible.  
1633

1634 **Threat: Wildfire** - Wildfires can remove long-lived species such as sagebrush, reducing sage-  
1635 grouse habitat quality and quantity.  
1636  
1637

1638 **Conservation Measures:**

- 1639 6. Identify sage-grouse habitat as a high priority for protection and prevention in the SSP.  
1640 Map lands as PPH and PGH. The following proactive prevention measures may apply:  
1641 a. In years of high fuel load accumulation, strategically utilize livestock grazing to  
1642 reduce fuel loads while maintaining suitable habitat for sage-grouse, consistent  
1643 with the livestock management practices section.  
1644 b. Design, establish, and maintain fire breaks or green-stripping along key existing  
1645 roadways to provide a fuel break and safe zone from which to fight fire. Strips  
1646 would be no larger than 50ft on either side of a road, which will provide foraging  
1647 habitat for sage-grouse and provide >100ft of fuel breaks. Within fuel breaks  
1648 where annual grasses are prevalent, plant aggressive, fire-resistant perennial  
1649 species to stabilize the site, with the long-term objective of re-establishing native  
1650 species.  
1651 c. In a SSP, identify key roads on a map that could serve as a fire break to be  
1652 widened approximately 50ft on either side of the road, when wildfire actively  
1653 threatens enrolled lands. These maps will be available to the fire personnel.  
1654 d. Attain wildfire training certification. Where possible join or assist Rangeland Fire  
1655 Protection Associations (RFPA) and state and federal fire officials (at  
1656 landowner's discretion) with initial attack to protect existing or potential sage-  
1657 grouse habitat.<sup>9</sup>  
1658 7. Use direct attack tactics when it is safe and effective to reduce the amount of burned  
1659 habitat. Direct attack supported by any available mechanized equipment (i.e. bulldozer,  
1660 tractor w/blade, aerial drops) is the most efficient at reducing the overall size of  
1661 rangeland fires thereby keeping habitat intact. It is most critical during initial attack  
1662 before the fire gains momentum.  
1663 8. Retain unburned areas (including interior islands and patches between roads and the  
1664 fire perimeter) of sage-grouse habitat unless there is a compelling safety, resource  
1665 protection, or control objectives at risk.  
1666

1667 **Threat: Loss of sagebrush habitat due to lack of fire and associated conifer**  
1668 **encroachment** - High elevation plant communities are dependent upon periodic fire to  
1669 maintain healthy functional plant communities. The use of prescribed fire in low elevation  
1670 sagebrush communities can result in a reduction of sage-grouse habitat in quality and quantity.  
1671 Work with agency specialists to determine need for treatment and, if needed, the appropriate  
1672 method (e.g., chainsaw, heavy machinery, mastication, feller buncher, forwarder, removal,  
1673 chemical, prescribed fire, or a combination). Choose methods that will minimize soil disturbance  
1674 or sterilization and methods least likely to result in weed invasions.

1675 **Conservation Measures:**

- 1676 9. Utilize prescribed fire treatments which will generally occur at higher elevations, where  
1677 there is little risk of invasive plant establishment post-treatment. Treatments will be  
1678 conducted so there is a mosaic of sagebrush and burned areas to provide a seed source  
1679 for sagebrush and native grass and forb regeneration.  
1680 10. Remove encroaching juniper from sagebrush communities through mastication or

---

<sup>9</sup> 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.

1681 cutting of juniper and burning piled trees and limbs, if necessary, (“jack-pot burning”,  
1682 which involves returning to juniper piles when the ground is frozen or saturated to  
1683 conduct burning), or other methods that are mutually agreed upon by the SWCD,  
1684 landowner, and FWS. Ensure timing of these burns does not interfere with lekking or  
1685 other known seasonal movements of sage-grouse (see “Threat: Juniper/Conifer  
1686 Expansion” for full specifications).

- 1687 **11.** Limit use of prescribed fires at lower elevations. Prescribed fire at these elevations will  
1688 only be used when there are no other options, or a pre-burn evaluation has determined  
1689 the risk of cheatgrass and other invasive weeds is minimal, and there is low risk of  
1690 reducing critical sage-grouse habitat features.

1691  
1692 **Threat: Juniper/Conifer Expansion** - Juniper/conifer encroachment can lead to a reduction  
1693 of sage-grouse habitat, use, or abandonment. Slash from mechanical or chemical removals may  
1694 continue to compromise habitat use.

1695 **Conservation Measures:**

- 1696 **12.** Remove encroaching juniper/conifer within existing riparian and transitional zones.  
1697 **13.** Treat/remove encroaching juniper/conifer in sage-grouse habitats.  
1698 **14.** For Phase I, juniper felling and leaving or mastication in place may be effective. Limb  
1699 or masticate any branches >4 ft in height on a felled tree (i.e., lop and scatter).  
1700 **15.** For Phase I and Phase II, felling of trees with chainsaw, feller bunchers or mastication  
1701 of trees in place may be most appropriate treatment. Removal of large tree bowls may  
1702 be beneficial for treatment area and beneficial for landowner, wildlife, livestock and  
1703 communities as well as other habitat improvement or bio-mass projects. Where jackpot  
1704 burning is the most appropriate method of slash removal, consider a spring burn (Mar-  
1705 Apr) when soils tend to be frozen but the moisture content of the felled trees is low.  
1706 Ensure timing of these actions does not interfere with lekking or other known seasonal  
1707 movements of sage-grouse.  
1708 **16.** Conduct broadcast burns of juniper-invaded sagebrush, judiciously taking into  
1709 consideration the spatial and habitat needs of sage-grouse relative to the size of the  
1710 burn.  
1711 **17.** Seed juniper treatment when current perennial grass community is in poor condition  
1712 (<2 plants /10ft<sup>2</sup>, <1 plant/10ft<sup>2</sup> on dry and wet sites) or if exotic annual grasses are  
1713 present. Broadcast seeding prior to soil disturbance or under slash may increase the  
1714 chances of establishment.  
1715 **18.** Rest treated area from grazing following treatment. Length of rest will depend on  
1716 understory composition at time of treatment and response of desirable vegetation  
1717 following treatment. Set quantifiable objectives for post-treatment vegetation recovery  
1718 based on pre-treatment monitoring data, return livestock grazing once objectives have  
1719 been met.

1720  
1721 **Threat: Unmanaged and/or Improper Grazing** - Livestock, humans, and vehicles can  
1722 physically disturb and cause birds to leave leks or abandon nests (i.e., direct impact to nests and  
1723 brooding hens) resulting in decreased reproductive success. However, appropriate livestock  
1724 grazing regimes (generally light to moderate utilization 25-50% (BLM Tech Reference 17-34-3)  
1725 in nesting habitat) are compatible with sage-grouse habitat needs. The goal of grazing  
1726 management is to maintain the desired ecological state or move the plant community toward the

1727 desired state. Adaptive management will be necessary to adjust levels and season of livestock  
1728 grazing with a forage supply that is ever changing in response to varying growing conditions for  
1729 vegetation (e.g., interannual climate variation) and habitat conditions. Annual monitoring  
1730 information will be used by the landowner to make adjustments to grazing management to ensure  
1731 a desirable vegetation trend is maintained (see **Section 6. Inventory and Monitoring**  
1732 **Protocols**).

1733 **Conservation Measures:**

- 1734 **19.** Avoid placing salt, water, or mineral supplements within 0.6 miles of the perimeter of  
1735 an occupied lek.
- 1736 **20.** Reduce disruptive activities one hour after sunset to two hours after sunrise from March  
1737 1 through June 30 within 0.6 miles of the perimeter of occupied leks, unless brief  
1738 occupancy is essential for routine ranch activities (e.g., herding or trailing livestock into  
1739 or out of an area at the beginning or end of the grazing season). Examples of disruptive  
1740 activities may include noise, human foot or vehicle traffic, or other human presence.
- 1741 **21.** Reduce off-trail vehicular travel in nesting habitat from March 1 through June 30 unless  
1742 travel is essential for routine ranch activities (including but not limited to: repairing  
1743 fence, “doctoring” livestock, finding lost livestock, and irrigation activities).
- 1744 **22.** Develop and/or use a written grazing management plan to maintain or enhance the  
1745 existing plant community to ensure a community suitable as sage-grouse habitat. If  
1746 available, use approved ecological site descriptions to set realistic goals for the plant  
1747 community. (Example: NRCS Oregon 2007; Conservation Practice Standard –  
1748 Prescribed Grazing Code 528).
- 1749 **23.** Change salting and watering locations to improve livestock distribution and maintain or  
1750 enhance sage-grouse habitat quality.
- 1751 **24.** Avoid alteration of winter habitat with winter feeding in occupied habitat unless it is  
1752 part of a plan to improve ecological health or to create mosaics in dense sagebrush  
1753 stands that are needed for optimum sage-grouse habitat, or is needed for emergency  
1754 care of livestock.
- 1755 **25.** Develop additional water sources for wildlife and livestock, to reduce impacts to  
1756 riparian, wetland, playas, and wet meadow areas important to sage-grouse.
- 1757 **26.** Spring developments should be constructed or modified to maintain their free-flowing  
1758 and wet meadow characteristics.
- 1759 **27.** Ensure wildlife accessibility to water and install escape ramps in all new and existing  
1760 water troughs.
- 1761 **28.** Avoid construction of new livestock facilities (livestock troughs, fences, corrals,  
1762 handling facilities, “dusting bags,” etc.) at least 0.6 miles from leks or other important  
1763 areas of sage-grouse habitat (i.e., known wintering and brood rearing areas) to avoid  
1764 concentration of livestock, collision hazards to flying birds, or avian predator perches.
- 1765 **29.** Refer to the model by Bryan Stevens for identification of areas that may contain fences  
1766 that pose the highest threat to sage-grouse. In high-risk areas, remove unnecessary  
1767 fences and relocate or mark needed fences with anti-strike markers or other agreed  
1768 upon visual markers (Stevens 2011).
- 1769 **30.** Manage grazing in riparian areas to ensure bank stability, survival of deep-rooted  
1770 riparian vegetation, floodplain connectivity, and stream functionality.

1771  
1772

1773 **Threat: Exotic Invasive Vegetation** - Establishment of plant communities that do not provide  
1774 suitable habitat (e.g., introductions and monocultures of non-native, invasive plants) are reducing  
1775 sage-grouse habitat quality and quantity. Prevention and early detection is needed. Invasive  
1776 weeds continue to expand from borders of large infestations. Many sagebrush-steppe  
1777 communities have crossed a threshold after which they are no longer recoverable by control  
1778 methods.

1779 **Conservation Measures:**

- 1780 **31.** Enrollees will work with county weed experts and other experts to ensure they can  
1781 identify the invasives that are a threat to their land, to establish weed prevention areas,  
1782 and to explore available assistance to implement treatments.
- 1783 **32.** Identify and implement treatments for enrolled lands that will promote an intact and  
1784 functioning sagebrush landscape
- 1785 **33.** Systematic and strategic detection surveys should be developed and conducted in a  
1786 manner maximizing the likelihood of finding new patches before they expand. Once  
1787 patches are located, seed production should be stopped and the weeds should be  
1788 eradicated. The most effective tools for eradication of many weeds are herbicides and  
1789 possibly bio-controls.
- 1790 **34.** When using herbicides, all best management practices and only approved herbicides  
1791 listed in **Appendix E** will be used on enrolled lands for coverage under the  
1792 10(a)(1)(A) permit associated with this agreement.
- 1793 **35.** Containment programs for large infestations should be maintained. Border spraying  
1794 infestations, planting aggressive (even appropriate non-native species) plants as a  
1795 barrier, establishing seed feeding biological control agents and targeted grazing to  
1796 minimize seed production are all methods that could help contain large infestations.
- 1797 **36.** Areas with an adequate understory (> 20% composition) of desired vegetation should  
1798 be identified and prioritized as high for control since they have a higher likelihood of  
1799 successful rehabilitation than areas where desired species are completely displaced.
- 1800 **37.** Include in the SSP rehabilitation for areas with inadequate understory (< 20%  
1801 composition) of desired vegetation. The species of choice should include perennial  
1802 species that are competitive with invasive weeds. The goal should be to maximize niche  
1803 occupation with desired species.
- 1804 **38.** Report any new annual grass (e.g., cheatgrass, medusahead) infestations and take  
1805 immediate action to eradicate when practical and economically feasible. Site plan  
1806 should describe whether there is a commitment to reporting incidental sightings, or  
1807 whether there will be specifically planned surveys.
- 1808 **39.** Non-native perennial species such as crested wheatgrass may be seeded to stabilize and  
1809 prevent further invasion of cheatgrass and medusahead. These species should be used  
1810 with the intent to stabilize the plant community and allow for long-term recovery of  
1811 sagebrush and other native species.
- 1812 **40.** Aggressively treat noxious weeds and other invasive plants where they threaten quality  
1813 of sage-grouse habitat and apply best management practices to prevent infestations  
1814 from occurring.
- 1815 **41.** Use certified weed-free seed mixes and mulches.
- 1816 **42.** Manage livestock use on newly seeded/planted rangeland, allow adequate rest,  
1817 generally a minimum of two growing seasons. Set quantifiable objectives for post-  
1818 treatment vegetation recovery; return livestock grazing once objectives have been met.

1819 **Threat: Vegetation Treatments** - Vegetation treatments (e.g., chemical, mechanical) can  
1820 result in a reduction of sage-grouse habitat quality and quantity.

