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Greater Sage-Grouse Programmatic  
Candidate Conservation Agreement with Assurances  
for Private Rangelands in Crook and Deschutes Counties,  
Oregon

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

July 30, 2014

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100

101 **PURPOSE**

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

106 **INTRODUCTION**

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

115  
116 A CCAA is a voluntary agreement whereby landowners agree to manage their lands to remove  
117 or reduce threats to a species that may become listed under the ESA. In return for managing  
118 their lands to the benefit of a species at risk, landowners receive assurances against additional  
119 regulatory requirements should that species ever be listed under the ESA. The programmatic  
120 design of this agreement, its “umbrella” nature, streamlines the process for landowner  
121 enrollment, as follows:

- 122
- 123 • Under a programmatic CCAA, the United States Fish and Wildlife Service (FWS) will  
124 issue Crook Soil and Water Conservation District (SWCD) an Enhancement of Survival  
125 (EOS) permit pursuant to section 10(a)(1)(A) of the ESA for a period of 30 years.
- 126 • The SWCD, in coordination with the FWS and other partners, will then work with willing  
127 landowners to develop a Site Specific Plan (SSP) for each landowner/parcel, and issue a  
128 Certificate of Inclusion (CI) for coverage under the EOS permit.

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

---

<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.”

140  
141 Since the agreement is voluntary, the landowner can end it at any point, although in doing so,  
142 any assurances and incidental take coverage for the enrolled landowner under the EOS permit  
143 would terminate.

144  
145 There are three goals this programmatic CCAA is designed to meet:

- 146
- 147 • Provide participating landowners assurances that current ranch and land management  
148 practices covered by this CCAA will continue in the event sage-grouse is listed under the  
149 ESA, provided that the CCAA is being implemented as agreed upon.
  - 150 • Promote CMs that reduce or remove threats to sage-grouse through proactive ranch and  
151 land management, providing comprehensive conservation to meet the CCAA standard.
  - 152 • Provide an ecological approach to maintain current sage-grouse habitat and to improve  
153 habitat that is not meeting conservation objectives, as identified in enrolled landowners'  
154 site specific plans.

155  
156 This species is currently a candidate for listing under ESA; it is not listed. Therefore, there are no  
157 ESA regulations related to sage-grouse currently impacting private lands and livestock  
158 operations. The sage-grouse is currently managed by Oregon Department of Fish and Wildlife  
159 (ODFW).

160  
161 ***Species Distribution and History***

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

169  
170 In Oregon, sage-grouse were once found in most grassland and sagebrush habitats east of the  
171 Cascades. European settlement and conversion of sagebrush steppe into agricultural production  
172 led to extirpation of the species in the Columbia Basin by the early part of the 1900s, but  
173 sagebrush rangelands have persisted, particularly in southeast Oregon. Sage-grouse populations  
174 have fluctuated markedly since the mid-1900s, with notable declines in populations from the  
175 1950s to early 1970s. Oregon sage-grouse numbers apparently have declined over the long term  
176 (Hagen 2005). However, population indices over the last 30 years suggest a relatively stable  
177 statewide population (Hagen 2010). Reasons for these losses likely are the cumulative effects of  
178 habitat loss and degradation, changes in predator control methods, and increases in human  
179 disturbance (Hagen 2005). Habitat loss and fragmentation are the primary cause for long term  
180 changes in population abundance and distribution. Additional threats include, sagebrush removal,  
181 agricultural conversion, drought, rising CO<sub>2</sub> levels, flooding, West Nile virus, unmanaged or  
182 improper grazing, wild horses, recreation, predation<sup>3</sup>, sagebrush defoliating insects (Aroga

---

<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; Moynahan et al. 2007; Willis et al. 1993). In particular the impacts of predation on sage-grouse can increase where habitat quality has been compromised by anthropogenic activities (Coates 2007; Bui 2009; Hagen 2012).

183 moth), and energy development and other infrastructure (USFWS 2010).

184

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

189

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

199

### 200 ***Listing***

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

213

### 214 ***CCAA Development***

215 In anticipation of a final listing decision by the FWS, representatives from Harney County  
216 SWCD met with a delegation of SWCD representatives from Baker, Malheur, Lake, Grant, and  
217 Crook Counties on April 8, 2014. The next day, Crook County SWCD formed its own Crook  
218 County Greater Sage-Grouse Candidate Conservation Agreement with Assurances Steering  
219 Committee (Steering Committee) to review and amend the Harney County Programmatic  
220 Candidate Conservation Agreement with Assurances document to accurately reflect the primary  
221 use of Oregon’s rangelands and communities of Crook and Deschutes County. Similar to the  
222 Steering Committee formed in Harney County, the Crook Steering Committee was comprised of  
223 representatives from local, private landowners, Crook and Deschutes County SWCD, FWS,  
224 NRCS, Crook County Court, ODFW, BLM, OSU Extension, TNC and DSL.

225

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

228

- ODFW’s Greater sage-grouse conservation assessment and strategy for Oregon (hereafter

229 referred to as ‘ODFW Strategy’) (Hagen 2011)

- 230 • FWS March 23, 2010, 12-month Finding (75 FR 13910)
- 231 • FWS January 12, 2005, 12-month Finding (70 FR 2243)
- 232 • Greater sage-grouse ecology and conservation of a landscape species and its habitat
- 233 (Knick and Connelly 2011).

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

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

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

## 244 **2. Conservation Approach**

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

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

254 The following steps summarize the process:

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

### 262 Prioritization of Enrollment by Category of Habitat/Location:

263  
264 Preliminary Priority Habitat (PPH), are areas that have been identified as having  
265 the highest conservation value to maintaining sustainable sage-grouse  
266 populations. These areas correspond to Core Area Habitat in the ODFW Sage-  
267 grouse Conservation Assessment and Strategy for Oregon which includes known  
268 breeding, late brood-rearing, and known winter concentration areas. These areas  
269 also correspond to Priority Areas for Conservation (PACs) as identified in the  
270 FWS 2013 Conservation Objectives Team Report which include the most  
271 important areas for maintaining sage-grouse populations across the landscape.

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

- 276 1. Private lands within PPH
- 277 2. Private lands within PGH and adjacent to PPH
- 278 3. Private lands within PGH and not adjacent to PPH
- 279 4. Private lands adjacent to PPH not within PGH
- 280 5. Private lands adjacent to PGH not within PPH
- 281 6. Private lands that will maintain or provide new connectivity between PGH  
282 and PPH

283  
284 The SWCD is responsible for the prioritization of private lands to be included in  
285 this CCAA consistent with ODFW Strategy (Hagen 2011) and its local  
286 implementation teams.

- 287 • SWCD will set a schedule to gather information needed to develop an SSP and to  
288 perform an initial assessment of the land where enrollment is sought.
- 289 • SWCD staff will conduct this initial assessment of ecological states. Following the site  
290 visit, the landowner and SWCD will identify the primary threats and the CMs that will  
291 address those threats. If the CMs seem acceptable to the landowner and SWCD, both  
292 parties will sign a Letter of Intent. The Letter of Intent is a non-binding agreement to list  
293 anticipated CMs, to schedule completion of baseline inventory, to schedule completion of  
294 an SSP and signing of the SSP/CI.
- 295 • SWCD will conduct a baseline inventory of the enrolled property within the timeframe  
296 identified within the Letter of Intent.
- 297 • The baseline data (initial reading) for long term monitoring (trend) may be collected,  
298 summarized, and completed prior to approval of the SSP, or a date for its completion will  
299 be scheduled within the SSP.
- 300 • SWCD will discuss with the landowner the importance of participation in or creation of a  
301 Rangeland Fire Protection Association (RFPA) to proactively protect private land from  
302 fires ignited on public land (see CM 6d).
- 303 • Upon landowner and SWCD agreement of the SSP and the CMs included in it, the  
304 SWCD will submit the SSP/CI to FWS for review and approval.
- 305 • FWS has up to 60 days to respond to the SSP application. Under the programmatic  
306 CCAA and relevant regulations and policy, if the SSP/CI and permit issuance criteria are  
307 met, the FWS will approve the SSP/CI through a Letter of Concurrence.
- 308 • Upon receiving a Letter of Concurrence from the FWS, both SWCD and the landowner  
309 will sign the SSP/CI.

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

311 Each participating landowner will work with the SWCD to develop an SSP intended to promote  
312 good land stewardship by implementing actions on their enrolled lands that benefit sage-grouse.  
313 The landowner and SWCD will identify threats and select CMs identified in the programmatic  
314 CCAA for inclusion in their SSP. Individual SSPs will be consistent with the activities and CMs

315 identified in the programmatic CCAA and will describe specific conservation practices that will  
316 be implemented on the enrolled lands to maintain, rehabilitate, or enhance habitat for the species,  
317 and remove or reduce any unfavorable impacts to the species arising from the management of  
318 these lands. Since all appropriate CMs cannot be anticipated, additional CMs can be included in  
319 the individual SSPs, which were not identified in the programmatic CCAA and that support  
320 healthy sage-grouse habitat, provided the landowner, SWCD, and FWS mutually agree to the  
321 CM. Once the individual SSP has been approved by the landowner, SWCD, and FWS, the  
322 SWCD will issue a Certificate of Inclusion (CI) to cover the agreed upon rangeland management  
323 practices and provide the landowner with coverage.

## 324 **5. Conservation Measures Development**

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

340  
341 The process of selecting and/or developing specific CMs for individual properties will be based  
342 on the threats identified for the enrolled property (detailed in the SSP/CI), recognizing that each  
343 property is unique and CMs will be site-dependent. The SWCD will work with each landowner  
344 to identify specific threats for the property and select and/or develop CM(s) to remove or reduce  
345 each threat. Each identified threat within the control of the landowner will be addressed and will  
346 have one or more corresponding CM(s); the FWS and SWCD recognize not every potential CM  
347 listed for a particular threat is appropriate for a given property. Therefore, CMs selected or  
348 developed will be based on their likely effectiveness, ability to be implemented, and should be  
349 the most beneficial for sage-grouse conservation on that particular property.

350  
351 If no threats are identified or if current management is addressing identified threats, a detailed  
352 description of current management and a monitoring strategy may suffice as the SSP. **However,**  
353 **each enrolled landowner must agree to CM 1: *Maintain contiguous habitat by avoiding***  
354 ***further fragmentation*.** The objective for this required CM is for no net loss in 1) habitat  
355 quantity (as measured in acres) and 2) habitat quality (as determined by the ecological state). The  
356 baseline determination of habitat quality and quantity will be completed during the baseline  
357 inventory and will serve as a reference point in meeting the objective for CM 1. Losses in sage-  
358 grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice versa,  
359 as long as the action avoids further fragmentation (consistent with *Section 10. Covered Activities*  
360 - development subsection).

361  
362 While this is the objective of CM 1, FWS and SWCD understand that changes out of the control  
363 of the landowner will be handled as a changed circumstance. If changed circumstances occur,  
364 conservation measures need to be included consistent with *Section 14. Changed Circumstances*.  
365 CM 1 does not exclude CMs that might create a short term loss of habitat quality or quantity  
366 because such measures are intended to result in a long term improvement to sage-grouse habitat.  
367 Development activities covered by this agreement will be described in the SSP at the time of  
368 enrollment or can be added as a modification (consistent with *Section N. Modification of SSP/CI*,  
369 located in Appendix B) to the SSP and internal mitigation may be required (consistent with  
370 *Section 10. Covered Activities - development subsection*).

371  
372 While these CMs should apply across the landscape, there may be circumstances where site-  
373 specific modifications or conditions warrant changes to the standard prescriptions. Changes to  
374 CMs and/or development of CMs will occur in consultation with the landowner and must have  
375 concurrence from the FWS. The SWCD will note those changes on the SSP/CI for enrolled  
376 properties, including rationale or justification for any modifications.

377  
378 This CCAA incorporates, by reference, all conservation strategies in the ODFW Strategy (Hagen  
379 2011) that are relevant to private lands. The landowner, SWCD, and FWS will draw from those  
380 strategies while developing CMs in the SSPs and implementing actions for the sage-grouse on  
381 lands enrolled in this CCAA. However, it is unlikely that the ODFW Strategy and this  
382 programmatic CCAA cover all needs for certain circumstances, so site specific measures outside  
383 of these references will be determined, as necessary, in consultation with landowners.

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

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

397  
398 This section:

- 399 • Explains how individual enrolled lands are classified for upland and riparian sites (Site  
400 Selection Protocol)
- 401 • Visually depicts with a flow chart the stepwise process of inventorying the existing  
402 habitat conditions and establishing a data base for long term monitoring (Figure 1)
- 403 • Provides criteria for each ecological state and visually depicts how information about the  
404 current ecological state of the enrolled property feeds into the process of identifying  
405 potential threats, relevant objectives, needed conservation measures, and associated  
406 monitoring (Figures 2-4)

- Explains the purposes of long term monitoring (trend) and annual monitoring and refers the reader to each method’s protocols and forms

### ***Site Selection Protocol***

- 1. Background information**-Stratifying enrolled lands into inventory and monitoring units will require gathering any of the following background information that exists for each property/properties for which a site specific plan is being considered: aerial photographs, satellite imagery, written and oral histories, disturbance history (e.g., burn maps), management history, property maps, plant species lists, ecological sites and site descriptions, and soil maps.
- 2. Stratify by habitat suitability using existing data**-The enrolled property will first be stratified into areas of existing suitable (i.e., low elevation ecological states A, B, and D; high elevation ecological states A and B; lotic riparian ecological states characterized by consistent access to floodplain) or potentially suitable sage-grouse habitat (i.e. low elevation ecological state C; high elevation ecological states C, D, and E; lotic riparian ecological states without consistent access to floodplain) and areas of persistently unsuitable habitat (e.g., historically non-habitat or permanently converted habitat – infrastructure, agriculture, residential, etc.) (see Figure 1).
- 3. On-site documentation of upland ecological states** -The upland property will then be stratified by management unit (typically by pasture). Each upland management unit will then be stratified into the two primary ecological types (i.e., high elevation sagebrush rangeland and low elevation sagebrush rangeland) using a combination of existing knowledge and/or data, ecological site descriptions, GIS techniques, and field reconnaissance. Ecological types within management units will then be stratified by the ecological states described in their respective state and transition model. Preliminary ecological state strata will be determined using GIS data. The resultant preliminary strata will then be used to direct ground truthing and associated habitat inventory efforts; ground truthing of preliminary ecological state strata will be accomplished following procedures outlined in the Upland Ecological State Documentation Form (Appendix D-4). The ocular assessment outline located in Appendix D-4 will provide the basis for selecting representative areas for each stratum, where quantitative data will be collected and serve as permanent habitat monitoring sites for the management unit (long term (trend) monitoring).
- 4. Establish and monitor upland trend sites** – Sites which are representative of the ecological status of sage-grouse habitat within a pasture will be determined during ocular assessment and permanently marked on the ground and recorded using the Site Documentation Form shown in Appendix D-2 (Johnson and Sharp 2012). Trend monitoring, which consists of measurements of plant community attributes (ground cover, foliar cover of shrubs, basal cover of perennial herbaceous species, density and frequency of occurrence) will be recorded in an initial or baseline monitoring with follow-up measurements recorded at intervals of 3 to 10 years. The frequency of trend monitoring is dependent on site stability, baseline data determinations and the conservation measures being applied. The changes in plant community attributes are measured over time to determine if the ecological state of the plant community is

454 changing (transitioning) toward or away from desired habitat or remaining stable. This  
455 information is assessed along with annual monitoring to determine cause(s) of change  
456 which may be management or climatic or a combination of both. This becomes the basis  
457 of determining if selected conservation measures are having the desired effect or if  
458 adaptive changes are needed. The basic method of upland trend monitoring used in this  
459 CCAA is a modified Pace 180° with step-point and density measurements with plot  
460 photos and landscape photos in cardinal directions. However, the CCAA provides the  
461 SWCD with the flexibility to employ (with the concurrence of the landowner) the most  
462 efficient, generally accepted rangeland monitoring methodologies to measure change in  
463 ecological states as related to specific objectives in the SSP. For a detailed explanation of  
464 the upland protocols see Appendix D.