1821 **Conservation Measures:**

- 1822 43. Use brush beating in mosaic patterns as a tool to increase production of understory  
1823 species and to increase diversity to benefit sage-grouse habitat. Current  
1824 recommendations suggest brush beating (or other appropriate treatment) in strips (or a  
1825 mosaic pattern) 12 to 50ft wide (with untreated interspaces 3 times the width of the  
1826 treated strips) in areas with relatively high shrub cover (>25%) without an understory of  
1827 annual grasses to improve herbaceous understory for brood rearing habitats, where such  
1828 habitats may be limiting. Also, take into account aged sagebrush stands with minimal  
1829 recruitment and high shrub decadence. Such treatments should not be conducted in  
1830 known winter habitat (Dahlgren et al. 2006).
- 1831 44. Evaluate the role of existing seedings that are currently composed of primarily  
1832 introduced perennial grasses in and adjacent to priority sage-grouse habitats to  
1833 determine if they should be restored to sagebrush or habitat of higher quality for sage-  
1834 grouse. Active restoration success has been extremely limited using current technology,  
1835 where it is economically and logistically feasible, consider transplanting sagebrush or  
1836 using sagebrush plugs, if not economically and/or logistically feasible, allow sagebrush  
1837 recruitment into perennial herbaceous dominated communities (i.e., don't mow  
1838 sagebrush that is reestablishing in crested seedings).
- 1839 45. Any vegetation treatments conducted in plant communities dominated by exotic annual  
1840 species will be accompanied by rehabilitation (and if necessary, reseeded) to achieve  
1841 reestablishment of perennial vegetation and allow for long-term recovery of sagebrush  
1842 and other native species.
- 1843 46. To minimize disturbance to sage-grouse populations, do not conduct broadcast  
1844 applications of herbicides during nesting and early-brood rearing periods when sage-  
1845 grouse are present (March 1 – June 30, at a minimum), unless this timeframe or target  
1846 plant development stage is optimal for herbicide effectiveness.
- 1847 47. The use of herbicides (primarily tebuthiuron) at low (0.1–0.3 kg ai/ha) application rates  
1848 may effectively thin sagebrush cover while increasing herbaceous plant production  
1849 (Olson and Whitson 2002). These treatments should be applied in strips or mosaic  
1850 patterns. Site conditions must be critically evaluated prior to treatment (including fire  
1851 rehabilitation, new seedings, and seeding renovations) to increase likelihood of the  
1852 desired vegetation response.
- 1853 48. Agency specialists will determine how sagebrush treatments are part of a larger  
1854 landscape plan. If sagebrush treatment is warranted after a plan is developed with  
1855 agency specialists, utilize a mosaic pattern of treatment (as described in CM 43) rather  
1856 than a large uniform block.

1857

1858 **Threat: Drought** - When rangeland plants are deprived of precipitation, it affects the plant's  
1859 growth cycle, volume of growth, and fruition. When drought conditions exist, annual monitoring  
1860 will be used to determine site-specific recommendations. Drought is site specific and is typically  
1861 considered to occur when two growing seasons of precipitation are below the long-term average,  
1862 affecting plant life cycles as described above. Prolonged drought is when the conditions  
1863 described above persist for three or more growing seasons. Prolonged drought can harm plants  
1864 important to sage-grouse reducing sage-grouse habitat quality and quantity (see **Section 14**).

1865 **Changed Circumstances** - drought subsection - for more information on determination of  
1866 drought conditions).

1867 **Conservation Measures:**

1868 **49.** Work with agency specialists to incorporate a drought management strategy for grazing  
1869 which considers the needs of sage-grouse.

1870 **50.** Adjust livestock use (season of use, timing, intensity, and/or duration) to reduce the  
1871 impact on perennial herbaceous cover, plant diversity, and plant vigor to enable  
1872 enrolled lands to meet the seasonal habitat needs for sage-grouse identified for the site.

1873

1874 **Threat: Mechanical degradation of riparian area** - Those actions utilizing mechanical  
1875 equipment that results in decreased water table stability and function.

1876 **Conservation Measure:**

1877 **51.** Consider stream system hydrology prior to development of any facility, feature, or  
1878 infrastructure such as roads, dams, culverts, water crossings, bridges, and ditches.

1879

1880 **Threat: Catastrophic Flooding** - Excessive runoff resulting from catastrophic hydrological  
1881 events (e.g. rain on snow event) is associated with mass-wasting of hill slopes, damage to river  
1882 banks, and downstream flooding. These events have the capability to drastically change stream  
1883 hydrology and vegetative composition of riparian corridors.

1884 **Conservation Measure:**

1885 **52.** Manage livestock use (season of use, timing, intensity, and/or duration) in a manner  
1886 that promotes herbaceous and deep-rooted riparian vegetation that will stabilize stream  
1887 bank morphology and aid in the recovery following a catastrophic flood event.

1888

1889 ***B. Species-Specific Threats***

1890 **Threat: Recreation** - Repeated disturbance and harassment of sage-grouse could reduce  
1891 mating and reproductive productivity.

1892 **Conservation Objective:** Reduce the amount of sage-grouse disturbance and harassment, as  
1893 well as direct mortality.

1894 **Conservation Measure:**

1895 **53.** If enrolled lands have high visibility leks and/or known winter concentration areas,  
1896 protect existing habitat by restricting seasonal access for recreational use.

1897

1898 **Threat: Predation** - Some rangeland management activities can increase opportunities for  
1899 predation of sage-grouse and sage-grouse nests. Predation may be underestimated as a limiting  
1900 factor to sage-grouse population success in much of its occupied habitat. (Coates and Delehanty  
1901 2010; Coates et al. 2008; Dinkins et al. 2012; Kolada et al. 2009; Kolada et al 2009b; Lockyear  
1902 et al. 2013; Moynahan et al. 2007; Willis et al. 1993). In particular, the impacts of predation on  
1903 sage-grouse can increase where habitat quality has been compromised by anthropogenic  
1904 activities (Coates 2007; Bui 2009; Hagen 2012; Lockyear et al. 2013).

1905 **Conservation Objective:** Minimize the effects of predation on isolated, translocated, or  
1906 declining populations where predation has been identified as the limiting factor. Reduce direct  
1907 mortality to individuals and broods.

1908 **Conservation Measures:**

1909 **54.** Minimize attractants for corvids, raptors, and coyotes (i.e., dump sites, bone piles, etc.).

1910

1911 55. Utilize predator management programs when documented as a limiting factor on sage-  
1912 grouse populations. If poor habitat conditions are causing a predator problem, habitat  
1913 conditions should be addressed first if possible, or jointly or shortly after predator  
1914 control. Predator management includes lethal and non-lethal methods (see ODFW  
1915 Strategy - Hagen 2011).  
1916

1917 **Threat: West Nile virus (WNV)** - Sage-grouse immune systems lack resistance to WNV.  
1918 Surface water developments may increase habitat for mosquitoes, increasing the potential for  
1919 WNV exposure.  
1920

1921 **Conservation Objective:** Reduce potential for direct mortality and/or disease transmission.

1922 **Conservation Measures:**

1923 56. Minimize unnecessary standing water that could be used as mosquito breeding grounds  
1924 within sage-grouse habitat. Where new pond construction or water developments are  
1925 proposed for rangeland management or habitat enhancement purposes, use innovative  
1926 designs, when possible, to minimize the amount of mosquito habitat that could be  
1927 created. Work with agency biologists on optimal locations for new water developments.  
1928

1929 **Threat: Wild Horses and Burros** - Concentrated or overabundant wild horse and/or burro  
1930 populations can reduce habitat quality and quantity.

1931 **Conservation Objective:** Reduce impacts to sage-grouse habitat.

1932 **Conservation Measures:**

1933 57. Document and report habitat damage on enrolled lands from wild horses and/or burros.  
1934 58. On enrolled lands where base inventory, annual, or long-term monitoring indicate wild  
1935 horses may affect sage-grouse habitat, ensure all findings (as requested by the  
1936 landowner) are reported to BLM. When habitat monitoring indicates negative impacts  
1937 from wild horses to enrolled private lands, SWCD, FWS, and cooperators will provide  
1938 written recommendations for the landowner to submit to BLM recommending  
1939 gathering of wild horses and/or burros.  
1940 59. To maintain and/or improve sage-grouse habitat on enrolled lands with wild horses,  
1941 SWCD, FWS, and CCAA cooperators will submit recommendations in writing to BLM  
1942 to manage wild horse and/or burro numbers for long-term management at or below the  
1943 appropriate management level.  
1944 60. When habitat monitoring indicates damage from wild horses and/or burros on enrolled  
1945 lands, upon the landowner's request SWCD, FWS, and CCAA cooperators will submit  
1946 written recommendations to the BLM to relocate wild horses from affected private  
1947 land.  
1948

1949 **Threat: Insecticide** - Grasshoppers and Mormon crickets periodically have infestations which  
1950 cause significant long-term damage to sagebrush. The use of insecticides is not known to pose  
1951 range-wide threats to sage-grouse. However, insecticides have been documented as causing  
1952 mortality to sage-grouse. Some insecticides could have detrimental effects to individual sage-  
1953 grouse through direct contact, either by consumption of insects exposed to certain insecticides or  
1954 by reduction of insect populations during times when insects are a crucial part of the birds' diets  
1955 USFWS 2010.  
1956

1957 **Conservation Objective:** Maintain important sage-grouse forage base and avoid or minimize  
1958 direct mortality to sage-grouse.

1959 **Conservation Measures:**

1960 **61.** If possible, contract with Animal and Plant Health Inspection Service (APHIS) and/or  
1961 Oregon Department of Agriculture (ODA) for all insecticide treatments.

1962 **62.** Consult with SWCD, ODA, and APHIS. Avoid carbaryl/malathion; use diflubenzuron  
1963 (Dimilin) if at all possible.

1964 **63.** Work with agency specialists to plan and design control efforts to avoid harming sage-  
1965 grouse and non-target species.

1966 **64.** Avoid spraying treatment areas in May and June (or as appropriate to local  
1967 circumstances) to provide insect availability for early development of sage-grouse  
1968 chicks.

1969 **65.** Use approved chemicals with the lowest toxicity to sage-grouse that still provide  
1970 effective control.

1971 **66.** When feasible and as outlined by APHIS or ODA, use Reduced Area/Agent Treatments  
1972 (RAAT) to control grasshoppers, which focuses control efforts along strips to avoid  
1973 spraying entire fields.

1974

1975 **APPENDIX B – Site Specific Plan/Certificate of Inclusion**

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1986

**SITE SPECIFIC PLAN/CERTIFICATE OF INCLUSION**

Under the  
Candidate Conservation Agreement with Assurances  
For the Greater Sage-grouse in Malheur<sup>10</sup> County, Oregon  
Between  
[insert landowner name– a tract # will be assigned for file retention]  
and  
Malheur County Soil and Water Conservation District  
[insert date]

1987 ***A. Legal Conveyance of Assurances***

1988 This certifies that the enrolled property described below, and owned by the landowner named  
1989 above, is included within the scope of the Enhancement of Survival Permit (Permit) No. [insert  
1990 #] issued on [insert date] to the Malheur County Soil and Water Conservation District (SWCD)  
1991 under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973 as amended, 16  
1992 U.S.C. 1539(a)(1)(B). Such Permit authorizes incidental take of the Greater sage-grouse (sage-  
1993 grouse) as part of a Candidate Conservation Agreement with Assurances (CCAA). This  
1994 incidental take is allowed due to conservation measures incorporated on the owner's property as  
1995 described in the Site Specific Plan (SSP) contained herein. The implementation of this SSP will  
1996 benefit the sage-grouse and/or its habitat within its range in Malheur County, Oregon. Pursuant  
1997 to the Permit and this Certificate of Inclusion (CI) the holder of this CI is authorized to  
1998 incidentally take sage-grouse as a result of engaging in otherwise lawful covered activities on the  
1999 property, subject to the terms and conditions of the Permit and the CCAA. Permit authorization  
2000 is contingent to carrying out the Conservation Measures described in this SSP, the terms and  
2001 conditions of the Permit and the CCAA. By signing this CI, the landowner agrees to carry out all  
2002 of the Conservation Measures described in this SSP.

2003  
2004 During the life of this CI, changes in the understanding of sage-grouse management and  
2005 sagebrush habitat community management are anticipated. Additionally, events that lead to  
2006 changes in habitats or uses may occur. These “changed circumstances” are changes affecting  
2007 sage-grouse or the geographic area covered by this CCAA that can reasonably be anticipated and  
2008 can be planned for. This CCAA has identified wildfire, drought, West Nile virus, catastrophic  
2009 flooding, and habitat fragmentation from development as potential changed circumstances that  
2010 are expected to occur over the 30-year life of the permit.

2011  
2012 If it is determined by the landowner, SWCD, or FWS that a changed circumstance(s) exists, the  
2013 landowner will implement the appropriate CCCM or a mutually agreed upon approach to address  
2014 the additional threat or threats created by the changed circumstance(s). Conservation measures  
2015 (referred to as changed circumstance conservation measures or CCCMs) will be adopted to  
2016 maintain the benefit to sage-grouse and to meet the CCAA standard on the enrolled property. All  
2017 modifications, changes or additions to the SSP will be mutually agreed upon by the landowner,

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<sup>10</sup> See **Section 8. Covered Area** in programmatic CCAA for inclusion of adjacent lands outside county boundaries

2018 SWCD and FWS. If a changed circumstance(s) occurs the SWCD will notify the FWS of the  
2019 enrolled lands affected, the impact of the changed circumstance(s), and the CCCM(S) that will  
2020 be implemented to address the changed circumstance(s).

2021  
2022 A list of CCCMs is located in **Section 14. Changed Circumstances** of the programmatic  
2023 CCAA. This list provides possible conservation measures to address threats created by a changed  
2024 circumstance(s). Conservation Measures not identified on this list may be developed with  
2025 landowner agreement and with approval of FWS.

2026  
2027 The only situation where modification of conservation measures can be *required by the FWS* is  
2028 described in **Section 16. Unforeseen Circumstances** of the programmatic CCAA. To  
2029 respond to unforeseen circumstances, the FWS may require modified or additional conservation  
2030 measures by the landowner, but only if such measures maintain the original terms of the  
2031 CCAA/SSP to the maximum extent possible. The FWS will consider whether failure to adopt  
2032 additional conservation measures would appreciably reduce the likelihood of survival and  
2033 recovery of sage-grouse in the wild. Additional conservation measures will not involve the  
2034 commitment of additional land, water, or landowner funds, or additional restrictions on the  
2035 use of land, water, or other natural resources available for development or use under the  
2036 original terms of the CCAA without the consent of the landowner, provided the SSP/CI is  
2037 being properly implemented.

2038  
2039 ***B. Parties***

2040 This Site Specific Plan (SSP) and Certificate of Inclusion (CI) for sage-grouse conservation,  
2041 effective and binding on the date of the last signature below is between the Malheur County Soil  
2042 and Water Conservation District and Private Landowner.