465  
466 5. Stratify riparian areas - Each stream will be stratified by pasture. This will be done to  
467 better identify the factors that are influencing change within each management unit (i.e.  
468 pasture). A site visit will be performed on the stream segments to identify critical areas  
469 (e.g. headcuts, extreme downcutting) and to perform ocular assessments. The ocular  
470 assessment is a point-in-time measurement of visual indicators and will be used for initial  
471 assessment to determine the ecological state of each stream reach within the model  
472 (Appendix C). Ideally one ocular assessment will be done per stream segment; however,  
473 due to stream heterogeneity and changes in ecological condition, multiple assessments  
474 may be necessary.

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

### 488 ***Annual Monitoring***

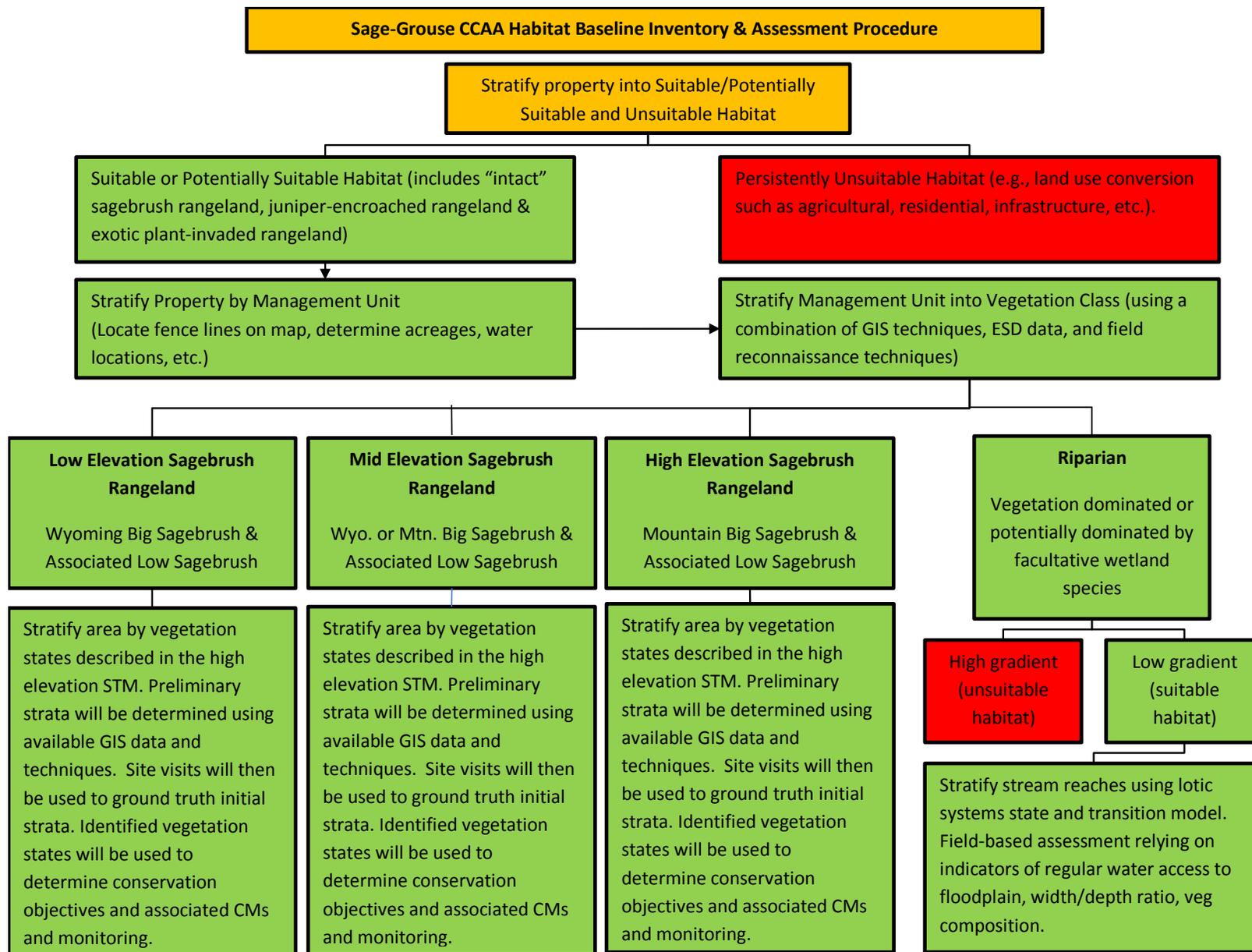
490 Sagebrush rangelands are dynamic systems that constantly change in response to fire, wildlife,  
491 climate, insect infestations, weed invasions, and natural vegetation succession; not just to inputs  
492 from management. Annual monitoring focuses on identifying management inputs and factors  
493 external to the management program that affect the responses of sagebrush rangeland over time.  
494 These are the factors that influence the change documented with trend monitoring (described  
495 above) and may include growing conditions for plants (e.g., precipitation, temperature trends,  
496 drought, etc.), livestock and wildlife numbers, utilization patterns of livestock and wildlife,  
497 insect and rodent infestations, recreational use, trespass livestock, and timing, duration, and  
498 frequency of livestock grazing. Suggested information and a data form for conducting annual  
499 monitoring are shown in Appendix D-3. In addition to the information in the “Annual Grazing

500 and Habitat Summary”, other potentially important annual records would include pasture-level  
501 grazing utilization and distribution, actual use, sage-grouse observations, or any other factors that  
502 could have affected the growing conditions for vegetation not identified on the form.

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

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



Low Elevation Sagebrush Rangeland			
<p><b>Ecological State A</b></p> <p>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></p> <p>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></p> <p>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></p> <p>Site dominated by exotic species. Often results in exotic annual grass-fire cycle.</p> <p>Not capable of providing habitat for sage-grouse in current state.</p> 
<p><b>Conservation Objectives</b></p> <p>Prevent conversion to exotic annual grasses by maintaining dominance of large, deep-rooted perennial bunchgrasses and sagebrush.</p> <p>Manage for stable or improving trend.</p>	<p><b>Conservation Objectives</b></p> <p>Prevent conversion to exotic annual grasses by maintaining dominance of large, deep-rooted perennial bunchgrass and provide conditions for reestablishment of sagebrush.</p> <p>Manage for transition toward State A..</p>	<p><b>Conservation Objectives</b></p> <p>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></p> <p>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></p> <p>Wildfire Improper grazing Exotic Invasives</p>	<p><b>Threats</b></p> <p>Wildfire Improper Grazing Exotic Invasives Vegetative Treatment</p>	<p><b>Threats</b></p> <p>Wildfire Improper Grazing Exotic Invasives</p>	<p><b>Threats</b></p> <p>Wildfire Exotic Invasives Vegetative Treatment</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>

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Figure 3: Mid Elevation Sagebrush Rangeland Ecological Type

Mid Elevation Sagebrush Rangeland				
<p><b>Ecological State A</b></p> <p>Site dominated by sagebrush, large perennial bunchgrasses, and perennial forbs. Sagebrush cover &gt;10%. Capable of providing year around habitat.</p> 	<p><b>Ecological State B</b></p> <p>Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover &lt;10%. Capable of providing seasonal habitat.</p> 	<p><b>Ecological State C</b></p> <p>Co-dominance of conifers, perennial grasses and sagebrush. Areas of conifer cover &gt;5% not capable of providing seasonal habitat.</p> 	<p><b>Ecological State D</b></p> <p>Site dominated by conifers. Depleted perennial understory. Exotica annuals present. Not capable of providing habitat in current state.</p> 	<p><b>Ecological State E</b></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>

High Elevation Sagebrush Rangeland				
<p><b>Ecological State A</b></p> <p>Site dominated by sagebrush, large perennial bunchgrasses, and perennial forbs. Sagebrush cover &gt;10%. Capable of providing year around habitat.</p> 	<p><b>Ecological State B</b></p> <p>Site dominated by large perennial bunchgrasses and perennial forbs. Sagebrush cover &lt;10%. Capable of providing seasonal habitat.</p> 	<p><b>Ecological State C</b></p> <p>Co-dominance of conifers, perennial grasses and sagebrush. Areas of conifer cover &gt;5% not capable of providing seasonal habitat.</p> 	<p><b>Ecological State D</b></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><b>Ecological State E</b></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>

<b>Lotic Riparian Systems</b>			
<p><b>Ecological State A</b></p> <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><b>Ecological State B</b></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><b>Ecological State C</b></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><b>Ecological State D</b></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>

521 ***Scientific Studies and Species Monitoring***

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

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

535

536 ***Monitoring Summaries, Evaluation, and Reporting***

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

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

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

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

**7. Authorities**

***SWCD Authorities***

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

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

***FWS Authorities***

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

612 programs in furtherance of the purposes of the ESA. The purposes of the ESA are “to provide a  
613 means whereby the ecosystems upon which endangered species and threatened species depend  
614 may be conserved,” and “to provide a program for the conservation of such endangered species  
615 and threatened species ...” “Conserve” is defined in section 3(3) of the ESA and means “to use  
616 and the use of all methods and procedures which are necessary to bring any endangered species  
617 or threatened species to the point at which the measures provided pursuant to this Act are no  
618 longer necessary.”  
619

620 Section 10 of the ESA describes permits issued under the ESA, exempting certain prohibitions  
621 under Section 9 of the ESA. Section 10(a)(1)(A) of the ESA authorizes the issuance of EOS  
622 permits to “enhance the survival” of a listed species. Enhancement means the permitted  
623 activities benefit species in the wild. By entering into a CCAA, the FWS is utilizing its  
624 Candidate Conservation Programs for further conservation of the Nation’s fish and wildlife,  
625 consistent with the FWS’s “Candidate Conservation Agreement with Assurances Final Policy”  
626 (64 FR 32726; June 17, 1999). The conservation goal of this programmatic CCAA is to maintain  
627 and enhance sage-grouse on private lands within the range of the species in County, Oregon.  
628 Upon approval of this Programmatic CCAA the FWS will issue an EOS permit to the Crook  
629 SWCD. Landowners will meet this conservation goal by implementing agreed upon CMs in  
630 individual SSPs to address threats to the species, and will receive regulatory certainty from the  
631 FWS concerning land use restrictions that might otherwise apply, should this species be listed  
632 under the ESA.  
633

634 Even if Site Specific Plans (SSPs) are implemented under this programmatic CCAA, the FWS  
635 cannot guarantee listing will never be necessary for all or part of the sage-grouse range. It is  
636 important to note that the FWS’s directive to, “preclude or remove any need to list” is based  
637 upon the removal of threats and the stabilization or improvement of the species’ status. The  
638 decision to list or not to list sage-grouse under the ESA is a regulatory process independent of a  
639 CCAA or a Candidate Conservation Agreement (CCA). The FWS will evaluate actions and  
640 successes of this CCAA in accordance with the FWS Policy for Evaluation of Conservation  
641 Efforts (PECE) during the listing determination process, as required under section 4(b)(2)(A) of  
642 the ESA. The FWS will consider the contribution to conservation made by these agreements in a  
643 “five-factor analysis” which is used to make any species listing determination (50 CFR Chapter  
644 IV, Federal Register Vol. 63, No. 60, March 2003).  
645

646 The five factors include:

- 647 • The present or threatened destruction, modification, or curtailment of the species’ habitat  
648 or range
- 649 • Overutilization of the species for commercial, recreational, scientific, or educational  
650 purposes
- 651 • Disease or predation
- 652 • The inadequacy of existing regulatory mechanisms
- 653 • Other natural or man-made factors affecting the species’ continued existence

## 654 **8. Covered Area**

655 This CCAA pertains to private lands within sage-grouse habitat in Crook and Deschutes  
656 Counties, Oregon, both by the current distribution of sage-grouse and to those private lands that

657 provide potential habitat that may be occupied by the species in the future. Ranches that have  
 658 their base of operations in Crook and Deschutes Counties may include portions of their ranch  
 659 that is located in adjacent counties. If ranch base lands (i.e. ranch headquarters, agricultural  
 660 production, meadows) are within Crook and Deschutes Counties, it may be reasonable to include  
 661 contiguous pastures in adjacent counties for inclusion in this CCAA. The map of the "Covered  
 662 Area" (see Figure 5) includes the private lands in counties adjacent to Crook and Deschutes  
 663 Counties that could be eligible for enrollment.

664  
 665 For purposes of analysis, FWS analyzed PPH and PGH as representing the best current estimate  
 666 of sage-grouse habitat. However, private lands within the covered area that are not currently  
 667 designated as PPH or PGH but have the characteristics of sage-grouse habitat or have known  
 668 sage-grouse occupancy may be included in the agreement.

669  
 670 The authorities granted to Soil and Water Conservation Districts in Oregon Revised Statutes (see  
 671 *Section 7. Authorities*) allow for private lands in counties adjacent to Crook and Deschutes  
 672 Counties to be included in this programmatic CCAA. The process that would allow Crook  
 673 SWCD the jurisdiction to work with landowners who have property in both counties is: upon a  
 674 joint request from Crook SWCD and the affected landowner, the neighboring SWCD may  
 675 approve the request and pass a resolution.