2043  
2044 ***C. Responsibilities***

2045 ***C.1 Landowner Responsibilities***

- 2046 • Assist in the development of mutually agreeable SSPs in cooperation with the SWCD and
- 2047 FWS and cosign the SSP/CI document upon receiving a Letter of Concurrence from FWS
- 2048 • Implement all agreed upon CMs in their SSP
- 2049 • The property owner agrees to allow SWCD and FWS employees or its agents, with
- 2050 reasonable prior notice (at least 48 hours) to enter the enrolled properties to complete
- 2051 agreed upon activities necessary to implement the SSP
- 2052 • Continue current management practices that conserve sage-grouse and its habitats as
- 2053 identified in the enrollment process
- 2054 • Avoid impacts to populations and individual sage-grouse present on their enrolled lands
- 2055 consistent with this SSP
- 2056 • Record dates, locations, and numbers of sage-grouse observed on their enrolled lands to
- 2057 be included in the annual report
- 2058 • Record new observations of noxious weeds that they incidentally find
- 2059 • Report observed mortalities of sage-grouse to the SWCD within 48 hours
- 2060 • Cooperate and assist with annual and long-term monitoring activities and other reporting
- 2061 requirements identified in the SSP

2062 *C.2 SWCD Responsibilities*

- 2063 • Conduct public outreach and education to encourage enrollment of landowners in the
- 2064 CCAA through Site Specific Plans (SSP)/Certificates of Inclusion (CIs)
- 2065 • Enroll landowners according to the steps outlined in **Section 3: Application and**
- 2066 **Enrollment Process**
- 2067 • Use the mutually agreed upon tracking system to protect landowner privacy
- 2068 • Prepare and review SSPs/CIs for accuracy and cosign the SSP/CI document upon
- 2069 receiving a Letter of Concurrence from FWS
- 2070 • Assist in the implementation of conservation measures, monitoring, or other measures if
- 2071 agreed upon during the development of the SSP by the landowner, SWCD, and FWS
- 2072 • Ensure terms and conditions included in the SSPs are being implemented as agreed upon
- 2073 • Collect and evaluate monitoring data to determine if CMs are providing the desired
- 2074 habitat benefit and provide a report of monitoring results to the landowner and copies of
- 2075 summary reports to FWS
- 2076 • Provide technical assistance to aid enrolled landowners in implementing the CMs
- 2077 • Work with enrolled landowners and other agencies (e.g., OSU Extension, NRCS) to
- 2078 facilitate appropriate rangeland monitoring and/or training
- 2079 • Provide support and assist in obtaining funding from other sources for the
- 2080 implementation of CMs
- 2081 • Monitor and report projects (e.g., implementation of CMs) in order to determine success
- 2082 and adaptations needed
- 2083 • Immediately report to FWS and ODFW any observed or reported mortalities of sage-
- 2084 grouse
- 2085 • Meet annually with FWS to present annual and trend monitoring information
- 2086 • Protect, to the maximum extent available under federal, state, and local laws, against the
- 2087 release or disclosure of all confidential personal and/or commercial information provided
- 2088 by enrolled landowners and collected, gathered, prepared, organized, summarized, stored,
- 2089 and distributed for the purposes of developing and implementing this CCAA
- 2090 • Provide notice to enrolled landowners when a request for public records concerning this
- 2091 CCAA is made, and allow the enrolled landowner to prepare a notification requesting that
- 2092 any confidential personal and/or commercial information be withheld

2093 *C.3 U.S. Fish and Wildlife Service Responsibilities*

- 2094 • Provide assistance in coordinating development and implementation of this CCAA
- 2095 • Review each SSP<sup>11</sup> and provide a Letter of Concurrence within 60 days if all issuance
- 2096 criteria are met for all SSPs completed under the EOS permit
- 2097 • Provide technical assistance to aid the landowners in implementing the CMs
- 2098 • Review monitoring data for consistency with CCAA objectives to determine if
- 2099 conservation measures are providing the desired benefit to sage-grouse
- 2100 • Serve as an advisor, providing expertise on the conservation of sage-grouse
- 2101 • Assist in the implementation of conservation measures, monitoring, or other measures if
- 2102 agreed upon during the development of the SSP by landowner, SWCD, and FWS

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<sup>11</sup> FWS will participate in the development of up to the first five SSPs that represent the diversity of habitat in Malheur County, including site visits, baseline inventory, analysis or other aspects of plan development.

- 2103 • Provide FWS funding, to the extent funding is available, consistent with **Section 23.**
- 2104 **Availability of Funds** of the programmatic CCAA, to support implementation of this
- 2105 CCAA and associated SSPs/CIs
- 2106 • Provide support and assist in obtaining funding from other sources for the
- 2107 implementation of CMs
- 2108 • Conduct outreach and public education efforts to promote the conservation of sage-
- 2109 grouse
- 2110 • Immediately report to ODFW any observed or reported mortalities of sage-grouse
- 2111 • Protect, to the maximum extent permissible under federal laws, against the disclosure of
- 2112 all confidential personal and/or commercial information provided by enrolled landowners
- 2113 and collected, gathered, prepared, organized, summarized, stored, and distributed for the
- 2114 purposes of developing and implementing this CCAA
- 2115 • Provide notice to SWCD when a Freedom of Information Act (FOIA) request for records
- 2116 concerning this CCAA is made, and allow the SWCD to prepare a notification requesting
- 2117 that any confidential personal and/or commercial information be withheld
- 2118

2119 ***D. Property Owner***

2120 [Insert name and if appropriate, include Leasee’s signature after review of lease agreement and

2121 specific power of attorney documentation). A tract # will be assigned for file retention.]

2122

2123 ***E. Legal Description of the Enrolled Property***

2124 [Insert legal description of the land that is to be included under a SSP/CI and map of enrolled

2125 lands. A tract # will be assigned for file retention.]

2126

2127 ***F. General Description of the Enrolled Property***

2128 [Include acreage of parcel(s), general location and surrounding ownership, distance from nearest

2129 town, elevations and land forms, native and converted habitat types, observed use by sage-

2130 grouse, lek locations and/or other important sage-grouse habitat. Include general habitat type

2131 map or include on topographic map with property boundaries. Also include overview photos of

2132 property.]

2133

2134 ***G. Covered Activities and Level of Take***

2135 Based on the FWS’ analysis in the Conference Opinion for the programmatic CCAA, incidental

2136 take is expected to occur from rangeland treatment, livestock management, recreation, farm

2137 operations, and development (see **Section 12. Covered Activities and Estimated Levels of**

2138 **Take, Section 14. Changed Circumstances, and Appendix A.** Conservation Measures of the

2139 programmatic CCAA, or as specifically identified herein). All other activities associated with the

2140 operations of [insert Private Landowner name or tract #] are either not anticipated to adversely

2141 affect sage-grouse on covered lands, or will not have adverse effects that rise to the level of

2142 incidental take as defined by the FWS.

2143

2144 The expected level of take of sage-grouse will be minimized and avoided through the

2145 implementation of CMs and the actual take will be identified to the extent possible through the

2146 monitoring methods associated with the SSP. Individual landowners with SSPs are not

2147 specifically allocated a certain amount of take. Any incidental take reported by [insert Private

2148 Landowner or tract #] will be considered in the cumulative amount of take permitted in the area  
2149 covered under the programmatic CCAA.

2150

### 2151 ***H. Historic Property Information***

2152 [Insert fire history, ownership, grazing history, drought, floods (5-10 years or additional if large  
2153 scale event)]

2154

### 2155 ***I. Current Property Uses and Management Practices***

2156 [Describe existing structures on the enrolled property (e.g. houses, barns, fences, power lines).

2157 Describe all routine and management activities to include current grazing, farming, haying, and

2158 ranching practices.]

2159

### 2160 ***J. Habitat Inventory, Assessment, and Monitoring***

#### 2161 ***J.1 Site Selection Protocol***

2162 **1. Background information\_-** Stratifying enrolled lands into inventory and monitoring  
2163 units will require gathering any of the following background information that exists for  
2164 each property/properties for which a site specific plan is being considered: aerial  
2165 photographs, satellite imagery, written and oral histories, disturbance history (e.g., burn  
2166 maps), management history, property maps, plant species lists, ecological sites and site  
2167 descriptions, and soil maps.

2168

2169 **2. Stratify by habitat suitability using existing data -** The enrolled property will first  
2170 be stratified into areas of existing suitable (i.e., low elevation ecological states A, B, and  
2171 D; high elevation ecological states A and B; lotic riparian ecological states characterized  
2172 by consistent access to floodplain) or potentially suitable sage-grouse habitat (i.e. low  
2173 elevation ecological state C; high elevation ecological states C, D, and E; lotic riparian  
2174 ecological states without consistent access to floodplain) and areas of persistently  
2175 unsuitable habitat (e.g., historically non-habitat or permanently converted habitat –  
2176 infrastructure, agriculture, residential, etc.) (see Figure 1).

2177

2178 **3. On-site documentation of upland ecological states -** The upland property will then  
2179 be stratified by management unit (typically by pasture). Each upland management unit  
2180 will then be stratified into the two primary ecological types (i.e., high elevation sagebrush  
2181 rangeland and low elevation sagebrush rangeland) using a combination of existing  
2182 knowledge and/or data, ecological site descriptions, GIS techniques, and field  
2183 reconnaissance. Ecological types within management units will then be stratified by the  
2184 ecological states described in their respective state and transition model. Preliminary  
2185 ecological state strata will be determined using GIS data. The resultant preliminary strata  
2186 will then be used to direct ground truthing and associated habitat inventory efforts;  
2187 ground truthing of preliminary ecological state strata will be accomplished following  
2188 procedures outlined in the Upland Ecological State Documentation Form (**Appendix D-**  
2189 **4**). The ocular assessment outline located in **Appendix D-4** will provide the basis for  
2190 selecting representative areas for each stratum, where quantitative data will be collected  
2191 and serve as permanent habitat monitoring sites for the management unit (long-term  
2192 (trend) monitoring).

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2238
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.

2239 *J.2 Annual Monitoring*

2240 Sagebrush rangelands are dynamic systems that constantly change in response to fire, wildlife,  
2241 climate, insect infestations, weed invasions, and natural vegetation succession; not just to inputs  
2242 from management. Annual monitoring focuses on identifying management inputs and factors  
2243 external to the management program that affect the responses of sagebrush rangeland over time.  
2244 These are the factors that influence the change documented with trend monitoring (described  
2245 above) and may include growing conditions for plants (e.g., precipitation, temperature trends,  
2246 drought, etc.), livestock and wildlife numbers, utilization patterns of livestock and wildlife,  
2247 insect and rodent infestations, recreational use, trespass livestock, and timing, duration, and  
2248 frequency of livestock grazing. Suggested information and a data form for conducting annual  
2249 monitoring are shown in **Appendix D-3**. In addition to the information in the “Annual Grazing  
2250 and Habitat Summary,” other potentially important annual records would include pasture-level  
2251 grazing utilization and distribution, actual use, sage-grouse observations, or any other factors that  
2252 could have affected the growing conditions for vegetation not identified on the form.

2253  
2254 The property owner agrees to allow SWCD and FWS employees or its agents, with reasonable  
2255 prior notice (at least 48 hours) to enter the enrolled properties to complete agreed upon activities  
2256 necessary to implement the SSP.

2257  
2258 The landowner will report incidental take of individual sage-grouse to the SWCD who will  
2259 provide the information to the FWS and ODFW.

2260  
2261 ***K. Threats Assessment, Conservation Objectives, Conservation Measures,***  
2262 ***Inventory and Monitoring***

2263 This section will identify threats to sage-grouse habitat. This will include a discussion of haying  
2264 and farming practices and measures to minimize any possible hazards. Identified future plans for  
2265 the enrolled property will also be documented in this section. Conservation Measures for the  
2266 enrolled property will be identified with quantifiable conservation objectives and monitoring  
2267 outlined to measure progress for each specific conservation measure.

2268  
2269 According to the FWS 2010 12-month Finding (75 FR 13910), the primary threat to sage-grouse  
2270 is habitat fragmentation. Therefore, in order for this CCAA to address the conservation needs of  
2271 the sage-grouse, this threat must be addressed by all enrolled landowners on the enrolled portion  
2272 of their property through the incorporation of CM 1 into this SSP: *Maintain contiguous habitat*  
2273 *by avoiding further fragmentation*. The objective of this required CM is for no net loss in 1)  
2274 habitat quantity (as measured in acres) and 2) habitat quality (as determined by the ecological  
2275 state). The baseline determination of habitat quality and quantity will be completed during the  
2276 baseline inventory and will serve as a reference point in meeting the objective for CM 1. Losses  
2277 in sage-grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice  
2278 versa (consistent with **Section 12. Covered Activities and Estimated Levels of Take -**  
2279 **development subsection**).

2280  
2281 [Insert schedule for completing long-term monitoring (trend)]  
2282 [Insert here all identified threats, conservation objectives, conservation measures, and monitoring  
2283 requirements as outlined similar to the example below]

2284

2285 *Example:*

2286 **Threat:** In the Upper Pasture (1500 acres) of this property juniper has encroached into high  
2287 elevation sagebrush rangeland. Juniper is in Phase II and III on 500 acres and is/has decreased  
2288 available sage-grouse nesting and brood rearing habitat. (Based on stratification of habitat  
2289 suitability from the Upland Ecological State Documentation Form).

2290

2291 **Conservation Objective:** Prevent transition to conifer dominated state by reducing or  
2292 eliminating conifers on 250 acres of Ecological State C mountain big sagebrush/Idaho fescue  
2293 range sites in the Upper Pasture over the next 10 years. (These 250 acres were selected based on  
2294 an initial baseline assessment of their location within PPH/Core habitat, potential for recovery  
2295 based on deep, north slope soils, and post management capabilities of the landowner).

2296

2297 **Conservation Objective:** Restore dominance of shrubs and perennial grasses and forbs through  
2298 removal of dominant conifer overstory on 250 acres of Ecological State E mountain big  
2299 sagebrush/Idaho fescue range sites in the Upper Pasture over the next 10 years. (Information  
2300 collected during the baseline inventory indicated restoration of these 250 acres was important for  
2301 providing connectivity between large areas of intact sagebrush habitat and for meeting the  
2302 nesting and brood-rearing life history needs of sage-grouse).