676  
 677 In Crook and Deschutes Counties, there are over 1.1 million acres of potential sage-grouse  
 678 habitat. See table below for a breakdown of these acreages in Crook and Deschutes Counties:

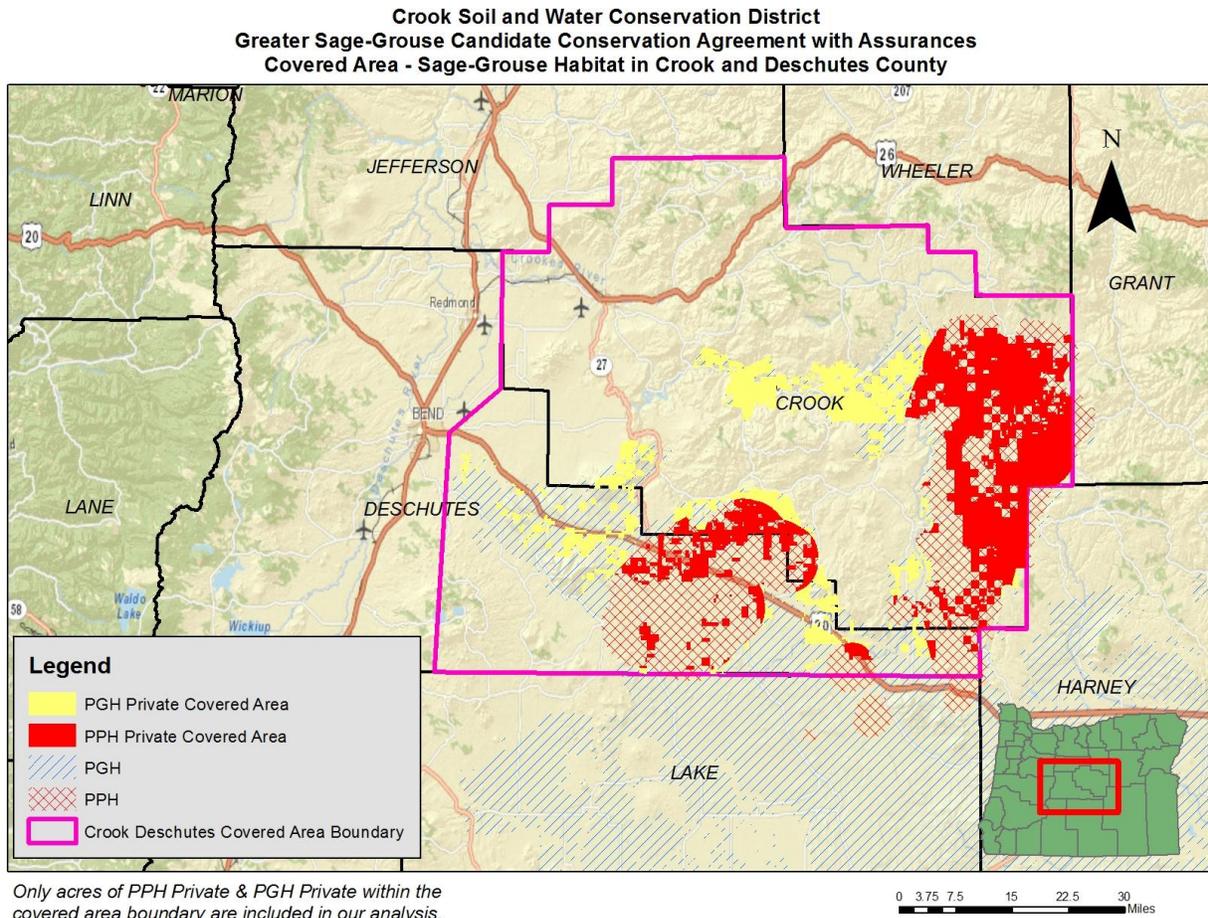
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**Table 1: Acreage breakdown for covered area**

<i>Landowner</i>	<i>PGH within Covered Area</i>	<i>PPH within Covered Area</i>	<i>Total</i>
<i>Private Acres within Covered Area</i>	169,831.00	316,135.00	485,966.00
<i>BLM in Crook/Deschutes County</i>	232,209.00	307,333.00	539,542.00
<i>Other*</i>	54,198.00	51,853.00	106,051.00
<b><i>Totals</i></b>	<b>456,238.00</b>	<b>675,321.00</b>	<b>1,131,559.00</b>

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

Figure 6: Covered area map



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## 9. Responsibilities of the Parties

### *Landowners will:*

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

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

734

735 ***The U.S. Fish and Wildlife Service will:***

- 736 • Provide assistance in coordinating development and implementation of this CCAA
- 737 • Review each SSP<sup>4</sup> and provide a Letter of Concurrence within 60 days if all issuance
- 738 criteria are met for all SSPs completed under the EOS permit
- 739 • Provide technical assistance to aid the landowners in implementing the CMs
- 740 • Review monitoring data for consistency with CCAA objectives to determine if
- 741 conservation measures are providing the desired benefit to sage-grouse
- 742 • Serve as an advisor, providing expertise on the conservation of sage-grouse
- 743 • Assist in the implementation of conservation measures, monitoring, or other measures if
- 744 agreed upon during the development of the SSP by landowner, SWCD, and FWS

---

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

- 745 • Provide FWS funding, to the extent funding is available consistent with *Section 23.*
- 746 *Availability of Funds*, of the programmatic CCAA, to support implementation of this
- 747 CCAA and associated SSPs/CIs
- 748 • Provide support and assist in obtaining funding from other sources for the
- 749 implementation of CMs
- 750 • Conduct outreach and public education efforts to promote the conservation of sage-
- 751 grouse
- 752 • Immediately report to ODFW any observed or reported mortalities of sage-grouse
- 753 • Protect, to the maximum extent permissible under federal laws, against the disclosure of
- 754 all confidential personal and/or commercial information provided by enrolled landowners
- 755 and collected, gathered, prepared, organized, summarized, stored, and distributed for the
- 756 purposes of developing and implementing this CCAA
- 757 • Provide notice to SWCD when a Freedom of Information Act (FOIA) request for records
- 758 concerning this CCAA is made, and allow the SWCD to prepare a notification requesting
- 759 that any confidential personal and/or commercial information be withheld

## 760 **10. Covered Activities**

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

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

### 771 **Ongoing and planned rangeland practices**

772  
 773 Activities that are covered by this CCAA and the associated EOS permit include most activities  
 774 commonly practiced on rangelands. However, as complex as rangelands are, so are the  
 775 landowners’ uses that depend on these for their livelihoods. If activities not included below are  
 776 occurring on lands to be enrolled, the FWS will determine if they are consistent with the  
 777 programmatic CCAA and permit issuance criteria as well as whether or not additional NEPA  
 778 analysis is needed to cover them. Activities that meet all required standards may be considered  
 779 for inclusion in individual SSPs, provided that the effect of including such activities does not  
 780 significantly change the CCAA’s effect on the environment. Rangeland practices were divided  
 781 into five categories: rangeland treatments, livestock management, recreation, farm operations,  
 782 and development; and are described in more detail below and in association with the  
 783 conservation measures in Appendix A.

### 785 **Rangeland Treatments**

- 786 • Establishing and maintaining fire breaks or green strips of fire resilient vegetation
- 787 • Limited sagebrush removal in areas where the sagebrush canopy cover is too high (>25%) for
- 788 the development of understory grasses and forbs if they are determined to be limited

- 789 • Seeding or plugs with perennial grasses, forbs, and sagebrush to enhance both sage-grouse
- 790 habitat and livestock forage
- 791 • Juniper and conifer removal to enhance sage-grouse habitat
- 792 • Weed control (mechanical, herbicides, biological agents)
- 793 • General stewardship of rangelands

794

795 **Livestock Management**

- 796 • Grazing of forage
- 797 • Construction, placement, and maintenance of fences, ponds, stock-tanks and other watering
- 798 sources
- 799 • Feeding hay and dietary supplements in pastures
- 800 • Establishing and maintaining remote camps
- 801 • Gathering, moving, trailing, temporary penning, rounding-up and shipping livestock;
- 802 • Calving and branding operations
- 803 • Disposal of dead animals
- 804 • General stewardship and animal husbandry practices

805

806 **Recreation**

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

813

814 **Farm Operations**

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

820

821 **Developments**

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

825

826 **Stipulations on Developments in this CCAA**

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

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

## 837 **11. Anticipated Incidental Take**

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

### 843 **Types of Incidental Take**

844 We considered three primary types of incidental take: (1) injury or death; (2) harm in the form of  
845 habitat fragmentation, loss, or degradation and (3) harassment in the form of human activities  
846 that significantly disrupt normal behavioral patterns such as breeding, feeding, or sheltering. For  
847 each type of take we describe the associated covered activities and conservation measures that  
848 will minimize the take.  
849

#### 850 **Injury or death**

- 851
- 852 • Haying and other farming operations that use heavy equipment can directly kill or injure  
853 adult and juvenile sage-grouse especially brooding females and their young or eggs. If only  
854 the female is killed or injured any young or eggs are likely to die due to lack of parental care.  
855 The risk of this is low because areas that are under cultivation are typically not suitable sage-  
856 grouse habitat however margins of fields that have sagebrush habitat nearby may be used for  
857 nesting and foraging. These impacts will be minimized by implementation of practices  
858 identified during site-specific plan development (Appendix B, Sections I and K).
  - 859 • Fences used for livestock management, especially those in certain high-risk locations can  
860 cause direct mortality to sage-grouse from collision (Beck and Mitchell 2000; Connelly et al.  
861 2004; Crawford et al. 2004; Cagney et al. 2010) The risk of collision with fences will be  
862 minimized by removing unnecessary fences; and marking fences in high-risk locations to  
863 make them more visible to sage-grouse (see CM 28 and 29). Vertical structures such as  
864 telephone and power lines and poles serve as raptor perches and therefore can indirectly  
865 contribute to injury and death to sage-grouse from avian predators. This risk will be  
866 minimized by removing unnecessary structures, undergrounding lines when feasible, and  
867 limiting new construction (See CM 2 and 5).
  - 868 • Sage grouse can drown in livestock water tanks when they use them as a water source. This  
869 risk will be minimized by properly equipping stock-tanks with escape ramps (See CM 27).
  - 870 • Standing water sources including stock-tanks and ponds managed for livestock watering can  
871 attract mosquitoes and increase the risk of West Nile virus outbreaks (USFWS 2010). West  
872 Nile virus is known to injure or kill sage-grouse. This risk will be reduced by minimizing  
873 unnecessary standing water sources (see CM 56).

---

<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.

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

881

882 **Harm:**

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

912

913 **Harassment**

- 914 • Due to seasonal accessibility or weather issues, rangeland treatments such as juniper removal  
915 from sagebrush habitat may need to be conducted when sage-grouse are nesting or otherwise  
916 utilizing these areas. If so this would cause some temporary harassment of sage-grouse.  
917 However without treatment, juniper encroachment can make habitat unsuitable for sage-  
918 grouse. Harassment will be minimized through careful scheduling of treatments. (See CM  
919 15)

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

939 **12. Authorized Take**

940 Authorization of incidental take is provided in the EOS permit issued by the FWS, if sage-grouse  
941 is listed. This authorization is limited to incidental take resulting from covered activities and  
942 implementation of conservation measures identified in the CCAA/SSP or EOS Permit. The  
943 amount of authorized incidental take from covered activities, if 100% of the covered area is  
944 enrolled, would be a maximum of 1380 sage-grouse over the 30-year term of the CCAA or 46  
945 birds annually. If less than 100% of the area is enrolled under the CCAA, then the authorized  
946 take would be proportionally less. If the species is listed, take will be authorized based on the  
947 amount of acres of PPH and PGH enrolled in the CCAA. Additionally, evaluation of take will  
948 be based on a rolling 5-year average such that if take is high in one year it will not exceed  
949 authorized take unless the 5-year average annual take exceeds authorized take. Statewide  
950 population estimates as well as the amount and types of sage-grouse habitat (PPH and  
951 PGH)(Table 3, Appendix F) available under the Crook SWCD CCAA were used to come up  
952 with this level of take.  
953

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

<b><u>Take Calculation:</u></b>		<b><u>Acres Impacted</u></b>	<b><u>Birds Exposed</u></b>	<b><u>Rate of Injury or Mortality</u></b>	<b><u>Potential Annual Take</u></b>
<b><u>Rangeland Treatments</u></b>					
Assume no more than 5% will be treated in any one year and assume rates similar to nest abandonment.	PGH	8,369	2	3.59%	0.09
	PPH	15,807	53	3.59%	1.91
<b><u>Livestock Management</u></b>					
Nest Abandonment	PGH (5%)		33	3.59%	1.20
(60% of Birds Exposed = 667)	PPH (95%)		634	3.59%	22.73
Nest Trampling	PGH (5%)		33	1.11%	0.37
(60% of Birds Exposed = 667)	PPH (95%)		634	1.11%	7.04
<b><u>Farm Operations</u></b>					
Haying (unpublished Davis 1/105)	PGH	7,683	2	0.95%	0.02
	PPH	4,982	17	0.95%	0.16
<b><u>Development</u></b>					
Fences (assuming high risk marked)	PGH		84	1.62%	1.36
	PPH		387	1.62%	6.27
<b><u>Additional Take from Other Activities .5%</u></b>					
	PGH	167,374	50	0.50%	0.25
	PPH	316,134	1062	0.50%	5.31
<b>Total Annual Take</b>					<b>47</b>
<b>Total Take over 30 years</b>					<b>1,410</b>
<b>Annual Take Percentage</b>					<b>4.23%</b>

955  
956 \*For details on how the numbers above were calculated see Appendix F.  
957

958 **Impacts of the Taking**

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

970  
971 The authorized amount of take may be adjusted if the statewide 10-year minimum spring

972 breeding population average changes by more than 10%. While the total amount of authorized  
973 take will be proportional to the amount of enrolled properties, take will be counted against the  
974 whole permit rather than individual properties in order to allow more management flexibility.  
975

### 976 **Monitoring and Evaluation of Take**

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

## 987 **13. Expected Benefits**

988 Benefits to sage-grouse habitat in Crook and Deschutes Counties are expected as a result of  
989 implemented SSPs developed under this agreement. The CMs identified in this CCAA are  
990 expected to benefit sage-grouse through maintenance, enhancement, and rehabilitation of sage-  
991 grouse habitats by reducing threats causing direct and indirect mortality. Enhanced survival of  
992 sage-grouse is the objective of this agreement and implementation of the CMs identified in this  
993 CCAA is expected to compensate any estimated take. Private rangeland management can be  
994 complementary to sage-grouse habitat; livestock management was not a primary contributor to  
995 the 2010 “warranted” determination. In the FWS 2010 listing decision, the FWS determined the  
996 act of grazing was not the specific threat affecting the species, but that some aspects of livestock  
997 management have the potential to influence habitat loss, fragmentation, and degradation.  
998

999 The sage-grouse is affected rangewide by a variety of threats, such as habitat fragmentation from  
1000 wildfire, invasive species, conifer encroachment, energy and other types of development as well  
1001 as predation, recreation, sagebrush conversion and other threats. This CCAA addresses a subset  
1002 of these threats on a portion of the species range, the occupied sage-grouse habitat of Crook and  
1003 Deschutes Counties, Oregon. For this CCAA, the conservation measures must reduce all the  
1004 threats within their control on enrolled lands. If actions identified in species conservation  
1005 strategies<sup>6</sup> were undertaken on all necessary properties rangewide, the declining trend would be  
1006 reversed and there would be no need to list. This level of conservation benefit is more than just a  
1007 net conservation benefit to recovery; it is a reversal in the species trend - if it could be replicated  
1008 on all necessary properties. Thus, it is more than just an improvement in status on that property,  
1009 it is significant reduction in threats.  
1010

1011 Some specific benefits to sage-grouse habitat provided by rangeland management activities  
1012 implemented in accordance with this CCAA include:

- 1013 • maintenance of large tracts of un-fragmented and undeveloped land;

---

<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.