2303

2304 **Conservation Measures:** # 10, 13, 15, 17, 18 (Due to the location of the treatment areas in  
2305 proximity to potential invasive species, cutting, piling and pile burning with follow-up seeding  
2306 will be utilized as conservation actions to improve the landscape capability for supporting sage-  
2307 grouse).

2308

2309 **Monitoring:** Two representative, permanent monitoring locations will be established in each of  
2310 the proposed treatment areas and Modified Pace 180° data, supplemented with density  
2311 measurements and transect photos, will be collected prior to implementation of conservation  
2312 measures to establish the baseline for trend monitoring. Trend monitoring will be repeated three  
2313 and five years post treatment implementation. Subsequent trend monitoring will be conducted  
2314 every five years.

2315

### 2316 **Interpretation of Trend Indicators and Associated Triggers for Adaptive**

2317 **Management:** Key indicators of vegetation trend will include perennial bunchgrass basal cover  
2318 and density and sagebrush cover and density. An upward trend in these key indicators at  
2319 representative monitoring locations (e.g. 1. perennial grass basal cover and density has increased  
2320 and interspaces between perennial plants is either bareground or occupied by desirable annual  
2321 forbs and 2. sagebrush cover and density has increased) would suggest the applied conservation  
2322 measures were successful in transitioning the ecological status of vegetation from being conifer  
2323 dominated to being sagebrush/bunchgrass dominated. A static or downward trend in these key  
2324 indicators would suggest the need for intervention with follow-up measures (e.g. weed control  
2325 and/or revegetation treatments) to ensure progress is being made toward achieving conservation  
2326 objectives. Conifer cover will become a key indicator of trend during longer term monitoring. An  
2327 increase in conifer cover suggests a negative trend toward conifer dominance.

2328 **Threat:** Medusahead rye has invaded 20 acres of low elevation rangeland in Ecological State B  
2329 in the House Pasture. (This patch of medusahead rye was discovered during the first site visit and  
2330

2331 was found in a relatively intact Wyoming big sagebrush and bluebunch wheatgrass/Sandberg  
2332 bluegrass range site).

2333

2334 **Conservation Objective:** Restore dominance of deep-rooted perennial vegetation to 20 acres  
2335 of medusahead rye to protect the surrounding 500 acres of intact low elevation rangeland in  
2336 Ecological State B in the House Pasture.

2337

2338 **Conservation Measures:** #32, 37, 40 (Conservation Measure 40 will be implemented within  
2339 one year of signing the SSP).

2340

2341 **Monitoring:** One representative, permanent monitoring location will be established in the  
2342 proposed treatment areas and Pace 180 data, supplemented with density measurements and  
2343 transect photos, will be collected prior to implementation of conservation measures to establish  
2344 the baseline for trend monitoring. Trend monitoring will be repeated two and four years post  
2345 treatment implementation. Subsequent monitoring intervals will be determined at this time based  
2346 on the progress toward meeting the conservation objective. In addition to Malheur County  
2347 SWCD conducting trend monitoring associated with medusahead control and revegetation  
2348 treatments, the landowner has agreed to annually conduct planned searches for incipient  
2349 infestations of medusahead with emphasis on roadways and livestock and ATV trails as part of  
2350 an annual monitoring program.

2351

#### 2352 **Interpretation of Trend Indicators and Associated Triggers for Adaptive**

2353 **Management:** Key indicators of vegetation trend will include perennial bunchgrass basal cover  
2354 and density and niche occupation of interspace areas between perennial plants. An increase in the  
2355 basal cover and density of perennial bunchgrasses and niche occupation by bareground or  
2356 desirable annual forbs of interspaces areas between perennial plants (i.e., not exotic annual  
2357 grasses) would suggest perennial plants are fully occupying the site. An upward trend in these  
2358 indicators at the representative monitoring location would suggest the applied conservation  
2359 measures were successful in transitioning the ecological status of vegetation from being annual  
2360 grass dominated to being perennial bunchgrass dominated. A static or downward trend in these  
2361 key indicators would suggest the need for intervention with follow-up measures (e.g. weed  
2362 control and/or revegetation treatments) to ensure progress is being made toward achieving  
2363 conservation objectives.

2364 Conservation Measures will describe the actions that will be taken to maintain or improve habitat  
2365 on lands covered by the Certificate of Inclusion (CI) and are the actions agreed to within the Site  
2366 Specific Plan (SSP). On some properties existing management will provide for sage-grouse  
2367 habitat needs while other properties will require specific habitat improvements (conservation  
2368 measures to be taken to meet sage-grouse habitat needs).

2369 [Insert a list and a description of the specific habitat improvement techniques (conservation  
2370 measures) that will be implemented on the lands covered by this agreement]

2371 [Include a map of the areas where these activities are to be implemented]

2372 [Insert a schedule of expected dates of implementation of Conservation Measures, or as an  
2373 attachment to this SSP/CI]

2374 ***L. Funding***

2375 The SWCD and the enrolled landowners will be responsible for acquiring funds for conservation  
2376 implementation through use of grant money or through partnerships with State and Federal  
2377 agencies, county government, non-governmental organizations, or a combination of the above.  
2378 The FWS will assist through its Partners for Fish and Wildlife program, or other funding  
2379 opportunities when available. The FWS will also provide technical support to the SWCD and  
2380 landowners applying for funding to implement CMs. Failure to complete the funded activities  
2381 within an agreed upon timeframe may result in withdrawal of the assurances provided to the  
2382 landowner under the CCAA and this CI.

2383

2384 [Insert anticipated/potential funding sources for the activities described in this CI]

2385

2386 ***M. Duration of Site Specific Plan/Certificate of Inclusion***

2387 This SSP/CI and the coverage of "take" under the Permit are effective from the date of last  
2388 signature below until expiration of the programmatic CCAA, unless terminated by either party  
2389 prior to the expiration.

2390

2391 ***N. Modification of SSP/CI***

2392 Any enrolled landowner, FWS, or SWCD may propose modifications to a SSP/CI, as provided in  
2393 50 CFR 13.23. The party proposing the modification will provide a written statement to the other  
2394 participating parties describing the proposed modification(s), the reason for it and the expected  
2395 results. The landowner, SWCD, and FWS will use their best efforts to respond in writing to  
2396 proposed modifications within 60 days of receipt of a request. Proposed modifications to a  
2397 SSP/CI will only become effective upon the written concurrence of all participating parties.

2398

2399 If FWS determines that additional conservation measures not provided for in the CCAA are  
2400 necessary to respond to changed circumstances the FWS will not require any modifications or  
2401 additional CMs or CCCMs in the CCAA or the SSP/CI without the consent of the enrolled  
2402 landowner, provided the SSP is being properly implemented. Modifications will be done in  
2403 accordance with all applicable legal requirements, including but not limited to the ESA, the  
2404 National Environmental Policy Act (NEPA), and the FWS's permit regulations at 50 CFR 13 and  
2405 50 CFR 17.

2406

2407 For each proposed modification, the FWS must determine whether the proposed modification is  
2408 minor or major in nature. Minor modifications involve routine administrative revisions or  
2409 changes to the operation and management program associated with a SSP/ CI, and may or may  
2410 not alter the conditions of the permit. For example, a minor modification might include a change  
2411 in monitoring or reporting protocols based upon recommendations from new research. Upon the  
2412 written request of one of the participating parties, the FWS can approve minor modifications if it  
2413 does not conflict with the purposes of the programmatic CCAA or does not result in some  
2414 material change to the FWS's NEPA analyses (i.e., with respect to meeting the CCAA standard,  
2415 the amount of take authorized, the section 10 determination, or the NEPA decision). These minor  
2416 modifications do not require a formal process, but do require written documentation that all  
2417 participating parties approved the modification(s) prior to it becoming effective.

2418

2419 A major modification would either (1) result in a different level or type of take than was  
2420 analyzed in association with the SSP/ CI or (2) result in a change to the cumulative conservation  
2421 benefits to sage-grouse such that the CCAA standard might not be met. Major modification(s)  
2422 may be subject to the procedural requirements of Federal laws and regulations, such as NEPA,  
2423 and to require additional analysis by the FWS, public notification in the Federal Register, and a  
2424 formal CCAA modification process. For example, a major modification might include a proposal  
2425 to use an insecticide in sage-grouse habitat not specified in the SSP.  
2426

### 2427 ***O. Termination of SSP/CI***

2428 The landowner agrees to give 30 days' written notice to the SWCD of his or her intent to  
2429 terminate this SSP/CI. The landowner may terminate implementation of this SSPs voluntary  
2430 management actions prior to the SSP/CI expiration date, even if the expected benefits have not  
2431 been realized.  
2432

2433 If monitoring data indicates the landowner has failed to comply with or implement agreed CMs,  
2434 reporting, or other responsibilities specified and agreed upon in his/her SSP/CI, the SWCD and  
2435 or FWS may revoke the landowner's SSP/CI. This will not occur without an attempt by SWCD  
2436 and/or FWS to work with the landowner through an informal resolution process as outlined in  
2437 **Section 22. Dispute Resolution** of the programmatic CCAA, or through other agreed-upon  
2438 methods. However, if no resolution can be achieved, revocation of the SSP/CI will be effective  
2439 upon receipt of written notice of revocation from the SWCD and/or FWS. The landowner will no  
2440 longer be covered under the provisions of the SSP/CI and the CCAA and relinquishes any  
2441 assurances and take authority specified therein.  
2442

### 2443 ***P. Remedies***

2444 Each party shall have all remedies otherwise available to enforce the terms of the CCAA and this  
2445 SSP/CI, except that no party shall be liable in monetary damages for any breach of the CCAA  
2446 and this SSP/CI, any failure to perform an obligation under the CCAA and this SSP/CI, or any  
2447 other cause of action arising from the CCAA and this SSP/CI.  
2448

### 2449 ***Q. Transfer of Property***

2450 The landowner agrees to give 30 days' written notice to the SWCD of his or her intent to sell the  
2451 enrolled property so the SWCD and the FWS can offer the new owner the option of receiving  
2452 CCAA assurances by signing a new SSP/CI. (For further information see **Section 19.**  
2453 **Succession and Transfer** of the programmatic CCAA).  
2454

### 2455 ***R. Privacy Statement***

2456 The landowner provides and the SWCD receives all personal and confidential commercial  
2457 information, including, but not limited to: names, contact information, general and legal  
2458 description of the enrolled property, grazing practices, land use practices, commercial activities  
2459 on the land, recreational activities on the land, site-specific species sightings, and site-specific  
2460 species habitat condition, regardless of the form, under the belief and obligation that the  
2461 information is personal and/or commercial and is confidential in nature. The landowner and  
2462 SWCD acknowledge that the release or disclosure of information may result in an unwarranted  
2463 invasion of personal privacy and/or cause substantial harm to the commercial interest of the  
2464 landowner. Accordingly, SWCD will, to the maximum extent available under federal, state, and

2465 local law, protect against disclosure of the information by utilizing a case-by-case review and  
2466 determination.

2467

2468 ***S. Notice of Possible Disclosure***

2469 In the event that a request for information is made to SWCD that would result in the possible  
2470 disclosure of personal and/or commercial confidential information, the impacted landowner shall  
2471 receive notice of the request. Additionally, the landowner shall be provided with the opportunity  
2472 to state, orally or in writing, why a release of the requested information would constitute a  
2473 clearly unwarranted invasion of privacy and/or cause substantial harm to the his/her commercial  
2474 interest.

2475

2476 **CERTIFICATE OF INCLUSION**

2477  
2478 This document represents a binding contract between the Malheur County Soil and Water  
2479 Conservation District (MC SWCD) and [NAME OF COOPERATOR (tract # will be assigned  
2480 for file retention)]. In consideration of the commitment by [NAME OF COOPERATOR (tract #  
2481 will be assigned for file retention)] to comply with all applicable terms of the Candidate  
2482 Conservation Agreement with Assurances (CCAA) as defined in the accompanying Site Specific  
2483 Plan, MC SWCD hereby certifies that the property described as follows [DESCRIPTION (tract #  
2484 will be assigned for file retention)], is included within the scope of the Enhancement of Survival  
2485 permit issued by the U.S. Fish and Wildlife Service on [DATE] (Permit No.\_\_\_\_\_) to MC  
2486 SWCD under the authority of § 10(a)(1)(A) of the Endangered Species Act. 16 U.S.C. §  
2487 1539(a)(1)(A). The Permit allows certain activities by participating landowners to maintain,  
2488 restore, and enhance habitat for sage-grouse, while providing incidental take coverage for  
2489 associated habitat enhancement and routine ranching activities. The parties to this contract agree  
2490 that, in the event that [NAME OF COOPERATOR (tract # will be assigned for file retention)]  
2491 breaches the commitment to comply with the CCAA, MC SWCD may suspend or revoke this  
2492 certificate. In addition, the U.S. Fish and Wildlife Service may suspend or revoke this certificate  
2493 for cause in accordance with 50 C.F.R. §§ 13.27, 13.28 and 17.22(c)(7), or if [NAME OF  
2494 COOPERATOR (tract # will be assigned for file retention)] becomes disqualified under 50  
2495 C.F.R. § 13.21(c).

2496  
2497 \_\_\_\_\_  
2498 Private Landowner (A tract # will be assigned for file retention) \_\_\_\_\_ Date

2499  
2500  
2501 \_\_\_\_\_  
2502 Board Chair \_\_\_\_\_ Date  
2503 Malheur County Soil and Water Conservation District

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2521 **APPENDIX C – State and Transition Models**

2522

2523 The overall management goal is to facilitate maintenance of, or transition to, a desired ecological  
2524 state (state “A” or “B”) using an ecologically-based model (see state and transition diagrams for  
2525 low elevation, mid elevation, high elevation, and riparian habitat shown in Figures 2-5) that can  
2526 serve the habitat needs of sage-grouse. Once this state is achieved, additional conservation  
2527 measures may be used to further increase the quality/value of sage-grouse habitat (e.g., timing of  
2528 grazing in nesting habitat) or mitigate species-specific threats (e.g., raptor perches in the vicinity  
2529 of critical habitat). However, focusing on species-specific conservation measures in habitat that  
2530 is in or at risk of transition to a non-desired state (states “C”, “D”, or “E”) can divert resources  
2531 from addressing underlying ecological issues that ultimately define the current and future value  
2532 of such habitats to sage-grouse and other sagebrush obligate wildlife species. For this reason, an  
2533 ecologically-based model will be used to determine inventory, monitoring, and conservation  
2534 needs during the site specific planning process.