- 1014 • managing fuels to help reduce the risk of catastrophic wildfires and associated fragmentation;
- 1015 • potentially increasing rangeland plant diversity, including perennial grasses and forbs;
- 1016 • weed and invasive species management;
- 1017 • maintenance and enhancement of healthy springs and seeps (Beck and Mitchell 2000;
- 1018 Connelly et al. 2004; Crawford et al. 2004; Cagney et al. 2010);
- 1019 • contributing to meeting the strategies and objectives of ODFW’s Strategy (Hagen 2011) that
- 1020 are relevant to enrolled private lands; and
- 1021 • ranking preference for obtaining resources from federal, state, and local programs for sage-
- 1022 grouse habitat improvement (e.g. NRCS Sage Grouse Initiative, FWS Partners, OWEB).

1023  
1024 Enrolled landowners agree to manage their lands in a manner that provides a benefit to sage-  
1025 grouse. Under an SSP, enrolled lands may be suitable for appropriate mitigation actions or  
1026 conservation banking from off-site development (if and when available). As FWS, SWCD, and  
1027 other cooperators become aware of any mitigation opportunities in Oregon or nationally, they  
1028 will help direct such opportunities to enrolled landowners. Mitigation actions or conservation  
1029 banks for off-site or on-site development may occur, but will have a separate agreement with  
1030 independent requirements (for information about internal mitigation - mitigation within a  
1031 landowner’s enrolled property- see *Development Subsection in Section 10. Covered Activities*).

1032  
1033 Additionally, the assurances conferred under the CCAA program by section 10(a)(1)(A) EOS  
1034 permits provide economic stability of current land and livestock management activities on  
1035 enrolled lands. Since private landowners control substantial acreage of important habitat for  
1036 sage-grouse, implementation of CMs by enrolled landowners throughout Crook and Deschutes  
1037 Counties could potentially maintain or improve over 1 million acres of sage-grouse habitat,  
1038 county wide. The FWS believes if similar conservation measures that address threats to sage-  
1039 grouse were implemented throughout sage-grouse range; the need to list sage-grouse would  
1040 likely be precluded.

1041

#### 1042 **14. Assurances Provided**

1043 Through this CCAA, the FWS provides the SWCD and participating landowners enrolled  
1044 through SSPs/CIs with assurances that no additional conservation measures or additional land,  
1045 water, or resource use restrictions, beyond those voluntarily agreed to and described in the  
1046 Conservation Measures (Appendix A) of this CCAA and associated SSPs/CIs will be required  
1047 should sage-grouse become listed as a threatened or endangered species in the future, provided  
1048 that the SSPs are being implemented as agreed upon (the ONLY exception is when an  
1049 unforeseen circumstance occurs -see *Section 16. Unforeseen Circumstances*). These assurances  
1050 will be authorized with the issuance of an EOS permit under ESA section 10(a)(1)(A).

#### 1051 **15. Changed Circumstances**

1052 Changed circumstances are changes affecting sage-grouse or the geographic area covered by this  
1053 CCAA that can reasonably be anticipated and can be planned for. This CCAA has identified  
1054 wildfire, drought, West Nile virus, catastrophic flooding, habitat fragmentation from  
1055 development, and herbicide use as potential changed circumstances that are expected to occur  
1056 over the 30-year life of the permit.

1057

1058 If it is determined by the landowner, SWCD, or FWS that a changed circumstance(s) exist, the  
1059 landowner will implement the appropriate changed circumstance conservation measures  
1060 (CCCMs) or a mutually agreed upon approach to address the additional threat or threats created  
1061 by the changed circumstance(s). CCCMs will be adopted to meet the CCAA standard on enrolled  
1062 lands. All modifications, changes or additions to the SSP will be mutually agreed upon by the  
1063 landowner, SWCD and FWS. If a changed circumstance(s) occurs, the SWCD will notify the  
1064 FWS of the enrolled lands affected, the impact of the changed circumstance(s), and the CCCM(s)  
1065 that will be implemented to address the changed circumstance(s), the FWS will provide a letter  
1066 of concurrence (within 30 days) to the SWCD approving the CCCMs if the CCCM's will allow  
1067 enrolled lands to continue to meet the CCAA standard. The following list provides possible  
1068 conservation measures to address threats created by a changed circumstance(s). Conservation  
1069 Measures not identified on this list may be developed with landowner agreement and with  
1070 approval of FWS.

1071

1072 **Wildfire** - Wildfire impacts affecting landowners enrolled with SSPs/CIs will be handled on a  
1073 case-by-case basis. SWCD will work with the individual landowners to determine the  
1074 management practices to be applied, which may include:

1075 **CCCM 1.** SWCD will evaluate with the landowner the need for rehabilitation based on pre-  
1076 fire plant community health, fire intensity, and proximity to invasive annual species (e.g.  
1077 cheatgrass, medusahead). SWCD will provide a written summary to the landowner of their  
1078 evaluation and need for active rehabilitation or for natural recovery.

1079

1080 **CCCM 2.** Landowner will allow for natural vegetation recovery where healthy pre-fire plant  
1081 communities exist and observed fire intensity indicates natural recovery and proximity of  
1082 invasive species are not a concern. Timing of livestock grazing following wildfire will  
1083 depend on response of desirable vegetation. SWCD and the landowner will identify and set  
1084 quantifiable objectives for post-fire vegetation recovery based on pre-fire monitoring data,  
1085 returning livestock grazing once objectives have been met.

1086

1087 **CCCM 3.** Following wildfire, landowner will participate in rehabilitation where natural  
1088 recovery is unlikely, due to fire intensity and/or proximity to invasive annual species, and  
1089 where feasible, practicable, and if adequate funding is available. Where annual grasses are  
1090 prevalent, plant aggressive fire-resistant perennial species to stabilize the site and allow for  
1091 long term recovery of sagebrush and other native species.

1092

1093 **CCCM 4.** Landowner will implement, as needed, CMs listed under "Threat: Exotic Annual  
1094 Invasion" in Appendix A.

1095

1096 **CCCM 5.** SWCD will conduct post-treatment monitoring to determine if rehabilitation  
1097 techniques have been successful or if implementation changes are indicated (*see Section 6.*  
1098 *Inventory and Monitoring Protocols*).

1099

1100 **CCCM 6.** Landowners will replace fence or temporarily fence where needed to protect  
1101 recovering habitat post-fire, and, where appropriate, mark these fences with anti-strike  
1102 markers or other agreed upon visual markers, as described by CM 30 in Appendix A.

1103

1104 **Drought** - When rangeland plants are deprived of precipitation, it affects the plant's growth  
1105 cycle, volume of growth, and fruition. When drought conditions exist, annual monitoring will be  
1106 used to determine site-specific recommendations. Drought is site specific and is typically  
1107 considered to occur when two growing seasons of precipitation are below the long term average,  
1108 affecting plant life cycles as described above. Prolonged drought is when the conditions  
1109 described above persist for three or more growing seasons.

1110  
1111 Variation in precipitation is common throughout the sage-grouse range. Annual rangeland  
1112 monitoring and CMs on enrolled lands are expected to address year-to-year variations in  
1113 precipitation. Droughts in important sage-grouse habitats may create conditions reducing  
1114 seasonally available habitat resulting in changed circumstances. In some instances, failure to  
1115 make timely adjustments in livestock use during drought has resulted in limited plant regrowth,  
1116 overuse in wet meadows and riparian areas, and has negated gains in rangeland conditions made  
1117 during higher-precipitation years (Thurow and Taylor 1999).

1118  
1119 In the event of moderate to extreme drought, as determined by National Oceanic and  
1120 Atmospheric Administration (NOAA)<sup>7</sup> or if annual monitoring indicates drought conditions, the  
1121 SWCD will meet with enrolled landowners to evaluate the drought condition effect on sage-  
1122 grouse habitat and then consult with FWS. The following CCCM is intended to address the  
1123 changed circumstance:

1124 **CCCM 7.** Utilize adaptive management to adjust levels and season of livestock grazing  
1125 during drought conditions to maintain suitable sage-grouse habitat using the site specific  
1126 conditions as determined in the baseline and subsequent trend monitoring. These adaptive  
1127 management measures may include:

- 1128 a. Implement management changes, such as grazing rest, deferment, rotation, or  
1129 other changes designed to maintain long term vegetation health for sage-grouse  
1130 habitat.  
1131 b. Develop grass banks for use during drought conditions.  
1132 c. Develop additional water sources for livestock and sage-grouse.  
1133 d. Employ other vegetation management to ensure long term plant community  
1134 health.

1135  
1136 **West Nile virus**-WNV has spread to eastern Oregon. In 2006, a die-off of at least 60 sage-  
1137 grouse was documented near Burns Junction, and two other sage-grouse deaths were confirmed  
1138 from WNV near Crane and Jordan Valley. Of the birds found dead, 3 provided suitable tissue  
1139 samples and all were confirmed to be infected with WNV. No other significant mortalities have  
1140 been documented in Oregon since 2006. However, there is the potential for an outbreak among  
1141 sage-grouse, which are susceptible to the disease and suffer a high rate of mortality when  
1142 infected. Currently, sage-grouse show low to no resistance to WNV, and mortality is assumed to  
1143 be 100% (Naugle et al. 2004).

1144  
1145 If outbreak occurs, as identified by state health officials<sup>8</sup> or other appropriate regulatory agency,  
1146 the landowner should implement the following CCCMs, as appropriate:

---

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

<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>

1147 **CCCM 8.** Report observations of dead or sick sage-grouse or other bird deaths that could be  
1148 attributed to disease or parasites to SWCD or FWS within 48 hours.

1149  
1150 **CCCM 9.** Cooperate with responsible agencies to implement feasible mosquito control,  
1151 which may include:

- 1152 a. Minimize unnecessary standing water that could be used as mosquito breeding  
1153 grounds within sage-grouse habitat  
1154 b. Use larvicides in areas that mosquito habitat cannot be reduced  
1155 c. Evaluate the effectiveness of spraying for adult mosquitoes, and consider using  
1156 mosquito specific control measures

1157  
1158 **Habitat fragmentation and disturbance resulting from development** -Impacts can include  
1159 both direct loss of habitat from agricultural conversion or sagebrush removal and habitat  
1160 fragmentation by roads, pipelines, power lines, wind turbines, and other infrastructure.  
1161 Accompanying noise disturbance can also reduce lek attendance and nesting success.

1162  
1163 In the event of development on, or adjacent to, lands enrolled under this programmatic CCAA, in  
1164 which the landowner does not have the legal ability (e.g. split estate mineral rights, noise  
1165 disturbance from adjacent development) to exclude such development, the following measures  
1166 may apply:

1167 **CCCM 10.** The SWCD, FWS and the landowner will evaluate the direct and indirect impacts  
1168 to determine if the impacts will negate the intended benefits of the conservation measures  
1169 being implemented or planned to be implemented on the enrolled lands.

1170  
1171 **CCCM 11.** If these impacts are found to negate the CMs on some portion of the enrolled  
1172 lands the landowner, SWCD and FWS will meet and develop alternative, mutually agreed  
1173 upon conservation measures including, but not limited to, alternate CM implementation  
1174 location within the enrolled lands.

1175  
1176 In the event that planned development, on lands that the landowner chose not to enroll in the  
1177 CCAA but *does* have legal control of, is likely to affect sage-grouse and their habitats on the  
1178 landowner's enrolled lands, the following CCCMs may apply:

1179 **CCCM 12.** The landowner, SWCD, and FWS will evaluate the direct and indirect impacts to  
1180 determine if the impacts are likely to negate the intended benefits of the conservation  
1181 measures being implemented or planned to be implemented on the enrolled lands.

1182  
1183 **CCCM 13.** If these impacts are found to negate the CMs to the extent that the CCAA  
1184 standard is no longer being met, the landowner will work with the SWCD and FWS and  
1185 develop an alternate approach for the planned development or for the enrolled lands to  
1186 maintain the CCAA standard and landowner enrollment. If an agreement cannot be reached  
1187 and the CCAA standard is no longer being met, the enrolled landowner or the SWCD or  
1188 FWS can terminate the SSP and associated assurances provided under the CI.

1189  
1190 **Catastrophic Flooding** –Excessive runoff resulting from catastrophic hydrological events (e.g.  
1191 rain on snow event) are associated with mass-wasting of hill slopes, damage to river banks, and  
1192 downstream flooding. These events have the capability to drastically change stream hydrology

1193 and vegetative composition of riparian corridors. These events are often associated with a 100-  
1194 year flood cycle.

1195 **CCCM 14.** Utilize adaptive management based on evaluation of degree of flood impact.  
1196 Adjust levels and season of livestock grazing after a catastrophic flood event to maintain  
1197 and/or rehabilitate suitable sage-grouse habitat.  
1198

1199 **CCCM 15.** Re-evaluate stream segments to identify critical areas and changes in ecological  
1200 state and identify measures that could enhance stream function.  
1201

1202 **Herbicide Use** – Currently, information is lacking on the direct effects of herbicides to sage-  
1203 grouse; however, research on sage-grouse is ongoing and published studies and other new  
1204 information often become available. If new research or other information indicates that one or  
1205 more of the covered herbicides causes significant adverse effects to sage-grouse that outweigh  
1206 the benefits of treating their habitats, the following CCCM may be implemented.