2535

2536 The states in the models will be determined by a combination of information including: 1) NRCS  
2537 ecological site descriptions; 2) data collected during the baseline inventory; 3) best professional  
2538 judgment; 4) local climatic variation; 5) site history and other information collected as outlined  
2539 in **Section 6. Inventory and Monitoring Protocols**, of this CCAA. Recovery of shrub-steppe  
2540 habitat is slow (varies greatly from 20 -100 years depending on pre-disturbance state) and the  
2541 CCAA is a 30-year permit, therefore the threshold for meeting the objectives in states A or B is  
2542 that the vegetation on the site is trending towards the desired plant community. The restoration  
2543 potential of the other states (C, D and E) depends on the degree of degradation; objectives for  
2544 states C, D, and E will need to be based upon degree of degradation and probability of success of  
2545 treatments.

2546

2547 ***Ecological States and their relationship to sage-grouse habitat***

2548 It is important to note that much of the knowledge base concerning vegetation composition and  
2549 structure in habitats used by sage-grouse has been based on small (patch) scale measurements  
2550 that reflect the immediate vicinity of the location of radio-marked or flushed birds (e.g., Gregg et  
2551 al. 1994; Sveum et al. 1998; for detailed information on sage-grouse habitat at the patch scale see  
2552 Connelly et al. 2000 and Hagen et al. 2011). This is significant because large-scale monitoring  
2553 efforts (including procedures described in this document) are most feasible at the plant  
2554 community scale or larger and current knowledge of successional change in the sagebrush steppe  
2555 is firmly based on relationships described at the plant community scale. This discrepancy in scale  
2556 can lead to problems when plant composition at the plant community scale is expected to  
2557 conform to idealized vegetation attributes based on smaller scale measurements. For example,  
2558 working at the community scale, Davies et al. (2006) examined over 100 “late-seral” Wyoming  
2559 big sagebrush communities and reported that: “No sites met the nesting or optimum brood-  
2560 rearing habitat vegetation cover values suggested by Bureau of Land Management (2000). Mesic  
2561 and arid breeding vegetation cover values suggested by Connelly et al. (2000) were met by 0%  
2562 and 18% of the sites, respectively”. Additionally, in a meta-analysis of sage-grouse nesting and  
2563 brood rearing habitats Hagen et al. (2007) determined that sagebrush cover, grass cover and grass  
2564 height was greater at nest sites than at random points and vegetation at brood areas contained less  
2565 sagebrush, taller grasses and greater grass and forb cover than random sites. Understanding the  
2566 optimum mix and spatial arrangement of these communities and their effects on demographic

2567 rates in a landscape could substantially enhance sage-grouse management. Furthermore, in the  
2568 2010 Warranted but Precluded Finding USFWS identified threats contributing to sage-grouse  
2569 habitat fragmentation and loss that occur at the plant community and larger scales. The Finding  
2570 went on to suggest that local regulatory mechanisms be developed/strengthened to address  
2571 known threats to sage-grouse. Such mechanisms will logically occur at scales consistent with the  
2572 identified problems. It thus follows that assessment of habitat and monitoring of the effectiveness  
2573 of implemented conservation measures will be conducted at a scale consistent with the identified  
2574 threats and the conservation measures designed to address those threats. Therefore, the focus in  
2575 this document is at the scale of the plant community and the monitoring procedures reflect that  
2576 scale-specific focus. Thus, the intent is to use best available knowledge to promote a sustainable  
2577 composition of plants (termed “states” in these models) that provides elements necessary for  
2578 sage-grouse habitat at the plant community scale.

2580 The use of a color-coding system to label habitats as year-around (green), seasonal (yellow), or  
2581 non-habitat (red) is based on the presumption of the presence or absence of specific vegetation  
2582 components that comprise different elements of sage-grouse habitat. Those presumptions are  
2583 based on characterizations of sage-grouse habitat elements as described by Crawford et al.  
2584 (2004). Focusing on the low, middle, and high elevation models, different habitat needs with  
2585 different vegetation states can be associated, and the sum of those associations can be used to  
2586 broadly characterize habitat as year-around, seasonal, or non-habitat. However, just because a  
2587 state may be suitable for, for example, nesting habitat, that doesn’t mean that it is currently being  
2588 used or will be used in the future for nesting purposes. That said, in the *low, middle, and high*  
2589 *elevation models, states A and B* have the potential to support *nesting activities*, although the  
2590 suitability of state B for this purpose could be limited by sagebrush abundance in some cases.  
2591 *Brood-rearing habitat* could occur in either *state A or B, although riparian areas in other*  
2592 *states* have potential to provide late season brood-rearing habitat. For the *low elevation model,*  
2593 *winter habitat* will be associated primarily with states *A and B. For the mid elevation model,*  
2594 *winter habitat* will be associated primarily with states *A and B, and in the high elevation model*  
2595 *winter habitat* would be mainly in *state A.*

### 2596 *Breeding Habitat*

- 2597 • During the spring lekking period, sage-grouse use areas of low-statured vegetation (both  
2598 shrubs and herbaceous) for purposes of display and breeding. There is strong fidelity to  
2599 particular lekking sites and this habitat type is rarely limited on a landscape basis.  
2600 Nesting habitat can be thought of as being comprised of two distinct time elements.
- 2601 • During the pre-laying period, which is the month prior to actual nesting, female sage-  
2602 grouse continue to eat sagebrush but focus a growing portion of their diet on protein-rich  
2603 forbs, which are thought to increase the nutritional status of the birds prior to the  
2604 upcoming nesting period.
- 2605 • Sage-grouse typically nest under mature sagebrush, or in some cases other shrubs, and  
2606 during the nesting period rely on perennial bunchgrasses in the immediate vicinity of the  
2607 nest to provide screening cover from nest predators. Potential cover and height values for  
2608 perennial grasses will vary strongly based on both ecological site and yearly conditions.  
2609 Nests are often located near (e.g., < 3 km) lekking sites, but hens may move large  
2610 distances from leks for nesting purposes. Mature sagebrush with umbrella-shaped  
2611

2612 canopies may provide increased screening cover of nests and this canopy shape also helps  
2613 to decrease grazing of under-shrub screening cover by cattle (France et al. 2008).

### 2614 *Brood Rearing Habitat:*

2615 • As with nesting, the brood-rearing period can be broken into distinct time phases. During  
2616 **early brood-rearing**, the diet of chicks is focused on forbs and insects (chicks are  
2617 actually obligate insectivores for roughly the first two weeks of life). From a vegetation  
2618 standpoint, these habitats are often represented by areas of reduced sagebrush canopy  
2619 cover, with increased herbaceous expression. As the growing season progresses, broods  
2620 move into **late brood rearing habitat**, which is determined largely by the presence of  
2621 succulent vegetation; primarily forbs, although some sagebrush is consumed. This  
2622 succulent vegetation is often associated with riparian areas or seeps, however, broods  
2623 may also migrate up in elevation, effectively staying ahead of the advancing desiccation.

### 2624 *Winter Habitat*

2625 • The critical vegetation component during the **winter period** is sagebrush, given that  
2626 winter diets are comprised almost entirely of sagebrush. Shrub height may or may not be  
2627 important, depending on context. On sites with deep snow, a certain height is obviously  
2628 necessary to ensure food availability and mature big sagebrush (*Artemisia tridentata*  
2629 Nutt. ssp.) is of high importance, however, sage-grouse have also been reported to use  
2630 smaller-statured low sagebrush (*Artemisia arbuscula* Nutt.) on wind-swept ridges with  
2631 minimal snow cover.

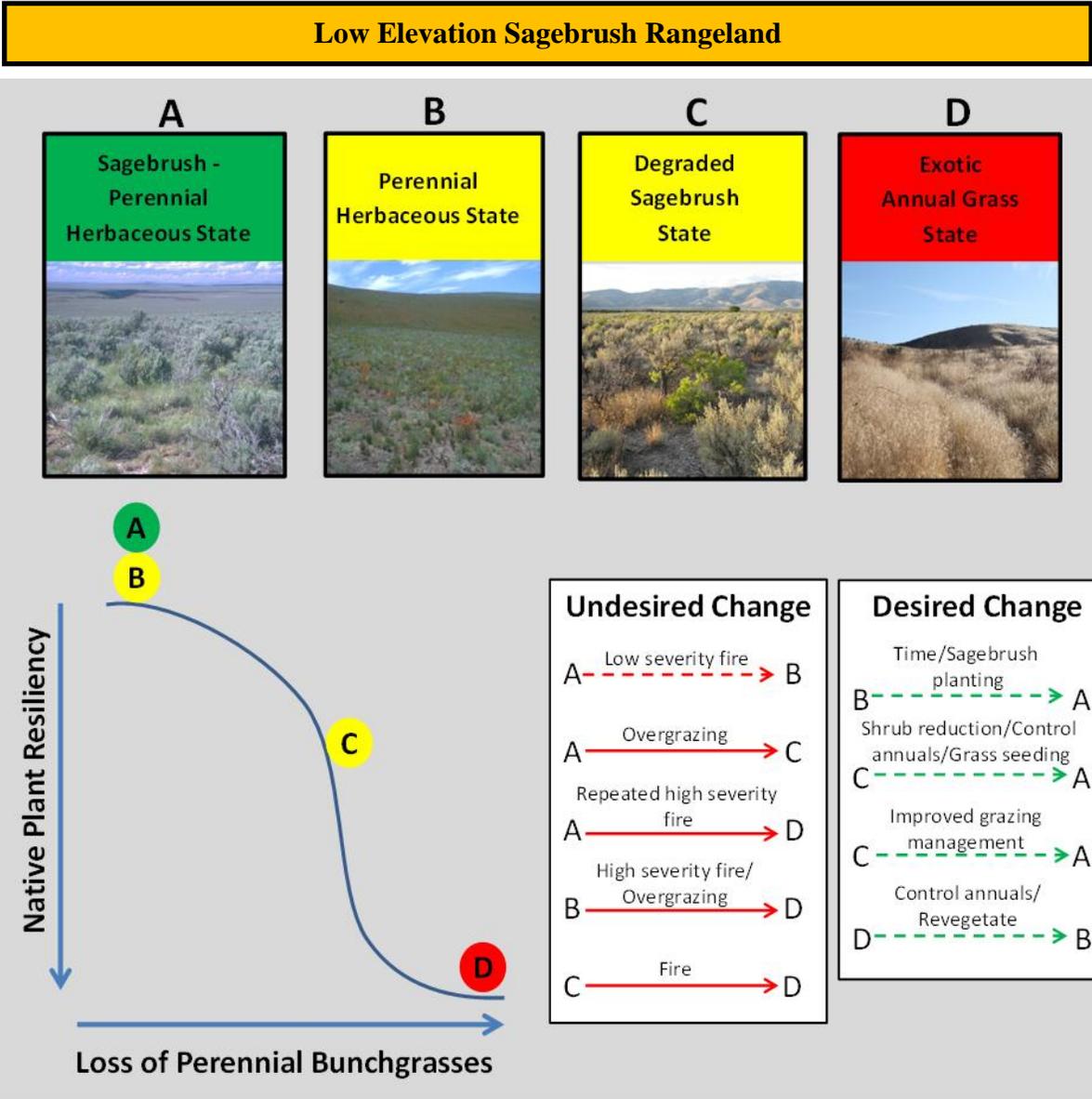
### 2633 *Interpretation*

2634 While state and transition models are typically viewed as being site specific, it is critical to  
2635 recognize the consequences of spatial connectivity between vegetation states across the larger  
2636 landscape. For example, a low elevation vegetation community in state “A” provides for year-  
2637 around sage-grouse habitat. However, if a given community in this state is set within a larger  
2638 landscape comprised mainly of low elevation state “C” (i.e., annual grass-dominated), then fire  
2639 risk to state “A” will increase dramatically, suggesting that conservation measures to reduce  
2640 annual grass abundance in the larger landscape will have significant implications to the security  
2641 of state A. This example illustrates that conservation measures may have value to sustaining  
2642 existing sage-grouse habitat, even if these measures are applied in locations that are currently  
2643 non-habitat, and reinforces the importance of considering spatial connectivity between  
2644 vegetation communities across the landscape when defining threats and associated conservation  
2645 measures. This same concept can also be applied over time. For example, during wet years fuel  
2646 accumulations across the landscape may be high enough to create high fire danger for most  
2647 vegetation communities, regardless of what “state” they are in. In such cases, conservation  
2648 measures to reduce fuel loading could be applied generally, regardless of vegetation state, to  
2649 reduce risk of wildfire. This example illustrates that conservation needs vary over time and that  
2650 application of conservation measures must take place within the framework of adaptive  
2651 management.