1207 **CCCM 16.** The Service can remove those herbicides (or group of herbicides) from the  
1208 covered list; or if feasible require implementation of additional best management practices  
1209 with SWCD and/or enrolled landowners to avoid and minimize take.  
1210

## 1211 **16. Changed Circumstances Not Provided for in the CCAA**

1212 If FWS determines that additional conservation measures not provided for in the CCAA are  
1213 necessary to respond to the changed circumstances, the FWS will not require any additional  
1214 CMs in the CCAA or the SSP/CI without the consent of the enrolled landowner, provided the  
1215 SSP is being properly implemented. The SWCD, FWS, and/or the landowner, if he or she  
1216 desires, will assist by seeking funding to implement the agreed upon CMs.

## 1217 **17. Unforeseen Circumstances**

1218 Unforeseen circumstances are changes in circumstances affecting sage-grouse or the geographic  
1219 area covered by the CCAA that could not reasonably have been anticipated by the landowner,  
1220 SWCD and the FWS at the time of the CCAA's development, and result in a substantial and  
1221 adverse change in the status of the sage-grouse.  
1222

1223 The only situation where modification of conservation measures can be required by FWS is an  
1224 unforeseen circumstance. To respond to unforeseen circumstances, the FWS may require  
1225 modified or additional conservation measures by the landowner, but only if such measures  
1226 maintain the original terms of the CCAA/SSP. The FWS will consider whether failure to adopt  
1227 additional conservation measures would appreciably reduce the likelihood of survival and  
1228 recovery of sage-grouse in the wild. Additional conservation measures will not involve the  
1229 commitment of additional land, water, or landowner funds, or additional restrictions on the  
1230 use of land, water, or other natural resources available for development or use under the  
1231 original terms of the CCAA without the consent of the landowner, provided the SSP/CI is  
1232 being properly implemented. Funding for conservation measures warranted under this section  
1233 will be sought by FWS, SWCD, and/or other partners, including the landowner if he or she  
1234 desires.  
1235

1236 The FWS will have the burden of demonstrating that unforeseen circumstances exist, using

1237 information that is both reliable and credible and incorporates the best scientific and  
1238 commercial data available. These findings must be clearly documented and based upon  
1239 reliable technical information regarding the status and habitat requirements of sage-grouse.  
1240 The FWS will consider, but not be limited to, the following factors:

- 1241 • Size of the current range of sage-grouse
- 1242 • Percentage of range adversely affected within the CCAA
- 1243 • Percentage of range conserved by the CCAA
- 1244 • Ecological significance of that portion of the range affected by the CCAA
- 1245 • Level of knowledge about sage-grouse and the degree of specificity of the species'
- 1246 conservation program under the CCAA

## 1247 **18. Duration of CCAA, EOS Permit, and SSP/CI**

1248 This programmatic CCAA will be in effect for 30 years following its approval and signing by the  
1249 FWS. The section 10(a)(1)(A) EOS permit authorizing take of the species also will have a term  
1250 of 30 years from the effective date of the permit. This duration should be sufficient to determine  
1251 that the CMs are benefiting the sage-grouse. SSPs/CIs for enrolled landowners will be in effect  
1252 for up to 30 years (or the amount of years remaining on the EOS permit for the programmatic  
1253 CCAA) following FWS approval through a Letter of Concurrence and signing of the SSP/CI by  
1254 the landowner and SWCD. This suits the practicalities of maximizing enrollment opportunities  
1255 for interested landowners. While sage-grouse remain unlisted, the FWS may renew SSPs/CIs  
1256 and permits, based upon reevaluation of the CCAA's ability to continue to meet the CCAA  
1257 standard. An enrolled landowner may also voluntarily terminate a SSP/CI as described in  
1258 *Section O. Termination of SSP/CI*, located in Appendix B. The FWS can only enroll new  
1259 properties as long as sage-grouse has not been listed.

## 1260 **19. Modification of Programmatic CCAA**

1261 The FWS may not, through modification of the programmatic CCAA, impose any new  
1262 requirements or conditions on, or modify any existing requirements or conditions applicable to,  
1263 an enrolled landowner or successor in interest to the landowner to compensate for changes in the  
1264 conditions or circumstances of any species or ecosystem, natural community, or habitat covered  
1265 by the CI except as stipulated in 50 CFR 17.22(d)(5) and 17.32(d)(5).

1267 17.22 is the section of the Code of Federal Regulations (CFR) pertaining to: Permits for  
1268 scientific purposes, enhancement of propagation or survival, or for incidental taking.

1269 17.32 is the section of the Code of Federal Regulations CFR pertaining to: Permits – general.

1270

1271 Language for both CFR sections is identical, and is as follows:

1272 (5) *Assurances provided to permittee in case of changed or unforeseen circumstances.* The  
1273 assurances in this paragraph (d)(5) apply only to permits issued in accordance with paragraph  
1274 (d)(2) where the Candidate Conservation with Assurances Agreement is being properly  
1275 implemented, and apply only with respect to species adequately covered by the Candidate  
1276 Conservation with Assurances Agreement. These assurances cannot be provided to Federal  
1277 agencies.

1278 **20. Succession and Transfer**

1279 Within the SSP, the enrolled landowner agrees to give 30 days' written notice to the SWCD of  
1280 his or her intent to sell the enrolled property or of any transfer of ownership, so that the SWCD  
1281 can attempt to contact the new owner, explain the baseline responsibilities applicable to the  
1282 property, and allow the new owner to have the option of receiving CCAA assurances by signing  
1283 the original SSP/CI. As a party to the original SSP/CI and permits, the new owner will have the  
1284 same rights and obligations with respect to the enrolled property as the original owner.  
1285 Alternatively, the new owner may enroll in a new SSP/CI if sage-grouse has not been listed.  
1286 Assignment or transfer of the permit shall be governed by FWS regulations in force at the time.  
1287 If a new owner chooses not to enroll, the permit authorizations and assurances will cease.

1288 **21. EOS Permit Suspension or Revocation**

1289 The FWS may suspend the privileges of exercising some or all of the EOS permit authority at  
1290 any time if the permittee is not in compliance with the conditions of the permit, or with any  
1291 applicable laws or regulations governing the conduct of the permitted activity. Such suspension  
1292 shall remain in effect until the issuing officer determines that the permittee has corrected the  
1293 deficiencies.

1294  
1295 *The FWS may not revoke an EOS permit except as follows:*

1296 The FWS may revoke an EOS permit for any reason set forth in 50 CFR 13.28(a)(1) through (4).  
1297 This regulation authorizes revocation if: the permittee willfully violates any Federal or State  
1298 statute or regulation, or any Indian tribal law or regulation, or any law or regulation of any  
1299 foreign country, which involves a violation of the conditions of the permit or of the laws or  
1300 regulations governing the permitted activity; or the permittee fails within 60 days to correct  
1301 deficiencies that were the cause of a permit suspension; or the permittee becomes disqualified; or  
1302 a change occurs in the statute or regulation authorizing the permit that prohibits the continuation  
1303 of a permit issued by FWS.

1304  
1305 *A permit can be disqualified or revoked if:*

- 1306 1. A conviction, or entry of a plea of guilty or nolo contendere, for a felony violation of the  
1307 Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act  
1308 disqualifies any such person from receiving or exercising the privileges of a permit,  
1309 unless such disqualification has been expressly waived by the Director in response to a  
1310 written petition.
- 1311 2. The revocation of a permit for reasons found in § 13.28 (a)(1) or (a)(2) disqualifies any  
1312 such person from receiving or exercising the privileges of a similar permit for a period of  
1313 five years from the date of the final agency decision on such revocation.
- 1314 3. The failure to pay any required fees or assessed costs and penalties, whether or not  
1315 reduced to judgment disqualifies such person from receiving or exercising the privileges  
1316 of a permit as long as such moneys are owed to the United States. This requirement shall  
1317 not apply to any civil penalty presently subject to administrative or judicial appeal;  
1318 provided that the pendency of a collection action brought by the United States or its  
1319 assignees shall not constitute an appeal within the meaning of this subsection.
- 1320 4. The failure to submit timely, accurate, or valid reports as required may disqualify such  
1321 person from receiving or exercising the privileges of a permit as long as the deficiency  
1322 exists.

1323 The FWS may revoke an EOS permit if continuation of the permitted activity would either  
1324 appreciably reduce the likelihood of survival and recovery in the wild of any listed species, or  
1325 directly or indirectly alter designated critical habitat such that it appreciably diminishes the value  
1326 of that critical habitat for both the survival and recovery of a listed species.  
1327 Before revoking a permit for either of the two reasons in the preceding paragraph, the FWS, with  
1328 the consent of the permittee, will pursue all options that FWS consider appropriate to avoid  
1329 permit revocation. These options may include, but are not limited to: extending or modifying the  
1330 existing permit, compensating the enrolled landowner to forgo the activity, purchasing an  
1331 easement or fee simple interest in the enrolled property, or arranging for a third party acquisition  
1332 of an interest in the property.

## 1333 **22. Remedies**

1334 Each party shall have all remedies otherwise available to enforce the terms of the CCAA and the  
1335 EOS permit, except that no party shall be liable in monetary damages for any breach of this  
1336 CCAA, any failure to perform an obligation under this CCAA, or any other cause of action  
1337 arising from this CCAA.

## 1338 **23. Dispute Resolution**

1339 Landowner, SWCD, and FWS recognize disputes concerning implementation of, compliance  
1340 with, or termination of the CCAA, EOS permit, or SSP/CI may arise from time to time.  
1341 Landowner, SWCD, and FWS agree to work together in good faith to resolve such disputes,  
1342 using the informal dispute resolution procedures set forth in this section, or such other  
1343 procedures upon which the parties may later agree. However, if at any time any party determines  
1344 circumstances so warrant, they may seek any available remedy without waiting to complete  
1345 informal dispute resolution.

### 1346 *Informal dispute resolution process*

1347 Unless the parties agree upon another dispute resolution process, or unless an aggrieved party  
1348 has initiated administrative proceedings or suit in Federal court as provided in this section, the  
1349 parties may use the following process to attempt to resolve disputes:

- 1351 • The aggrieved party will notify the other parties of the provision potentially violated, the  
1352 basis for contending a violation has occurred, and the remedies it proposes to correct the  
1353 alleged violation.
- 1354 • The party alleged in violation will have 30 days, or such other time as may be agreed, to  
1355 respond. During this time it may seek clarification of the information provided in the  
1356 initial notice. The aggrieved party will use its best efforts to provide any available  
1357 information responsive to such inquiries.
- 1358 • Within 30 days after such response was provided or was due, representatives of the  
1359 parties having authority to resolve the dispute will meet and negotiate in good faith  
1360 toward a solution satisfactory to all parties, or will establish a specific process and  
1361 timetable to seek such a solution.
- 1362 • If any issues cannot be resolved through such negotiations, the parties will consider non-  
1363 binding mediation and other alternative dispute resolution processes and, if a dispute  
1364 resolution process is agreed upon, will make good faith efforts to resolve all remaining  
1365 issues through that process.

1366 **24. Availability of Funds**

1367 Nothing in this CCAA will be construed by any party to require the obligation, appropriation, or  
1368 expenditure of any funds from the U.S. Treasury. The FWS will not be required under this  
1369 CCAA to expend any federal agency's appropriated funds unless and until an authorized official  
1370 of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

1371 **25. Relationship to Other Agreements**

1372 The Oregon Cattlemen's Association, BLM, and FWS have signed a Candidate Conservation  
1373 Agreement (CCA) for certain public lands. Most livestock operations in Crook and Deschutes  
1374 Counties are dependent upon public land livestock grazing for much or portions of their livestock  
1375 grazing operations. So, it is critical that both plans are complementary and the goal is for  
1376 enrolled landowners to manage for sage-grouse across their private lands and onto their federal  
1377 allotments. While coordination between the two documents is essential, federal and private lands  
1378 are innately different, so some differences exist.

1379  
1380 On May 21, 2014, the Harney SWCD and FWS signed a sage-grouse CCAA for private  
1381 rangelands in Harney County. In addition to the Harney CCAA and this CCAA, CCAA's are  
1382 being developed by Lake SWCD, Malheur SWCD and Baker SWCD's These CCAAs will be  
1383 very similar to the Harney SWCD sage-grouse CCAA. These CCAAs and CCA efforts in  
1384 Oregon provide a unique opportunity for landscape-scale conservation of sage-grouse habitat in  
1385 Oregon.

1386 **26. No Third-Party Beneficiaries**

1387 This programmatic CCAA and any subsequent SSPs/CIs signed under the programmatic CCAA  
1388 do not create any new right or interest in any member of the public as a third-party beneficiary,  
1389 nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or  
1390 damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities  
1391 of the landowner, SWCD, and FWS to this CCAA with respect to third parties shall remain as  
1392 imposed under existing law.

1393 **27. Reports**

1394 Annual summary reports will be delivered to the person listed below:  
1395 Field Supervisor, Bend Field Office  
1396 U.S. Fish and Wildlife Service  
1397 63095 Deschutes Market Road  
1398 Bend, OR 97701

1399 **28. Notices**

1400 This programmatic CCAA was written with the participation of the Steering Committee (for list  
1401 of parties, see p. 6). It is because of the collaborative efforts of those parties that this CCAA was  
1402 completed.

1403  
1404 IN WITNESS WHEREOF, THE SIGNING PARTIES HERE TO have, as of the last signature  
1405 date below, executed this programmatic Candidate Conservation Agreement with Assurances to  
1406 be in effect as of the date of the last signatory to sign this agreement.

1407  
1408  
1409  
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1418

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Board Chair  
Crook Soil and Water Conservation District

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Date

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Deputy Regional Director, Region 1  
U. S. Fish and Wildlife Service

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Date

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1557 **APPENDIX A – Conservation Measures**

1558 Sage-Grouse Conservation Measures: All Conservation Measures (CMs) listed in this appendix  
1559 and any CMs developed for a Site Specific Plan (SSP) will maintain or improve sage-grouse  
1560 habitat, while contributing to the economic stability and sustainability of the individual  
1561 properties/ranches and of Crook and Deschutes Counties. The SSP developed for an individual  
1562 property will identify threats to sage-grouse that exist on that property. This list implies possible  
1563 conservation measures to be applied to address threats and will serve as a menu of options for all  
1564 parties to use when developing SSPs. Each identified threat will be addressed with one or more  
1565 CM from the list below and additionally, **conservation measures not identified on this list may**  
1566 **be developed with landowner agreement and with the approval of FWS.**  
1567

1568 This list of threats to sage-grouse has been subdivided into habitat-related and species-specific  
1569 threats. The conservation objectives for habitat-related threats are listed in the programmatic  
1570 CCAA under *Section 6. Inventory and Monitoring Protocols* in Figures 2-4, applicable  
1571 objectives from these figures will be included in each SSP. The conservation objectives for  
1572 species-specific threats are listed in this appendix, below the specific threat.  
1573

1574 These conservation measures have been developed, some specific and some general, based on  
1575 the best available knowledge, science, and experience.  
1576

1577 **Habitat-Related Threats**

1579 **Threat: Fragmentation of the landscape** -Fragmentation of the landscape causes birds to leave  
1580 leks or abandon nests or important habitats (i.e., direct impact to nests and brooding hens),  
1581 resulting in decreased reproductive success.

1582 **Conservation Measures:**

- 1583 **1. All enrolled landowners must agree to: *Maintain contiguous habitat by avoiding***  
1584 ***further fragmentation. The objective for this required CM is for no net loss in 1)***  
1585 ***habitat quantity (as measured in acres) and 2) habitat quality (as determined by the***  
1586 ***ecological state).*** The baseline determination of habitat quality and quantity will be  
1587 completed during the baseline inventory and will serve as a reference point in meeting the  
1588 objective for CM 1. Losses in sage-grouse habitat quantity may be offset by increases in  
1589 sage-grouse habitat quality and vice versa, as long as the action avoids further  
1590 fragmentation (consistent with *Section 10. Covered Activities* Development subsection).  
1591 **2.** Consolidate new roads, buildings, and power lines.  
1592 **3.** Consider entering into conservation easements.  
1593 **4.** Convert generator or windmill powered pumps (noise) to solar, when economically  
1594 feasible.  
1595 **5.** Consider removing vertical structures (i.e. raptor perches) by burying new and existing  
1596 power lines, and where possible cooperate with local utilities to retrofit powerlines to  
1597 reduce raptor perches, when economically feasible.  
1598

1599 **Threat: Wildfire**-Wildfires can remove long-lived species such as sagebrush, reducing sage-  
1600 grouse habitat quality and quantity.

1601 **Conservation Measures:**

- 1602 **6.** Identify sage-grouse habitat as a high priority for protection and prevention in the SSP.

- 1603 Map lands as PPH and PGH. The following proactive prevention measures may apply:  
1604 a. In years of high fuel load accumulation, strategically utilize livestock grazing to  
1605 reduce fuel loads while maintaining suitable habitat for sage-grouse, consistent  
1606 with the livestock management practices section.  
1607 b. Design, establish, and maintain fire breaks or green-stripping along key existing  
1608 roadways to provide a fuel break and safe zone from which to fight fire. Strips  
1609 would be no larger than 50ft on either side of a road, which will provide foraging  
1610 habitat for sage-grouse and provide >100ft of fuel breaks. Within fuel breaks  
1611 where annual grasses are prevalent, plant aggressive, fire-resistant perennial  
1612 species to stabilize the site, with the long term objective of re-establishing native  
1613 species.  
1614 c. In a SSP, identify key roads on a map that could serve as a fire break to be  
1615 widened approximately 50ft on either side of the road, when wildfire actively  
1616 threatens enrolled lands. These maps will be available to the fire personnel.  
1617 d. Attain wildfire training certification. Where possible join or assist Rangeland Fire  
1618 Protection Associations (RFPA) and state and federal fire officials (at  
1619 landowner's discretion) with initial attack to protect existing or potential sage-  
1620 grouse habitat.<sup>9</sup>  
1621 7. Use direct attack tactics when it is safe and effective to reduce the amount of burned  
1622 habitat. Direct attack supported by any available mechanized equipment (i.e. bulldozer,  
1623 tractor w/blade, aerial drops) is the most efficient at reducing the overall size of  
1624 rangeland fires thereby keeping habitat intact. It is most critical during initial attack  
1625 before the fire gains momentum.  
1626 8. Retain unburned areas (including interior islands and patches between roads and the fire  
1627 perimeter) of sage-grouse habitat unless there is a compelling safety, resource protection,  
1628 or control objectives at risk.

1629  
1630 **Threat: Loss of sagebrush habitat due to lack of fire and associated conifer encroachment:**

1631 High elevation plant communities are dependent upon periodic fire to maintain healthy  
1632 functional plant communities. The use of prescribed fire in low elevation sagebrush communities  
1633 can result in a reduction of sage-grouse habitat in quality and quantity. Work with agency  
1634 specialists to determine need for treatment and, if needed, the appropriate method (e.g.,  
1635 chainsaw, heavy machinery, chemical, prescribed fire, or a combination). Choose methods that  
1636 will minimize or prevent soil disturbance or sterilization and methods least likely to result in  
1637 weed invasions.

1638 **Conservation Measures:**

- 1639 9. Utilize prescribed fire treatments which will generally occur at higher elevations, where  
1640 there is little risk of invasive plant establishment post-treatment. Treatments will be  
1641 conducted so there is a mosaic of sagebrush and burned areas to provide a seed source for  
1642 sagebrush and native grass and forb regeneration.  
1643 10. Remove encroaching juniper from sagebrush communities through cutting of juniper and  
1644 burning piled trees and limbs ("jack-pot burning", which involves returning to juniper  
1645 piles when the ground is frozen or saturated to conduct burning), or other methods that

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<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.

1646 are mutually agreed upon by the SWCD, landowner, and FWS. Ensure timing of these  
1647 burns does not interfere with lekking or other known seasonal movements of sage-grouse  
1648 (see “Threat: Juniper/Conifer Expansion” for full specifications).

1649 **11.** Limit use of prescribed fires at lower elevations. Prescribed fire at these elevations will  
1650 only be used when there are no other options, or a pre-burn evaluation has determined the  
1651 risk of cheatgrass and other invasive weeds is minimal, and there is low risk of reducing  
1652 critical sage-grouse habitat features.

1653

1654 **Threat: Juniper/Conifer Expansion** –Juniper/conifer encroachment can lead to a reduction of  
1655 sage-grouse habitat, use, or abandonment. Slash from mechanical or chemical removals may  
1656 continue to compromise habitat use.

1657 **Conservation Measures:**

1658 **12.** Remove encroaching juniper/conifer within existing riparian and transitional zones.

1659 **13.** Treat/remove encroaching juniper/conifer in sage-grouse habitats.

1660 **14.** For Phase I, juniper felling and leaving may be effective. Limb any branches >4 ft in  
1661 height on a felled tree (i.e., lop and scatter).

1662 **15.** For Phase I and Phase II, where jackpot burning is the most appropriate method of slash  
1663 removal, consider a spring burn (Mar-Apr) when soils tend to be frozen but the moisture  
1664 content of the felled trees is low. Ensure timing of these actions does not interfere with  
1665 lekking or other known seasonal movements of sage-grouse.

1666 **16.** Conduct broadcast burns of juniper-invaded sagebrush, judiciously taking into  
1667 consideration the spatial and habitat needs of sage-grouse relative to the size of the burn.

1668 **17.** Seed juniper treatment when current perennial grass community is in poor condition (<2  
1669 plants /10ft<sup>2</sup>, <1 plant/10ft<sup>2</sup> on dry and wet sites) or if exotic annual grasses are present.  
1670 Broadcast seeding prior to soil disturbance or under slash may increase the chances of  
1671 establishment.

1672 **18.** Rest treated area from grazing following treatment. Length of rest will depend on  
1673 understory composition at time of treatment and response of desirable vegetation  
1674 following treatment. Set quantifiable objectives for post-treatment vegetation recovery  
1675 based on pre-treatment monitoring data, return livestock grazing once objectives have  
1676 been met.

1677

1678 **Threat: Unmanaged and/or Improper Grazing**-Livestock, humans, and vehicles can  
1679 physically disturb and cause birds to leave leks or abandon nests (i.e., direct impact to nests and  
1680 brooding hens) resulting in decreased reproductive success. However, appropriate livestock  
1681 grazing regimes (generally light to moderate utilization 25-50% (BLM Tech Reference 17-34-3)  
1682 in nesting habitat) are compatible with sage-grouse habitat needs. The goal of grazing  
1683 management is to maintain the desired ecological state or move the plant community toward the  
1684 desired state. Adaptive management will be necessary to adjust levels and season of livestock  
1685 grazing with a forage supply that is ever changing in response to varying growing conditions for  
1686 vegetation (e.g., interannual climate variation) and habitat conditions. Annual monitoring  
1687 information will be used by the landowner to make adjustments to grazing management to ensure  
1688 a desirable vegetation trend is maintained (see *Section 6. Inventory and Monitoring Protocols*).

1689

1690 **Conservation Measures:**

1691 **19.** Avoid placing salt, water, or mineral supplements within 0.6 miles of the perimeter of an

- 1692 occupied lek.
- 1693 **20.** Reduce disruptive activities one hour after sunset to two hours after sunrise from March 1
- 1694 through June 30 within 0.6 miles of the perimeter of occupied leks, unless brief
- 1695 occupancy is essential for routine ranch activities (e.g., herding or trailing livestock into
- 1696 or out of an area at the beginning or end of the grazing season). Examples of disruptive
- 1697 activities may include noise, human foot or vehicle traffic, or other human presence.
- 1698 **21.** Reduce off-trail vehicular travel in nesting habitat from March 1 through June 30 unless
- 1699 travel is essential for routine ranch activities (including but not limited to: repairing
- 1700 fence, “doctoring” livestock, finding lost livestock, and irrigation activities).
- 1701 **22.** Develop and/or use a written grazing management plan to maintain or enhance the
- 1702 existing plant community to ensure a community suitable as sage-grouse habitat. If
- 1703 available, use approved ecological site descriptions to set realistic goals for the plant
- 1704 community. (Example: NRCS Oregon 2007; Conservation Practice Standard – Prescribed
- 1705 Grazing Code 528).
- 1706 **23.** Change salting and watering locations to improve livestock distribution and maintain or
- 1707 enhance sage-grouse habitat quality.
- 1708 **24.** Avoid alteration of winter habitat with winter feeding in occupied habitat unless it is part
- 1709 of a plan to improve ecological health or to create mosaics in dense sagebrush stands that
- 1710 are needed for optimum sage-grouse habitat, or is needed for emergency care of
- 1711 livestock.
- 1712 **25.** Develop additional water sources for wildlife and livestock, to reduce impacts to riparian,
- 1713 wetland, playas, and wet meadow areas important to sage-grouse.
- 1714 **26.** Spring developments should be constructed or modified to maintain their free-flowing
- 1715 and wet meadow characteristics.
- 1716 **27.** Ensure wildlife accessibility to water and install escape ramps in all new and existing
- 1717 water troughs.
- 1718 **28.** Avoid construction of new livestock facilities (livestock troughs, fences, corrals, handling
- 1719 facilities, “dusting bags,” etc.) at least 0.6 miles from leks or other important areas of
- 1720 sage-grouse habitat (i.e., known wintering and brood rearing areas) to avoid
- 1721 concentration of livestock, collision hazards to flying birds, or avian predator perches.
- 1722 **29.** Refer to the model by Bryan Stevens for identification of areas that may contain fences
- 1723 that pose the highest threat to sage-grouse. In high risk areas, remove unnecessary fences
- 1724 and relocate or mark needed fences with anti-strike markers or other agreed upon visual
- 1725 markers (Stevens 2011).
- 1726 **30.** Manage grazing in riparian areas to ensure bank stability, survival of deep-rooted riparian
- 1727 vegetation, floodplain connectivity, and stream functionality.

1728

1729 **Threat: Exotic Invasive Vegetation** -Establishment of plant communities that do not provide

1730 suitable habitat (e.g., introductions and monocultures of non-native, invasive plants) are reducing

1731 sage-grouse habitat quality and quantity. Prevention and early detection is needed. Invasive

1732 weeds continue to expand from borders of large infestations. Many sagebrush-steppe

1733 communities have crossed a threshold after which they are no longer recoverable by control

1734 methods.

1735 **Conservation Measures:**

- 1736 **31.** Enrollees will work with county weed experts and other experts to ensure they can
- 1737 identify the invasives that are a threat to their land, to establish weed prevention areas,

- 1738 and to explore available assistance to implement treatments.
- 1739 **32.** Identify and implement treatments for enrolled lands that will promote an intact and
- 1740 functioning sagebrush landscape
- 1741 **33.** Systematic and strategic detection surveys should be developed and conducted in a
- 1742 manner maximizing the likelihood of finding new patches before they expand. Once
- 1743 patches are located, seed production should be stopped and the weeds should be
- 1744 eradicated. The most effective tools for eradication of many weeds are herbicides and
- 1745 possibly bio-controls.
- 1746 **34.** When using herbicides, all best management practices and only approved herbicides
- 1747 listed in Appendix E will be used on enrolled lands for coverage under the 10(a)(1)(A)
- 1748 permit associated with this agreement.
- 1749 **35.** Containment programs for large infestations should be maintained. Border spraying
- 1750 infestations, planting aggressive (even appropriate non-native species) plants as a barrier,
- 1751 establishing seed feeding biological control agents and targeted grazing to minimize seed
- 1752 production are all methods that could help contain large infestations.
- 1753 **36.** Areas with an adequate understory (> 20% composition) of desired vegetation should be
- 1754 identified and prioritized as high for control since they have a higher likelihood of
- 1755 successful rehabilitation than areas where desired species are completely displaced.
- 1756 **37.** Include in the SSP rehabilitation for areas with inadequate understory (< 20%
- 1757 composition) of desired vegetation. The species of choice should include perennial
- 1758 species that are competitive with invasive weeds. The goal should be to maximize niche
- 1759 occupation with desired species.
- 1760 **38.** Report any new annual grass (e.g., cheatgrass, medusahead) infestations and take
- 1761 immediate action to eradicate when practical and economically feasible. Site plan should
- 1762 describe whether there is a commitment to reporting incidental sightings, or whether
- 1763 there will be specifically planned surveys.
- 1764 **39.** Non-native perennial species such as crested wheatgrass may be seeded to stabilize and
- 1765 prevent further invasion of cheatgrass and medusahead. These species should be used
- 1766 with the intent to stabilize the plant community and allow for long term recovery of
- 1767 sagebrush and other native species.
- 1768 **40.** Aggressively treat noxious weeds and other invasive plants where they threaten quality of
- 1769 sage-grouse habitat and apply best management practices to prevent infestations from
- 1770 occurring.
- 1771 **41.** Use certified weed-free seed mixes and mulches.
- 1772 **42.** Manage livestock use on newly seeded/planted rangeland, allow adequate rest, generally
- 1773 a minimum of two growing seasons. Set quantifiable objectives for post-treatment
- 1774 vegetation recovery; return livestock grazing once objectives have been met.
- 1775

1776 **Threat: Vegetation Treatments** -Vegetation treatments (e.g., chemical, mechanical) can result

1777 in a reduction of sage-grouse habitat quality and quantity.