2652

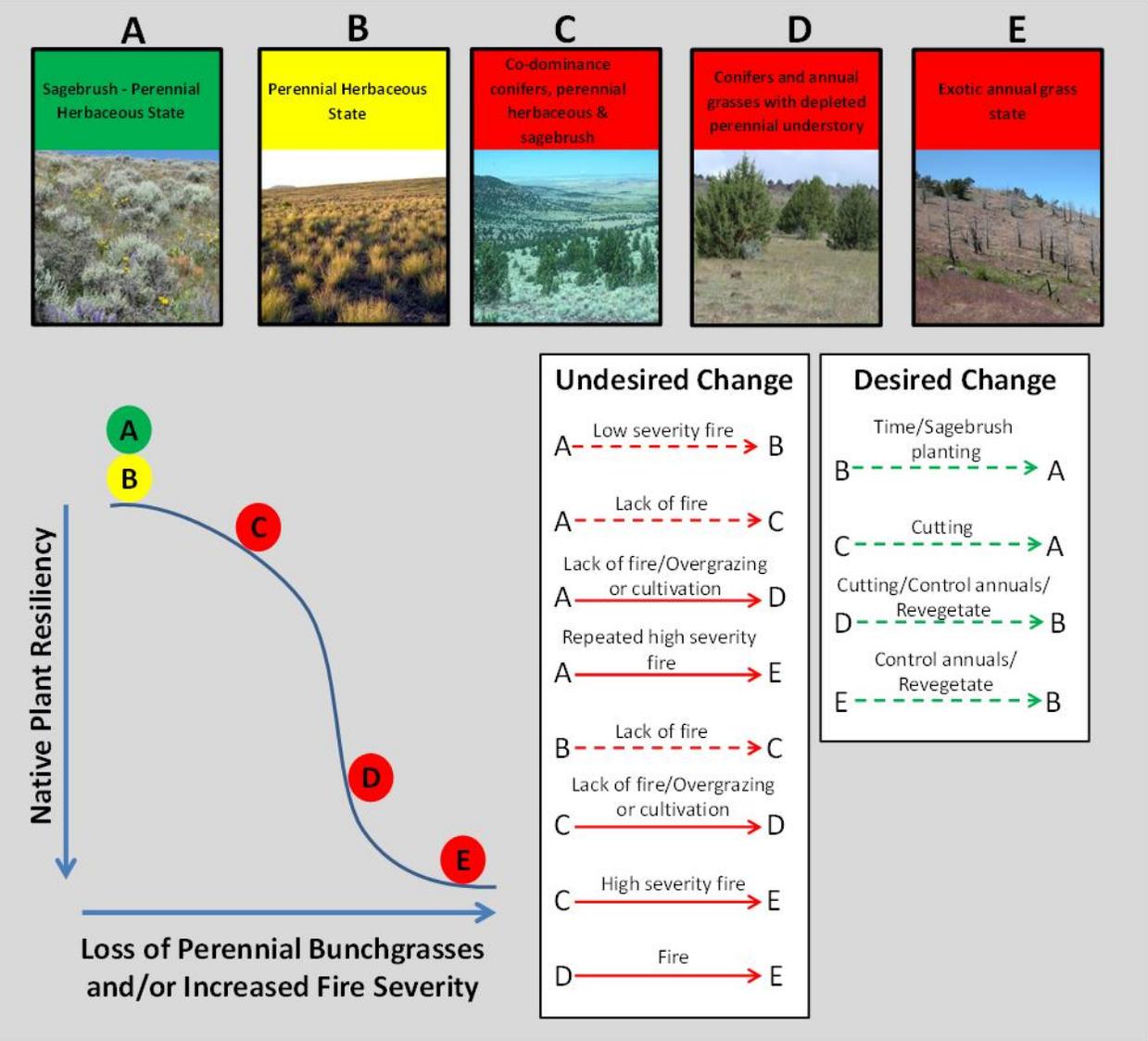
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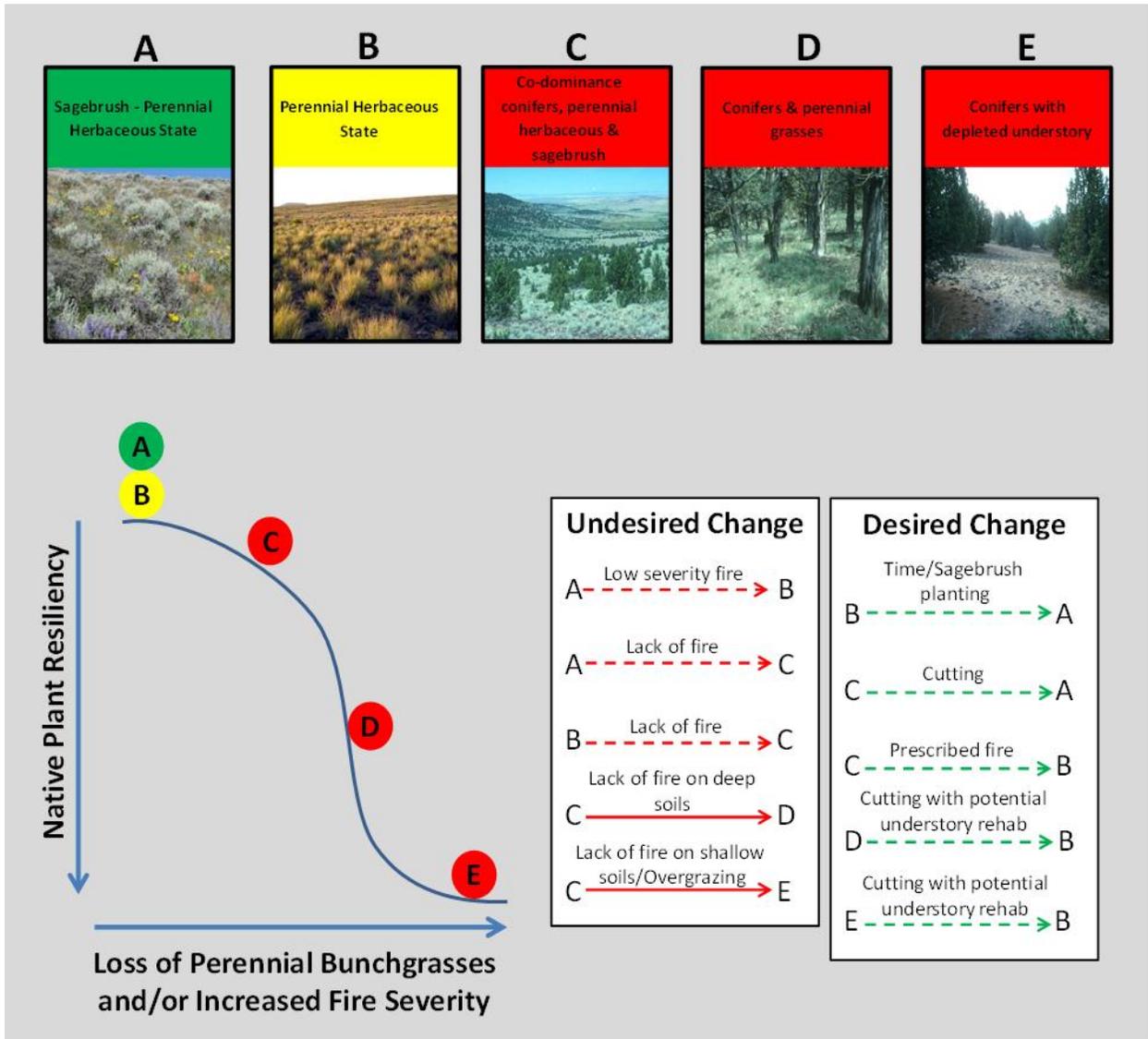
**Figure 7. Low elevation sagebrush rangeland.** Conceptual ecological framework for managing sage-grouse habitat using a generalized state-and-transition model for **low elevation sagebrush plant communities in Oregon with warm and dry or cool and dry soil temperature/moisture regimes** (Miller et al. 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.

# Mid Elevation Sagebrush Rangeland



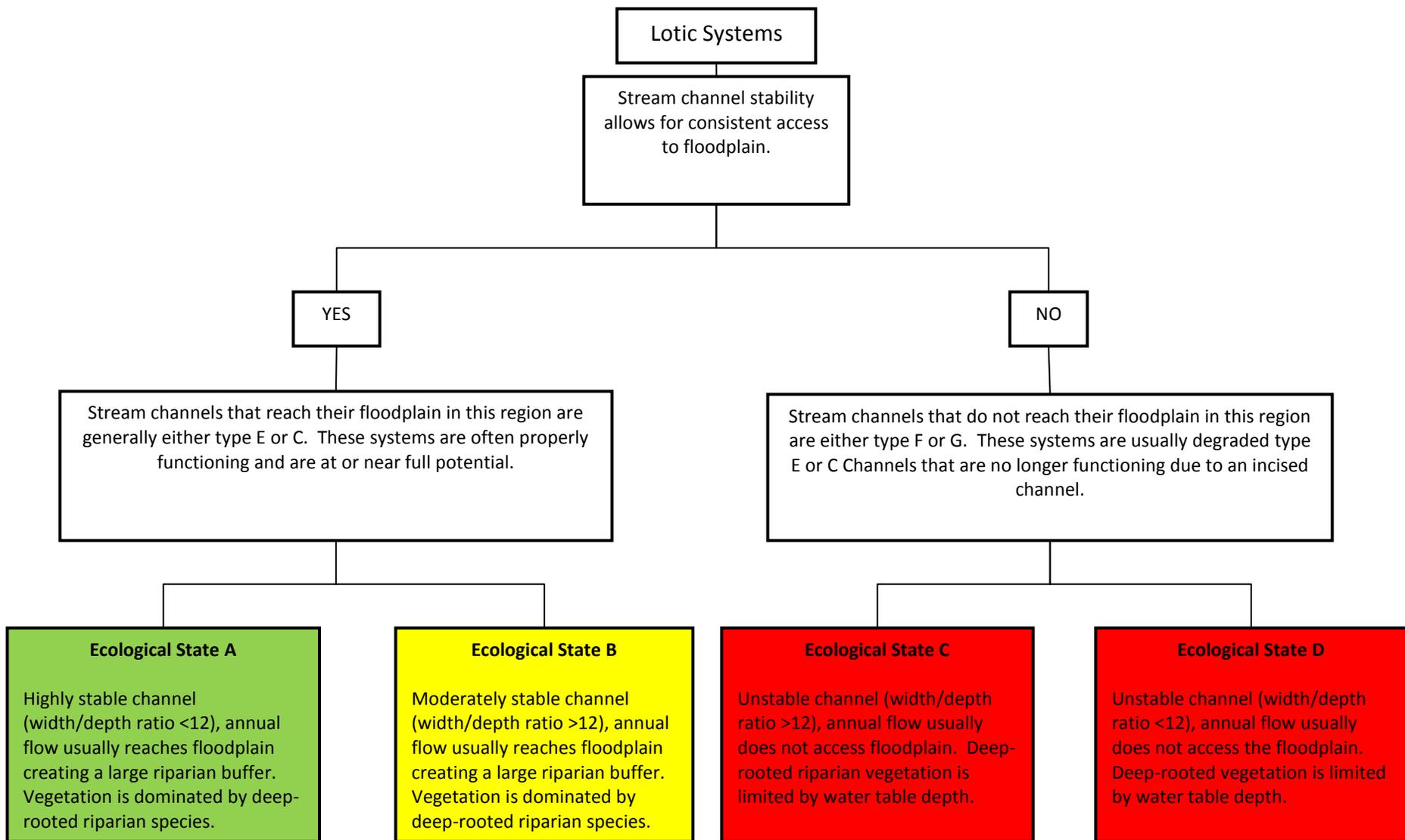
**Figure 8. Mid elevation sagebrush rangeland.** Conceptual ecological framework for managing sage-grouse habitat using a generalized state-and-transition model for **mid to high elevation sagebrush plant communities in Oregon with a warm and moist soil temperature/moisture regime** (Miller et al. 2013) 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.

# High Elevation Sagebrush Rangeland



**Figure 9. High elevation sagebrush rangeland.** 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.

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 Malheur 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 Malheur County SWCD, to direct future conservation strategies.



*Figure 10. Riparian state and transition model.*

2621 **APPENDIX D – Inventory and Monitoring**

2622  
2623 The basic method of upland trend monitoring used in this CCAA is a modified Pace 180° with  
2624 step-point and density measurements with plot photos and landscape photos in cardinal  
2625 directions, as described below. However, the CCAA provides the SWCD with the flexibility to  
2626 employ (with the concurrence of the landowner) the most efficient, generally accepted rangeland  
2627 monitoring methodologies to measure change in ecological states as related to specific objectives  
2628 in the SSP.

2629  
2630 ***Upland Trend Monitoring***

- 2631 • The Pace 180° Method is a quantitative procedure for monitoring vegetation trend. It  
2632 involves documenting groundcover “hits” using the toe of a boot along a pace transect at  
2633 specified intervals. This method provides an estimate of ground cover (bare ground, litter,  
2634 rock, perennial vegetation, annual vegetation, moss, and biological soil crusts), basal  
2635 cover of perennial herbaceous plants (grasses and grass-like plants and forbs), foliar  
2636 cover of woody species (trees and shrubs), and perennial plant composition (see Johnson  
2637 and Sharp, 2012).
  - 2638 • The Step-Point method employs a long pin flag or piece of welding rod dropped at the toe  
2639 of the forward boot along a pace transect to arrive at an estimate of cover. While holding  
2640 the pin flag vertical at the toe of the observer’s boot, he or she records all vegetation  
2641 interceptions along the full length of the pin beginning with top vegetation layers and  
2642 working down the pin flag to the soil surface. It measures cover for individual species,  
2643 total cover, and species composition by cover. Pace 180° and Step-Point measurements  
2644 will be collected every pace along a 100-point pace transect amounting to 100 samples  
2645 (see Herrick et al., 2005 for a detailed description of the Step-Point Monitoring Method).
  - 2646 • Density of perennial vegetation by species will be recorded every 5th pace in a 0.25 m<sup>2</sup>  
2647 frame; amounting to 20 density measurements for each transect. Density is simply the  
2648 number of plants per unit area. It is a particularly useful measurement for monitoring  
2649 sagebrush rangelands in which the herbaceous understory is typically dominated by  
2650 perennial bunchgrasses. Density is less well-suited to areas that support rhizomatous  
2651 perennial grass species because of difficulties associated with identifying and counting  
2652 individual plants. Density of perennial bunchgrasses is perhaps the best indicator of the  
2653 resistance of sagebrush rangeland to conversion to undesirable vegetation states. A 3’x 3’  
2654 photo plot will be established at the starting point of the modified Pace 180° transect (see  
2655 Johnson and Sharp 2012 for a detailed description of placement of the photo plot). A  
2656 landscape photo will be taken from the 3’x 3’ photo plot toward a permanent reference  
2657 point that defines the direction of the modified Pace 180° transect. Landscape photos will  
2658 also be taken in the cardinal directions from the 3’x 3’ photo plot.
  - 2659 • Repeat Photo Monitoring involves establishing a permanent photo plot and periodically  
2660 taking both ground level and transect view photographs. Comparing pictures of the same  
2661 site taken over a period of years provides visual evidence of vegetation and soil trend. A  
2662 properly located permanent photo point allows observation of changes in important  
2663 rangeland attributes including plant species composition, total plant cover, perennial plant  
2664 density, litter, spatial pattern of plants, plant vigor, and soil erosion. The form for  
2665 recording data using the modified Pace 180° method is shown in **Appendix D-1**.
- 2666