1778 **Conservation Measures:**

- 1779 **43.** Use brush beating in mosaic patterns as a tool to increase production of understory
- 1780 species and to increase diversity to benefit sage-grouse habitat. Current
- 1781 recommendations suggest brush beating (or other appropriate treatment) in strips (or a
- 1782 mosaic pattern) 12 to 50ft wide (with untreated interspaces 3 times the width of the
- 1783 treated strips) in areas with relatively high shrub cover (>25%) without an understory of

- 1784 annual grasses to improve herbaceous understory for brood rearing habitats, where such  
1785 habitats may be limiting. Also, take into account aged sagebrush stands with minimal  
1786 recruitment and high shrub decadence. Such treatments should not be conducted in  
1787 known winter habitat (Dahlgren et al. 2006).
- 1788 **44.** Evaluate the role of existing seedings that are currently composed of primarily introduced  
1789 perennial grasses in and adjacent to priority sage-grouse habitats to determine if they  
1790 should be restored to sagebrush or habitat of higher quality for sage-grouse. Active  
1791 restoration success has been extremely limited using current technology, where it is  
1792 economically and logistically feasible, consider transplanting sagebrush or using  
1793 sagebrush plugs, if not economically and/or logistically feasible, allow sagebrush  
1794 recruitment into perennial herbaceous dominated communities (i.e., don't mow sagebrush  
1795 that is reestablishing in crested seedings).
- 1796 **45.** Any vegetation treatments conducted in plant communities dominated by exotic annual  
1797 species will be accompanied by rehabilitation (and if necessary, reseeding) to achieve  
1798 reestablishment of perennial vegetation and allow for long term recovery of sagebrush  
1799 and other native species.
- 1800 **46.** To minimize disturbance to sage-grouse populations, do not conduct broadcast  
1801 applications of herbicides during nesting and early-brood rearing periods when sage-  
1802 grouse are present (March 1 – June 30, at a minimum), unless this timeframe or target  
1803 plant development stage is optimal for herbicide effectiveness.
- 1804 **47.** The use of herbicides (primarily tebuthiuron) at low (0.1–0.3 kg ai/ha) application rates  
1805 may effectively thin sagebrush cover while increasing herbaceous plant production  
1806 (Olson and Whitson 2002). These treatments should be applied in strips or mosaic  
1807 patterns. Site conditions must be critically evaluated prior to treatment (including fire  
1808 rehabilitation, new seedings, and seeding renovations) to increase likelihood of the  
1809 desired vegetation response.
- 1810 **48.** Agency specialists will determine how sagebrush treatments are part of a larger landscape  
1811 plan. If sagebrush treatment is warranted after a plan is developed with agency  
1812 specialists, utilize a mosaic pattern of treatment (as described in CM 43) rather than a  
1813 large uniform block.

1814  
1815 **Threat: Drought-** When rangeland plants are deprived of precipitation, it affects the plant's  
1816 growth cycle, volume of growth, and fruition. When drought conditions exist, annual monitoring  
1817 will be used to determine site specific recommendations. Drought is site specific and is typically  
1818 considered to occur when two growing seasons of precipitation are below the long term average,  
1819 affecting plant life cycles as described above. Prolonged drought is when the conditions  
1820 described above persist for three or more growing seasons. Prolonged drought can harm plants  
1821 important to sage-grouse reducing sage-grouse habitat quality and quantity (*see Section 14.*  
1822 *Changed Circumstances* - drought subsection - for more information on determination of drought  
1823 conditions).

1824 **Conservation Measures:**

- 1825 **49.** Work with agency specialists to incorporate a drought management strategy for grazing  
1826 which considers the needs of sage-grouse.
- 1827 **50.** Adjust livestock use (season of use, timing, intensity, and/or duration) to reduce the  
1828 impact on perennial herbaceous cover, plant diversity, and plant vigor to enable enrolled  
1829 lands to meet the seasonal habitat needs for sage-grouse identified for the site.

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

**Conservation Measure:**

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

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

**Conservation Measure:**

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

**Species-Specific Threats**

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

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

**Conservation Measure:**

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

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

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

**Conservation Measures:**

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

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

1876 WNV exposure.

1877 **Conservation Objective:** Reduce potential for direct mortality and/or disease transmission.

1878 **Conservation Measures:**

1879     **56.** Minimize unnecessary standing water that could be used as mosquito breeding grounds

1880     within sage-grouse habitat. Where new pond construction or water developments are

1881     proposed for rangeland management or habitat enhancement purposes, use innovative

1882     designs, when possible, to minimize the amount of mosquito habitat that could be

1883     created. Work with agency biologists on optimal locations for new water developments.

1884

1885 **Threat: Wild Horses and Burros -** Concentrated or overabundant wild horse and/or burro

1886     populations can reduce habitat quality and quantity.

1887 **Conservation Objective:** Reduce impacts to sage-grouse habitat.

1888 **Conservation Measures:**

1889     **57.** Document and report habitat damage on enrolled lands from wild horses and/or burros.

1890     **58.** On enrolled lands where base inventory, annual, or long term monitoring indicate wild

1891     horses may affect sage-grouse habitat, ensure all findings (as requested by the landowner)

1892     are reported to BLM. When habitat monitoring indicates negative impacts from wild

1893     horses to enrolled private lands, SWCD, FWS, and cooperators will provide written

1894     recommendations for the landowner to submit to BLM recommending gathering of wild

1895     horses and/or burros.

1896     **59.** To maintain and/or improve sage-grouse habitat on enrolled lands with wild horses,

1897     SWCD, FWS, and CCAA cooperators will submit recommendations in writing to BLM

1898     to manage wild horse and/or burro numbers for long term management at or below the

1899     appropriate management level.

1900     **60.** When habitat monitoring indicates damage from wild horses and/or burros on enrolled

1901     lands, upon the landowner's request SWCD, FWS, and CCAA cooperators will submit

1902     written recommendations to the BLM to relocate wild horses from affected private land.

1903

1904 **Threat: Insecticide -** Grasshoppers and Mormon crickets periodically have infestations which

1905     cause significant long term damage to sagebrush. The use of insecticides is not known to pose

1906     range-wide threats to sage-grouse. However, insecticides have been documented as causing

1907     mortality to sage-grouse. Some insecticides could have detrimental effects to individual sage-

1908     grouse through direct contact, either by consumption of insects exposed to certain insecticides or

1909     by reduction of insect populations during times when insects are a crucial part of the birds' diets

1910     USFWS 2010.

1911 **Conservation Objective:** Maintain important sage-grouse forage base and avoid or minimize

1912     direct mortality to sage-grouse.

1913 **Conservation Measures:**

1914     **61.** If possible, contract with Animal and Plant Health Inspection Service (APHIS) and/or

1915     Oregon Department of Agriculture (ODA) for all insecticide treatments.

1916     **62.** Consult with SWCD, ODA, and APHIS. Avoid carbaryl/malathion; use diflubenzuron

1917     (Dimilin) if at all possible.

1918     **63.** Work with agency specialists to plan and design control efforts to avoid harming sage-

1919     grouse and non-target species.

1920     **64.** Avoid spraying treatment areas in May and June (or as appropriate to local

1921     circumstances) to provide insect availability for early development of sage-grouse chicks.

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1927

- 65.** Use approved chemicals with the lowest toxicity to sage-grouse that still provide effective control.
- 66.** When feasible and as outlined by APHIS or ODA, use Reduced Area/Agent Treatments (RAAT) to control grasshoppers, which focuses control efforts along strips to avoid spraying entire fields.

1928 **APPENDIX B – Site Specific Plan/Certificate of Inclusion**

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

**A. Legal Conveyance of Assurances**

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

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

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

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

1971 landowner, SWCD and FWS. If a changed circumstance(s) occurs the SWCD will notify the  
1972 FWS of the enrolled lands affected, the impact of the changed circumstance(s), and the  
1973 CCCM(S) that will be implemented to address the changed circumstance(s).  
1974

1975 A list of CCCMs is located in *Section 14. Changed Circumstances* of the programmatic CCAA.  
1976 This list provides possible conservation measures to address threats created by a changed  
1977 circumstance(s). Conservation Measures not identified on this list may be developed with  
1978 landowner agreement and with approval of FWS.  
1979

1980 **The only situation where modification of conservation measures can be required by the**  
1981 **FWS is described in *Section 16. Unforeseen* Circumstances of the programmatic CCAA. To**  
1982 respond to unforeseen circumstances, the FWS may require modified or additional conservation  
1983 measures by the landowner, but only if such measures maintain the original terms of the  
1984 CCAA/SSP to the maximum extent possible. The FWS will consider whether failure to adopt  
1985 additional conservation measures would appreciably reduce the likelihood of survival and  
1986 recovery of sage-grouse in the wild. Additional conservation measures will not involve the  
1987 commitment of additional land, water, or landowner funds, or additional restrictions on the  
1988 use of land, water, or other natural resources available for development or use under the  
1989 original terms of the CCAA without the consent of the landowner, provided the SSP/CI is  
1990 being properly implemented.  
1991

## 1992 **B. Parties**

1993 This Site Specific Plan (SSP) and Certificate of Inclusion (CI) for sage-grouse conservation,  
1994 effective and binding on the date of the last signature below is between the Crook Soil and Water  
1995 Conservation District and Private Landowner.  
1996

## 1997 **C. Responsibilities**

### 1998 ***Landowners will:***

- 1999 • Assist in the development of mutually agreeable SSPs in cooperation with the SWCD and
- 2000 FWS and cosign the SSP/CI document upon receiving a Letter of Concurrence from FWS
- 2001 • Implement all agreed upon CMs in their SSP
- 2002 • The property owner agrees to allow SWCD and FWS employees or its agents, with
- 2003 reasonable prior notice (at least 48 hours) to enter the enrolled properties to complete
- 2004 agreed upon activities necessary to implement the SSP
- 2005 • Continue current management practices that conserve sage-grouse and its habitats as
- 2006 identified in the enrollment process
- 2007 • Avoid impacts to populations and individual sage-grouse present on their enrolled lands
- 2008 consistent with this SSP
- 2009 • Record dates, locations, and numbers of sage-grouse observed on their enrolled lands to
- 2010 be included in the annual report
- 2011 • Record new observations of noxious weeds that they incidentally find
- 2012 • Report observed mortalities of sage-grouse to the SWCD within 48 hours
- 2013 • Cooperate and assist with annual and long term monitoring activities and other reporting
- 2014 requirements identified in the SSP  
2015  
2016

- 2017 ***The SWCD will:***
- 2018 • Conduct public outreach and education to encourage enrollment of landowners in the
- 2019 CCAA through Site Specific Plans (SSP)/Certificates of Inclusion (CIs)
- 2020 • Enroll landowners according to the steps outlined in *Section 3: Application and*
- 2021 *Enrollment Process*
- 2022 • Use the mutually agreed upon tracking system to protect landowner privacy
- 2023 • Prepare and review SSPs/CIs for accuracy and cosign the SSP/CI document upon
- 2024 receiving a Letter of Concurrence from FWS
- 2025 • Assist in the implementation of conservation measures, monitoring, or other measures if
- 2026 agreed upon during the development of the SSP by the landowner, SWCD, and FWS
- 2027 • Ensure terms and conditions included in the SSPs are being implemented as agreed upon
- 2028 • Collect and evaluate monitoring data to determine if CMs are providing the desired
- 2029 habitat benefit and provide a report of monitoring results to the landowner and copies of
- 2030 summary reports to FWS
- 2031 • Provide technical assistance to aid enrolled landowners in implementing the CMs
- 2032 • Work with enrolled landowners and other agencies (e.g., OSU Extension, NRCS) to
- 2033 facilitate appropriate rangeland monitoring and/or training
- 2034 • Provide support and assist in obtaining funding from other sources for the
- 2035 implementation of CMs
- 2036 • Monitor and report projects (e.g. implementation of CMs) in order to determine success
- 2037 and adaptations needed
- 2038 • Immediately report to FWS and ODFW any observed or reported mortalities of sage-
- 2039 grouse
- 2040 • Meet annually with FWS to present annual and trend monitoring information
- 2041 • Protect, to the maximum extent available under federal, state, and local laws, against the
- 2042 release or disclosure of all confidential personal and/or commercial information provided
- 2043 by enrolled landowners and collected, gathered, prepared, organized, summarized, stored,
- 2044 and distributed for the purposes of developing and implementing this CCAA
- 2045 • Provide notice to enrolled landowners when a request for public records concerning this
- 2046 CCAA is made, and allow the enrolled landowner to prepare a notification requesting that
- 2047 any confidential personal and/or commercial information be withheld

2048

2049 ***The U.S. Fish and Wildlife Service will:***

- 2050 • Provide assistance in coordinating development and implementation of this CCAA
- 2051 • Review each SSP<sup>11</sup> and provide a Letter of Concurrence within 60 days if all issuance
- 2052 criteria are met for all SSPs completed under the EOS permit
- 2053 • Provide technical assistance to aid the landowners in implementing the CMs
- 2054 • Review monitoring data for consistency with CCAA objectives to determine if
- 2055 conservation measures are providing the desired benefit to sage-grouse
- 2056 • Serve as an advisor, providing expertise on the conservation of sage-grouse
- 2057 • Assist in the implementation of conservation measures, monitoring, or other measures if
- 2058 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 Lake County, including site visits, baseline inventory, analysis or other aspects of plan development.