2667 ***Riparian Inventory and Trend Monitoring***

2668 The upstream and downstream ends of each long-term or trend monitoring location and any other  
2669 critical area will be marked with rebar. These permanent locations will be used as repeat photo  
2670 monitoring points. Photographs will be taken looking both upstream and downstream of each  
2671 point and repeated periodically to assess stream movement (lateral and downcutting) and provide  
2672 evidence of vegetative trend. If the ocular assessment indicates  $\geq 70\%$  groundcover of deep-  
2673 rooted riparian plant species or anchored rock (i.e. riparian ecological state A) then monitoring  
2674 will consist of trend photos only; however, if future photos indicate downward trend, then further  
2675 assessments such as Proper Functioning Condition (PFC) and Multiple Indicator Monitoring  
2676 (MIM) are recommended. If the ocular assessment indicates  $< 70\%$  groundcover of deep-rooted  
2677 riparian plant species or anchored rock (i.e. riparian ecological states B or C) then additional  
2678 assessments are recommended. Further assessment for stream segments with 50-69%  
2679 groundcover of deep-rooted riparian plant species or anchored rock (riparian ecological state B)  
2680 may include other qualitative measurement tools, such as PFC, which identify factors influencing  
2681 change within riparian systems. If the stream is shown to be “functional-at risk” or  
2682 “nonfunctional” according to PFC classifications, or has  $< 50\%$  groundcover of deep-rooted  
2683 riparian plant species or anchored rock (riparian ecological state C) upon ocular assessment, then  
2684 remedial conservation measures may be required to improve riparian conditions. If conservation  
2685 measures are required, a quantitative monitoring technique should be used to evaluate long-term  
2686 trend. One suggested quantitative trend monitoring technique is the MIM method, which  
2687 combines observations of up to 10 indicator variables (BLM, TR 1737-23) that can be used to  
2688 monitor long-term trend, short-term trend, and current condition along a specified stream reach  
2689 to gauge progress toward management objectives. The decision to perform long term monitoring  
2690 and the specific quantitative monitoring technique will be left to the discretion of the SWCD and  
2691 the landowner.

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## APPENDIX D-1 - Modified Pace 180° Method Form

VEGETATION TREND MONITORING																Soil Surface <u>(do not use litter):</u> Species Code (for basal intercept)  R = rock fragment (> 1/4 " diameter) BR = bedrock M = moss LC = lichen S = soil EL = embedded litter D = duff
Methodology _____				Ranch _____				Date _____								
Pasture _____				Observer(s) _____												
Transect No. _____				Veg. Type _____				Ecological Site _____								
Top Layer					D					D					D	
Code 1					E					E					E	
Code 2					N					N					N	
Code 3					S					S					S	
Soil Surface					I					I					I	
Nearest Plant					T					T					T	
Toe Hit					Y					Y					Y	
Top Layer					D					D					D	
Code 1					E					E					E	
Code 2					N					N					N	
Code 3					S					S					S	
Soil Surface					I					I					I	
Nearest Plant					T					T					T	
Toe Hit					Y					Y					Y	
Top Layer					D					D					D	
Code 1					E					E					E	
Code 2					N					N					N	
Code 3					S					S					S	
Soil Surface					I					I					I	
Nearest Plant					T					T					T	
Toe Hit					Y					Y					Y	
Top Layer					D					D					D	
Code 1					E					E					E	
Code 2					N					N					N	
Code 3					S					S					S	
Soil Surface					I					I					I	
Nearest Plant					T					T					T	
Toe Hit					Y					Y					Y	
Top Layer					D					D					D	
Code 1					E					E					E	
Code 2					N					N					N	
Code 3					S					S					S	
Soil Surface					I					I					I	
Nearest Plant					T					T					T	
Toe Hit					Y					Y					Y	
Top Layer					D					D					D	
Code 1					E					E					E	
Code 2					N					N					N	
Code 3					S					S					S	
Soil Surface					I					I					I	
Nearest Plant					T					T					T	
Toe Hit					Y					Y					Y	

**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



2725 **APPENDIX D-2-Site Documentation Form**

Page ____ of ____						
<b>Site Location and Documentation Data</b>						
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
Townshi p		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.)						

2726

2727 **Appendix D-3 Annual Grazing and Habitat Summary Form**

2728 **ANNUAL GRAZING AND HABITAT SUMMARY**

2729 \_\_\_\_\_ **GRAZING SEASON**

2730 Ranch Name (tract # will be assigned for file retention)\_\_\_\_\_

2731 Pasture Name (tract # will be assigned for file retention)\_\_\_\_\_

2732 Yield Index\_\_\_\_\_ Weather Station \_\_\_\_\_

2733 Was there effective precipitation for early growth or regrowth? Yes No

2734 Indicators of Resource Conditions (check relevant indicators):

2735 Fire Riparian Insects Weeds Nutrient Cycling Wildlife Habitat

2736 Trespass Drought Watershed Function Utilization Wolf Plants

2737 Livestock Distribution Range Improvements Deviation in system or Season of use

2738 Summary of field notes, observations and data that describe range, livestock, and habitat conditions  
2739 at the end of the year.

2740

2741

2742

2743

2744 Description of actions, events, or activities that may have caused resource objectives to be met, not  
2745 met, or moved toward or away from. Recommended changes for next grazing season.

2746

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2748

2749 Individuals providing input or review: \_\_\_\_\_,

2750 \_\_\_\_\_,

2751 \_\_\_\_\_ DATE: \_\_\_\_\_

2752

2753 **APPENDIX D-4–Baseline Inventory**

2754 The Upland Ecological State Documentation Form and the Riparian Ecological State  
2755 Documentation Form are ocular assessments that will document each ecological state within a  
2756 pasture and will provide the basis for selecting representative areas for each stratum, where  
2757 quantitative data will be collected and serve as permanent monitoring sites for the management  
2758 unit. For uplands, indicators will be surveyed within strata by applying the intuitive random  
2759 meander method (Nelson 1984) that traverses each stratum. Sampling of each stratum should be  
2760 conducted; however, certain strata (e.g., low elevation state C) will likely require less intensive  
2761 observation for confirmation than areas preliminarily identified as year-round or seasonal sage-  
2762 grouse habitat.

2763 The Upland Ecological State Documentation Form and the Riparian Ecological State  
2764 Documentation Form will be used to document each strata, by:

- 2765 • ground truthing preliminary ecological state strata. The procedure for ground confirming  
2766 preliminary ecological state strata will largely rely on an ocular assessment of key  
2767 indicators within each stratum.
- 2768 • making adjustments to boundaries of mapped ecological states when field observations  
2769 reveal deviations from preliminary strata.
- 2770 • taking a landscape photo with coordinates which represents the existing ecological state.

2771

2772

## 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<sup>2</sup>): \_\_\_\_\_

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<sup>1</sup>: \_\_\_\_\_;

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:**

<sup>1</sup> **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.

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**Riparian Ecological State Documentation Form**

Ranch \_\_\_\_\_ Observer(s) \_\_\_\_\_

Management Unit \_\_\_\_\_ Date \_\_\_\_\_

2781 **Plant Functional/Structural Groups Represented (box dominant groups; circle subdominant but**  
2782 **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

2783  
2784

**Greenline Vegetation Composition<sup>12</sup>:**

- \_\_\_ ≥ 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

2789  
2790

2791 **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	

2792  
2793

2794 **Ecological State Confirmed by Ocular Assessment** \_\_\_\_\_

2795 **Designated Monitoring Area (DMA) Coordinates:**

2796 **Upstream** \_\_\_\_\_

2797 **Downstream** \_\_\_\_\_

2798

<sup>12</sup> *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).

2799 **APPENDIX E – Herbicides and Best Management Practices**

2800  
2801 A major threat to sage-grouse within the CCAA area is the loss of habitat quality and quantity  
2802 due to the increase of exotic invasive plant species (noxious weeds) replacing native sagebrush  
2803 plant communities.

2804  
2805 ***Herbicide use***

2806 Herbicide application used alone or in combination with other methods may be used where  
2807 appropriate to provide a feasible and effective strategy for controlling invasive species and  
2808 preparing sites for desirable sage-grouse habitat restoration. Specific herbicides anticipated for  
2809 restoration and management of sage-grouse habitat or potential habitat are described in further  
2810 detail below. They were chosen for maximum effectiveness against wildland weeds and least  
2811 environmental and non-target species’ risks.

2812  
2813 ***Background***

2814 The herbicide list for this CCAA includes 19 herbicides. Seventeen of those tier to the  
2815 *Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS July 2010* (FEIS) and  
2816 related Record of Decision dated October 1, 2010. This July 2010 Oregon Final Environmental  
2817 Impact Statement tiers to the *Vegetation Treatments Using Herbicides on Bureau of Land*  
2818 *Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS)  
2819 and related Record of Decision completed in 2007, by the BLM Washington Office Rangelands  
2820 Resources Division; this set of documents made 17 herbicides available for a full range of  
2821 vegetation treatments in 17 western states, including Oregon. The additional two herbicides are  
2822 aminopyralid and rimsulfuron. The BLM intends to prepare an Environmental Impact Statement  
2823 (EIS) to evaluate the use of these two herbicides in its vegetation treatment programs on public  
2824 lands in 17 Western States (Federal Register, Volume 77, Number 246, Dec. 21, 2012). The risk  
2825 assessment for these two chemicals (aminopyralid and rimsulfuron ) have been completed and no  
2826 additional best management practices will be required than those identified in the July 2010 FEIS  
2827 that this document is tiered towards and are outlined below. (BLM 2014 e-mail communication)

2828  
2829 ***Sage-grouse Consideration***

2830 Both the *Sage Grouse Conservation Assessment* (Connelly et. al 2004) and *Ecology and*  
2831 *Conservation of Greater Sage Grouse: A Landscape Species and Its Habitats* (USGS 2009) were  
2832 reviewed and considered in preparation of the Oregon FEIS. Invasive plant treatments in infested  
2833 sage-grouse habitats would be part of restoration projects carefully designed to benefit sage-  
2834 grouse.

2835  
2836 ***Consistency with Labels and Laws***

2837 The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) establishes procedures for the  
2838 registration, classification, and regulation of all herbicides. Before any herbicide may be sold  
2839 legally, the EPA must register it. The EPA may classify an herbicide for general use if it  
2840 determines that the herbicide is not likely to cause unreasonable adverse effects to applicators or  
2841 the environment, or it may be classified for restricted use if the herbicide must be applied by a  
2842 certified applicator and in accordance with other restrictions. The herbicide label is a legal  
2843 document. Federal, state, and local law and all herbicide label requirements will be adhered to.

2844 Herbicides may be used only for the objectives and type of vegetation for which they are  
2845 registered, as displayed on the herbicide label.  
2846

### 2847 ***Best Management Practices***

- 2848 1. All manufacturer's label requirements and restrictions will be followed and  
2849 recommendations will be used as appropriate.
- 2850 2. To minimize risks to terrestrial wildlife, do not exceed typical application rates for  
2851 applications of dicamba, diuron, glyphosate, hexazinone, tebuthion, or triclopyr, where  
2852 feasible.
- 2853 3. Conduct a pretreatment survey. This may include, but is not limited to, flagging areas for  
2854 treatment, determining what noxious or invasive species are within the area, defining the  
2855 extent of area, and completing a through overview of the area before applying herbicides.
- 2856 4. Minimize the size of application area and use spot applications or low boom broadcast  
2857 where possible to limit the probability of contaminating non-target food and water  
2858 sources, when feasible.
- 2859 5. Where practical, limit glyphosphate and hexazinone to spot applications in grazing land  
2860 and wildlife habitat areas to avoid contamination of wildlife food items.
- 2861 6. Clean Off Highway Vehicles (OHVs) to remove plant material and herbicide residue to  
2862 minimize impact to non-target sites.
- 2863 7. Sprayers will be set to minimize drift (e.g., with low nozzle pressure, large droplet size,  
2864 low nozzle height) to the extent practical and feasible.
- 2865 8. Dyes may be used for herbicide application to ensure complete and uniform treatment of  
2866 invasive plants as well as to immediately indicate drift issues.
- 2867 9. Do not use adjuvant R-11.
- 2868 10. Either avoid using glyphosphate formulations containing POEA, or seek to use  
2869 formulations with the least amount of POEA, to reduce risk to amphibians.
- 2870 11. Do not use bromacil or diuron in rangelands and use appropriate buffer zones.
- 2871 12. To minimize disturbance to sage-grouse populations, do not conduct aerial or ground  
2872 broadcast applications of herbicides during nesting and early-brood rearing periods when  
2873 sage-grouse are present (March 1 – June 30, at a minimum), unless this timeframe or  
2874 target plant development stage is optimal for herbicide effectiveness.
- 2875 13. Most activities covered under this CCAA will occur on uplands, however, if herbicide  
2876 treatments are planned in ephemeral or perennial watercourses where listed fish may  
2877 occur additional coordination with the Service should occur.  
2878

### 2879 ***Herbicides***

2880 It is also noted that during the 30-year life of this agreement many technological changes for  
2881 control of invasives such as biological agents and herbicides will be developed for use on  
2882 rangelands and may be applied to improve sage-grouse habitat. As such herbicides and biological  
2883 control agents are approved by Environmental Protection Agency (EPA) and Oregon Department  
2884 of Agriculture (ODA) for use on rangelands, they will be considered for use under this umbrella  
2885 document to improve sage-grouse habitat. As previously noted, this document lists 19 specific  
2886 herbicides, however if other herbicides or biological agents are anticipated to be applied on  
2887 enrolled rangelands, agricultural and crop lands, an analysis will be conducted by SWCD. This  
2888 analysis will assess the risk associated with application of proposed chemicals, and if needed,  
2889 additional Best Management Practice(s) will be developed (e.g., a different timing

2890 recommendation for herbicide application). For permit coverage, use of herbicides other than the  
2891 following 19 listed will require a modification consistent with **Section N. Modification of**  
2892 **SSP/CI in Appendix B** or with **Section 18. Modification of Programmatic CCAA.**  
2893

2894 Herbicides can be categorized as selective or nonselective. Selective herbicides kill only a  
2895 specific type of plant. For example, an herbicide selective for broadleaved plants can be used to  
2896 manage such species while maintaining desirable grass species in rangeland communities. Non-  
2897 selective herbicides kill all types of plants, and thus should only be applied to the target species.  
2898 Herbicides can be used selectively to control specific types of vegetation (e.g., killing invasive  
2899 weeds), or non-selectively to clear all vegetation on a particular area (e.g. keeping a roadway  
2900 clear of vegetation). Some herbicides are post-emergent, which means they can be used to kill  
2901 existing vegetation; others are pre-emergent, which stops vegetation before it grows (e.g.,  
2902 prohibiting seeds from germinating).  
2903

2904 **List**

2905 **2, 4-D**

2906 *Product(s):* Many, including Amine, Hardball, Unison, Saber, Salvo, Aqua-Kleen, and Platoon  
2907 *Common Targets:* annual and biennial broadleaf weeds: kochia, whitetop, perennial pepperweed,  
2908 Russian thistle and knapweed, sagebrush, rabbitbrush. Selective to broadleaf.

2909 *Application:* Post-emergent

2910 *Point of application:* foliar  
2911

2912 **Aminopyralid**

2913 *Product(s):* Milestone

2914 *Common targets:* thistles, knapweed, some broadleaf weeds. Selective to broadleaf plants.

2915 *Application:* Post-emergent

2916 *Point of application:* soil or foliar  
2917

2918 **Bromacil**

2919 *Product(s):* Hyvar

2920 *Common Targets:* annual grasses and broadleaf weeds. Cheatgrass, puncturevine, ragweed, wild  
2921 oat, dandelion, quackgrass, wildcarrot. Nonselective.

2922 *Application:* Pre- and post-emergent

2923 *Point of application:* soil  
2924

2925 **Chlorsulfuron**

2926 *Product(s):* Telar

2927 *Common targets:* thistles, wild carrot, giant horsetail, poison hemlock, Russian knapweed,  
2928 marestail, perennial pepperweed, puncturevine, tansy ragwork, common tansy, common  
2929 teasel, dalmation toadflax, yellow toadflax, whitetop, dyer's woad. Selective to broadleaf.

2930 *Application:* Pre- and early post-emergent

2931 *Point of application:* soil and foliar  
2932  
2933  
2934  
2935

- 2936 **Clopyralid**  
 2937 *Product(s):* Transline, Stinger, Spur  
 2938 *Common targets:* thistles, common burdock, knapweeds, yellow starthistle, oxeye daisy,  
 2939 hawkweeds, prickly lettuce, dandelion, cutleaf teasel, kudzu, buffalobur. Selective to  
 2940 broadleaf.  
 2941 *Application:* Post-emergent  
 2942 *Point of application:* foliar  
 2943  
 2944 **Dicamba**  
 2945 *Product(s):* Vanquish, Banvel, Diablo, Vision, Clarity  
 2946 *Common targets:* knapweeds, Kochia, and thistles. Selective to broadleaf and woody plants.  
 2947 *Application:* Pre- and post-emergent  
 2948 *Point of application:* foliar  
 2949  
 2950 **Diflufenzopyr + dicamba**  
 2951 *Product(s):* Overdrive, Distinct  
 2952 *Common targets:* knapweeds, Kochia, and thistles. Selective to broadleaf.  
 2953 *Application:* Post-emergent  
 2954 *Point of application:* foliar  
 2955  
 2956 **Diuron**  
 2957 *Product(s):* Direx, Karmex  
 2958 *Common targets:* annual grasses. (including bluegrass) and broadleaf weeds. Lambsquarters,  
 2959 Kochia and Russian thistle. Selective to annual weeds, some perennials.  
 2960 *Application:* Pre-emergent  
 2961 *Point of application:* soil  
 2962  
 2963 **Fluridone**  
 2964 *Product(s):* Avast!, Sonar  
 2965 *Common targets:* Hydrilla and watermilfoils. Selective to submersed plants.  
 2966 *Application:* Post-emergent  
 2967 *Point of application:* aquatic  
 2968  
 2969 **Glyphosate**  
 2970 *Product(s):* Many, including Rodeo, Mirage, Roundup Pro, and Honcho  
 2971 *Common targets:* grasses (including Italian ryegrass), sedges, broadleaf weeds, and woody  
 2972 shrubs. Nonselective.  
 2973 *Application:* Post-emergent  
 2974 *Point of application:* soil or foliar  
 2975  
 2976 **Hexazinone**  
 2977 *Product(s):* Velpar  
 2978 *Common targets:* annual and perennial grasses and broadleaf weeds, brush, and trees. Selective  
 2979 to grasses, broadleaf, woody plants.  
 2980 *Application:* Pre- and post-emergent  
 2981 *Point of application:* soil or foliar

2982 **Imazapic**  
2983 *Product(s):* Plateau, Panoramic  
2984 *Common targets:* cheatgrass, leafy spurge, medusahead, whitetop, dalmation toadflax and  
2985 Russian knapweed. Selective to some broadleaf and grasses.  
2986 *Application:* Pre- and post-emergent  
2987 *Point of application:* soil  
2988  
2989 **Imazapyr**  
2990 *Products:* Arsenal, Habitat  
2991 *Common targets:* whitetop, cheatgrass, common knotweed, north Africa grass, Russian olive  
2992 *Application:* Pre- and post-emergent  
2993 *Point of application:* soil or foliar  
2994  
2995 **Metsulfuron methyl**  
2996 *Product(s):* Escort, Patriot, PureStand  
2997 *Common targets:* whitetop, perennial pepperweed, and other mustards and biennial thistles.  
2998 Selective to some broadleaf and grasses.  
2999 *Application:* Post-emergent  
3000 *Point of application:* soil or foliar  
3001  
3002 **Picloram**  
3003 *Product(s):* Triumph, OutPost, Tordon  
3004 *Common targets:* perennial and woody species. Knapweeds, starthistle, thistle, bindweed, leafy  
3005 spurge, rabbitbrush, rush skeletonweed, and poison oak. Selective to broadleaf and woody  
3006 plants.  
3007 *Application:* Pre- and post-emergent  
3008 *Point of application:* foliar  
3009  
3010 **Rimsulfuron**  
3011 *Product(s):* Matrix, Resolve DF, Bais  
3012 *Common targets:* weeds in potato crops. Some use on annual grass medusahead rye. Selective.  
3013 *Application:* Pre and post-emergent  
3014 *Point of application:* soil or foliar  
3015  
3016 **Sulfometuron methyl**  
3017 *Product(s):* Oust, Spyder  
3018 *Common targets:* cheatgrass, annual and perennial mustards, and medusahead. Nonselective.  
3019 *Application:* Pre- and post-emergent  
3020 *Point of application:* Soil or foliar  
3021  
3022 **Tebuthiuron**  
3023 *Product(s):* Spike  
3024 *Common targets:* sagebrush (thinning). Selective to broadleaf and woody plants.  
3025 *Application:* Pre- and post-emergent  
3026 *Point of application:*soil  
3027

3028 **Triclopyr**  
3029 *Product(s):* Garlon, Renovate, Element  
3030 *Common targets:* saltcedar, purple loosestrife, Canada thistle, tanoak, Himalayan blackberry.  
3031 Selective to broadleaf and woody plants.  
3032 *Application:* Post-emergent  
3033 *Point of application:* foliar  
3034

3035 **APPENDIX F – Information Used to Calculate Take**

3036

3037 ***Sage-grouse Density Calculation***

3038 The density of sage-grouse in the covered area was calculated as follows. There are an estimated  
 3039 24,515 sage-grouse in Oregon based on a 10-year (2004-2013) average of the statewide total  
 3040 spring population (ODFW unpublished data 2013). According to Hagen (2011) 90% of sage-  
 3041 grouse occupy PPH (core), which is estimated at 6.57 million acres in Oregon. The assumption  
 3042 was made that the remaining 10% of the sage-grouse population lie within PGH, which is  
 3043 estimated at 8.26 million acres in Oregon (Hagen 2011). Using the 10-year minimum breeding  
 3044 population average, sage-grouse densities in PPH are estimated at 0.0034 birds per acre (90% of  
 3045 24,515 = 22,064 sage-grouse divided by 6.57 million acres of PPH). Average sage-grouse  
 3046 densities in PGH are estimated at 0.0003 birds per acre (10% of 24,515 = 2,452 divided by 8.26  
 3047 million acres) (Table 3, below). These statewide average densities were then multiplied by the  
 3048 number of acres of PPH (472,528 ac x 0.0034 birds per ac) and PGH (414,021 ac x 0.0003 birds  
 3049 per ac) covered under this CCAA (see Table 1 in **Section 8. Covered Area**) to come up with an  
 3050 estimated 10-year minimum population average of 1,710 sage-grouse for the covered area.

3051

3052 **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	2,452	8,257,373	0.0003/PGH
90% of Birds in PPH	22,064	6,567,011	0.0034/PPH
<b>Total: 2004-2013 Statewide Minimum Spring Breeding Population Average</b>	<b>24,515</b>	14,824,384	
Habitat Type	Acres of Habitat	Birds by Habitat Type	
PGH	414,021	123	Birds in PGH
PPH	472,528	1,587	Birds in PPH
<b>Totals</b>	<b>886,549</b>	<b>1,710</b>	

3053

3054 ***Rangeland Treatments***

3055 When determining the level of take associated with Rangeland Treatments we used nest  
 3056 abandonment from livestock as a surrogate. We assumed that the types of disturbances that  
 3057 would occur as part of the activities described as “Rangeland Treatments” would have similar  
 3058 impacts to sage-grouse in the area being treated as those associated with repeated disturbance  
 3059 that cause hens to abandon their nests (see livestock management section below). We estimated  
 3060 that no more than 5% of the covered area (all acres PPH and PGH) would be treated in any one  
 3061 year. We felt this estimate was likely an overestimate because many rangeland treatments will  
 3062 occur in unsuitable habitats (juniper encroached areas, degraded sagebrush habitats etc.).  
 3063 Additionally, as described in the conservation measures under rangeland treatments,  
 3064  
 3065 minimization measures (timing etc.) will be employed when treatments occur to lessen the

3066 impacts to the covered area.

### 3067 *Livestock Management*

3068 We were able to calculate levels of take associated with nest abandonment and trampling of nests  
3069 from livestock grazing in occupied sage-grouse habitats. Three studies, identified nest  
3070 abandonment due to disturbance from livestock grazing resulting in a total of 8 out of 223 or  
3071 3.59% of nests being abandoned. (Rasmussen and Griner 1938 (n=5/161 nests research  
3072 conducted in Utah), Danvir 2002 (n=2/36, research conducted in Utah), and Holloran 2003  
3073 (n=1/26 research conducted in Wyoming)). Two studies containing a total of 450 nests with five  
3074 nests documented as destroyed or trampled by livestock resulting in a take percentage of 1.11%.  
3075 (Rasmussen & Griner (n=2/161), Severson in progress unpublished (n=3/289)). According to  
3076 ODFW 60% of the population are females (ODFW 2014 email), we further assumed all females  
3077 initiate nests and would be exposed to these threats. We placed 95% of females in PPH and 5%  
3078 of females in PGH, we based this assumption on the information provided in the 2011 ODFW  
3079 Strategy that states 95% of nesting occurs in core habitats which is equivalent to PPH, so we  
3080 assumed the additional 5% of nesting occurs on lands outside core or PGH.

### 3081 *Farm Operations*

3082 The acres impacted in the covered area were developed using 2010 LANDFIRE data, a GIS  
3083 analysis was conducted by intersecting the data identified as “agricultural” and the acres  
3084 identified in this CCAA as the “covered area.” The resulting acres (69,911 acres of PGH and  
3085 47,309 acres of PPH) are the acres we identified that interactions between sage-grouse and farm  
3086 equipment are most likely to occur. Very little data exists documenting direct take from farm  
3087 operations, one unpublished study by Davis in Oregon documented one sage-grouse being killed  
3088 during haying out of 105 collared birds, resulting in a take percentage of .95% (n=1/105).  
3089 Additionally, when site-specific plans are developed minimization measures (either those  
3090 currently in place or new measures) related to haying/farming will be identified in Section K of  
3091 the SSP.

### 3092 *Development*

3093 Fences are currently present throughout much of the covered area and some new fences may be  
3094 needed to protect sensitive areas of sage-grouse habitat or to evenly distribute livestock within  
3095 the covered area. Fences pose a strike risk to sage-grouse. A Utah study concluded that 18% of  
3096 documented mortalities to sage-grouse were from fence strikes (Danvir 2002). The overall  
3097 mortality rate for this population was 53%, making the relative risk of a sage-grouse hitting an  
3098 unmarked fence at 9.54%. In 2011-2013, Stevens published 3 papers examining the relative risk  
3099 of hitting fences and identifying key factors present in the habitat that would make a fence “high  
3100 risk”, these factors led to the development of a lek based model taking into account distance  
3101 from leks, slope, roughness and other factors, Stevens concluded that if high risk fences were  
3102 marked with anti-strike markers or reflectors it would reduce mortalities by 83%, which would  
3103 reduce overall fence strike mortality rate down to 1.62%. For our calculations we assumed  
3104 100% of all birds in the covered area would be exposed to fence strikes annually, we also  
3105 assumed all high risk fences that are enrolled will be marked as part of enrolled landowners  
3106 SSPs.  
3107

3108 ***Allowance of Additional 0.5% Take within covered area***  
3109 There may be additional take associated with both the direct and indirect aspects of rangeland  
3110 management, however there have been very few cause and effect studies quantifying this.  
3111 (Rowland 2004). We are providing an allowance of up to 0.5% as a result of these types of  
3112 activities across all covered lands and affecting all birds.

3113  
3114 ***Examples might include:***

- 3115 • Striking a sage-grouse with a vehicle while landowners or their agents are performing  
3116 covered activities, implementing conservation measures or recreating.
- 3117 • Small amounts of take from fence strikes to lower risk unmarked fences.
- 3118 • Non-commercial recreational activities.
- 3119 • Drowning in stock tanks fitted with escape ramps.