- 2059 • Provide FWS funding, to the extent funding is available, consistent with *Section 23.*  
2060 *Availability of Funds* of the programmatic CCAA, to support implementation of this  
2061 CCAA and associated SSPs/CIs
- 2062 • Provide support and assist in obtaining funding from other sources for the  
2063 implementation of CMs
- 2064 • Conduct outreach and public education efforts to promote the conservation of sage-  
2065 grouse
- 2066 • Immediately report to ODFW any observed or reported mortalities of sage-grouse
- 2067 • Protect, to the maximum extent permissible under federal laws, against the disclosure of  
2068 all confidential personal and/or commercial information provided by enrolled landowners  
2069 and collected, gathered, prepared, organized, summarized, stored, and distributed for the  
2070 purposes of developing and implementing this CCAA
- 2071 • Provide notice to SWCD when a Freedom of Information Act (FOIA) request for records  
2072 concerning this CCAA is made, and allow the SWCD to prepare a notification requesting  
2073 that any confidential personal and/or commercial information be withheld  
2074

2075 **D. Property Owner**

2076 [Insert name and if appropriate, include Leasee’s signature after review of lease agreement and  
2077 specific power of attorney documentation). A tract # will be assigned for file retention.]  
2078

2079 **E. Legal Description of the Enrolled Property**

2080 [Insert legal description of the land that is to be included under a SSP/CI and map of enrolled  
2081 lands. A tract # will be assigned for file retention.]  
2082

2083 **F. General Description of the Enrolled Property**

2084 [Include acreage of parcel(s), general location and surrounding ownership, distance from nearest  
2085 town, elevations and land forms, native and converted habitat types, observed use by sage-  
2086 grouse, lek locations and/or other important sage-grouse habitat. Include general habitat type  
2087 map or include on topographic map with property boundaries. Also include overview photos of  
2088 property.]  
2089

2090 **G. Covered Activities and Level of Take**

2091 Based on the FWS’ analysis in the Conference Opinion for the programmatic CCAA, incidental  
2092 take is expected to occur from rangeland treatment, livestock management, recreation, farm  
2093 operations, and development (see *Section 12. Covered Activities and Estimated Levels of Take,*  
2094 *Section 14. Changed Circumstances,* and Appendix A. Conservation Measures of the  
2095 programmatic CCAA, or as specifically identified herein). All other activities associated with the  
2096 operations of [insert Private Landowner name or tract #] are either not anticipated to adversely  
2097 affect sage-grouse on covered lands, or will not have adverse effects that rise to the level of  
2098 incidental take as defined by the FWS.  
2099

2100 The expected level of take of sage-grouse will be minimized and avoided through the  
2101 implementation of CMs and the actual take will be identified to the extent possible through the  
2102 monitoring methods associated with the SSP. Individual landowners with SSPs are not  
2103 specifically allocated a certain amount of take. Any incidental take reported by [insert Private  
2104 Landowner or tract #] will be considered in the cumulative amount of take permitted in the area

2105 covered under the programmatic CCAA.

2106

2107 **H. Historic Property Information**

2108 [Insert fire history, ownership, grazing history, drought, floods (5-10 years or additional if large  
2109 scale event)]

2110

2111 **I. Current Property Uses and Management Practices**

2112 [Describe existing structures on the enrolled property (e.g. houses, barns, fences, power lines).

2113 Describe all routine and management activities to include current grazing, farming, haying, and  
2114 ranching practices.]

2115 **J. Habitat Inventory, Assessment, and Monitoring**

2116 *Site Selection Protocol*

2117 1. Background information-Stratifying enrolled lands into inventory and monitoring units  
2118 will require gathering any of the following background information that exists for each  
2119 property/properties for which a site specific plan is being considered: aerial photographs,  
2120 satellite imagery, written and oral histories, disturbance history (e.g., burn maps),  
2121 management history, property maps, plant species lists, ecological sites and site  
2122 descriptions, and soil maps.

2123

2124 2. Stratify by habitat suitability using existing data-The enrolled property will first be  
2125 stratified into areas of existing suitable (i.e., low elevation ecological states A, B, and D;  
2126 high elevation ecological states A and B; lotic riparian ecological states characterized by  
2127 consistent access to floodplain) or potentially suitable sage-grouse habitat (i.e. low  
2128 elevation ecological state C; high elevation ecological states C, D, and E; lotic riparian  
2129 ecological states without consistent access to floodplain) and areas of persistently  
2130 unsuitable habitat (e.g., historically non-habitat or permanently converted habitat –  
2131 infrastructure, agriculture, residential, etc.) (see Figure 1).

2132

2133 3. On-site documentation of upland ecological states -The upland property will then be  
2134 stratified by management unit (typically by pasture). Each upland management unit will  
2135 then be stratified into the two primary ecological types (i.e., high elevation sagebrush  
2136 rangeland and low elevation sagebrush rangeland) using a combination of existing  
2137 knowledge and/or data, ecological site descriptions, GIS techniques, and field  
2138 reconnaissance. Ecological types within management units will then be stratified by the  
2139 ecological states described in their respective state and transition model. Preliminary  
2140 ecological state strata will be determined using GIS data. The resultant preliminary strata  
2141 will then be used to direct ground truthing and associated habitat inventory efforts;  
2142 ground truthing of preliminary ecological state strata will be accomplished following  
2143 procedures outlined in the Upland Ecological State Documentation Form (Appendix D-  
2144 4). The ocular assessment outline located in Appendix D-4 will provide the basis for  
2145 selecting representative areas for each stratum, where quantitative data will be collected  
2146 and serve as permanent habitat monitoring sites for the management unit (long term  
2147 (trend) monitoring).

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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.

2195  
2196 **Annual Monitoring**  
2197 Sagebrush rangelands are dynamic systems that constantly change in response to fire, wildlife,  
2198 climate, insect infestations, weed invasions, and natural vegetation succession; not just to inputs  
2199 from management. Annual monitoring focuses on identifying management inputs and factors  
2200 external to the management program that affect the responses of sagebrush rangeland over time.  
2201 These are the factors that influence the change documented with trend monitoring (described  
2202 above) and may include growing conditions for plants (e.g., precipitation, temperature trends,  
2203 drought, etc.), livestock and wildlife numbers, utilization patterns of livestock and wildlife,  
2204 insect and rodent infestations, recreational use, trespass livestock, and timing, duration, and  
2205 frequency of livestock grazing. Suggested information and a data form for conducting annual  
2206 monitoring are shown in Appendix D-3. In addition to the information in the “Annual Grazing  
2207 and Habitat Summary”, other potentially important annual records would include pasture-level  
2208 grazing utilization and distribution, actual use, sage-grouse observations, or any other factors that  
2209 could have affected the growing conditions for vegetation not identified on the form.

2210  
2211 The property owner agrees to allow SWCD and FWS employees or its agents, with reasonable  
2212 prior notice (at least 48 hours) to enter the enrolled properties to complete agreed upon activities  
2213 necessary to implement the SSP.

2214  
2215 The landowner will report incidental take of individual sage-grouse to the SWCD who will  
2216 provide the information to the FWS and ODFW.

2217  
2218 **K. Threats Assessment, Conservation Objectives, Conservation Measures, Inventory and**  
2219 **Monitoring**

2220 This section will identify threats to sage-grouse habitat. This will include a discussion of haying  
2221 and farming practices and measures to minimize any possible hazards. Identified future plans for  
2222 the enrolled property will also be documented in this section. Conservation Measures for the  
2223 enrolled property will be identified with quantifiable conservation objectives and monitoring  
2224 outlined to measure progress for each specific conservation measure.

2225  
2226 According to the FWS 2010 12-month Finding (75 FR 13910), the primary threat to sage-grouse  
2227 is habitat fragmentation. Therefore, in order for this CCAA to address the conservation needs of  
2228 the sage-grouse, this threat must be addressed by all enrolled landowners on the enrolled portion  
2229 of their property through the incorporation of CM 1 into this SSP: *Maintain contiguous habitat*  
2230 *by avoiding further fragmentation*. The objective of this required CM is for no net loss in 1)  
2231 habitat quantity (as measured in acres) and 2) habitat quality (as determined by the ecological  
2232 state). The baseline determination of habitat quality and quantity will be completed during the  
2233 baseline inventory and will serve as a reference point in meeting the objective for CM 1. Losses  
2234 in sage-grouse habitat quantity may be offset by increases in sage-grouse habitat quality and vice  
2235 versa (consistent with *Section 12. Covered Activities and Estimated Levels of Take -*  
2236 *development subsection*).

2237  
2238 [Insert schedule for completing long term monitoring (trend)]

2239  
2240 [Insert here all identified threats, conservation objectives, conservation measures, and monitoring

2241 requirements as outlined similar to the example below]

2242

2243 **Example:**

2244 *Threat:* In the Upper Pasture (1500 acres) of this property juniper has encroached into  
2245 high elevation sagebrush rangeland. Juniper is in Phase II and III on 500 acres and is/has  
2246 decreased available sage-grouse nesting and brood rearing habitat. (Based on  
2247 stratification of habitat suitability from the Upland Ecological State Documentation  
2248 Form).

2249

2250 *Conservation Objective:* Prevent transition to conifer dominated state by reducing or  
2251 eliminating conifers on 250 acres of Ecological State C mountain big sagebrush/Idaho  
2252 fescue range sites in the Upper Pasture over the next 10 years. (These 250 acres were  
2253 selected based on an initial baseline assessment of their location within PPH/Core habitat,  
2254 potential for recovery based on deep, north slope soils, and post management capabilities  
2255 of the landowner).

2256

2257 *Conservation Objective:* Restore dominance of shrubs and perennial grasses and forbs  
2258 through removal of dominant conifer overstory on 250 acres of Ecological State E  
2259 mountain big sagebrush/Idaho fescue range sites in the Upper Pasture over the next 10  
2260 years. (Information collected during the baseline inventory indicated restoration of these  
2261 250 acres was important for providing connectivity between large areas of intact  
2262 sagebrush habitat and for meeting the nesting and brood-rearing life history needs of  
2263 sage-grouse).

2264

2265 *Conservation Measures:* # 10, 13, 15, 17, 18 (Due to the location of the treatment areas  
2266 in proximity to potential invasive species, cutting, piling and pile burning with follow-up  
2267 seeding will be utilized as conservation actions to improve the landscape capability for  
2268 supporting sage-grouse).

2269

2270 *Monitoring:* Two representative, permanent monitoring locations will be established in  
2271 each of the proposed treatment areas and Modified Pace 180° data, supplemented with  
2272 density measurements and transect photos, will be collected prior to implementation of  
2273 conservation measures to establish the baseline for trend monitoring. Trend monitoring  
2274 will be repeated three and five years post treatment implementation. Subsequent trend  
2275 monitoring will be conducted every five years.

2276

2277 *Interpretation of Trend Indicators and Associated Triggers for Adaptive Management:*  
2278 Key indicators of vegetation trend will include perennial bunchgrass basal cover and  
2279 density and sagebrush cover and density. An upward trend in these key indicators at  
2280 representative monitoring locations (e.g. 1. perennial grass basal cover and density has  
2281 increased and interspaces between perennial plants is either bareground or occupied by  
2282 desirable annual forbs and 2. sagebrush cover and density has increased) would suggest  
2283 the applied conservation measures were successful in transitioning the ecological status  
2284 of vegetation from being conifer dominated to being sagebrush/bunchgrass dominated. A  
2285 static or downward trend in these key indicators would suggest the need for intervention  
2286 with follow-up measures (e.g. weed control and/or revegetation treatments) to ensure

2287 progress is being made toward achieving conservation objectives. Conifer cover will  
2288 become a key indicator of trend during longer term monitoring. An increase in conifer  
2289 cover suggests a negative trend toward conifer dominance.  
2290

2291 *Threat:* Medusahead rye has invaded 20 acres of low elevation rangeland in Ecological  
2292 State B in the House Pasture. (This patch of medusahead rye was discovered during the  
2293 first site visit and was found in a relatively intact Wyoming big sagebrush and bluebunch  
2294 wheatgrass/Sandberg bluegrass range site).  
2295

2296 *Conservation Objective:* Restore dominance of deep-rooted perennial vegetation to 20  
2297 acres of medusahead rye to protect the surrounding 500 acres of intact low elevation  
2298 rangeland in Ecological State B in the House Pasture.  
2299

2300 *Conservation Measures:* #32, 37, 40 (Conservation Measure 40 will be implemented  
2301 within one year of signing the SSP).  
2302

2303 *Monitoring:* One representative, permanent monitoring location will be established in the  
2304 proposed treatment areas and Pace 180 data, supplemented with density measurements  
2305 and transect photos, will be collected prior to implementation of conservation measures  
2306 to establish the baseline for trend monitoring. Trend monitoring will be repeated two and  
2307 four years post treatment implementation. Subsequent monitoring intervals will be  
2308 determined at this time based on the progress toward meeting the conservation objective.  
2309 In addition to Crook SWCD conducting trend monitoring associated with medusahead  
2310 control and revegetation treatments, the landowner has agreed to annually conduct  
2311 planned searches for incipient infestations of medusahead with emphasis on roadways  
2312 and livestock and ATV trails as part of an annual monitoring program.  
2313

2314 *Interpretation of Trend Indicators and Associated Triggers for Adaptive Management:*  
2315 Key indicators of vegetation trend will include perennial bunchgrass basal cover and  
2316 density and niche occupation of interspace areas between perennial plants. An increase  
2317 in the basal cover and density of perennial bunchgrasses and niche occupation by  
2318 bareground or desirable annual forbs of interspaces areas between perennial plants (i.e.,  
2319 not exotic annual grasses) would suggest perennial plants are fully occupying the site.  
2320 An upward trend in these indicators at the representative monitoring location would  
2321 suggest the applied conservation measures were successful in transitioning the ecological  
2322 status of vegetation from being annual grass dominated to being perennial bunchgrass  
2323 dominated. A static or downward trend in these key indicators would suggest the need  
2324 for intervention with follow-up measures (e.g. weed control and/or revegetation  
2325 treatments) to ensure progress is being made toward achieving conservation objectives.

2326 Conservation Measures will describe the actions that will be taken to maintain or improve habitat  
2327 on lands covered by the Certificate of Inclusion (CI) and are the actions agreed to within the Site  
2328 Specific Plan (SSP). On some properties existing management will provide for sage-grouse  
2329 habitat needs while other properties will require specific habitat improvements (conservation  
2330 measures to be taken to meet sage-grouse habitat needs).

2331 [Insert a list and a description of the specific habitat improvement techniques (conservation

2332 measures) that will be implemented on the lands covered by this agreement]

2333 [Include a map of the areas where these activities are to be implemented]

2334 [Insert a schedule of expected dates of implementation of Conservation Measures, or as an  
2335 attachment to this SSP/CI]

2336

2337 **L. Funding**

2338 The SWCD and the enrolled landowners will be responsible for acquiring funds for conservation  
2339 implementation through use of grant money or through partnerships with State and Federal  
2340 agencies, county government, non-governmental organizations, or a combination of the above.

2341 The FWS will assist through its Partners for Fish and Wildlife program, or other funding  
2342 opportunities when available. The FWS will also provide technical support to the SWCD and  
2343 landowners applying for funding to implement CMs. Failure to complete the funded activities  
2344 within an agreed upon timeframe may result in withdrawal of the assurances provided to the  
2345 landowner under the CCAA and this CI.

2346

2347 [Insert anticipated/potential funding sources for the activities described in this CI]

2348

2349 **M. Duration of Site Specific Plan/Certificate of Inclusion**

2350 This SSP/CI and the coverage of "take" under the Permit are effective from the date of last  
2351 signature below until expiration of the programmatic CCAA, unless terminated by either party  
2352 prior to the expiration.

2353

2354 **N. Modification of SSP/CI**

2355 Any enrolled landowner, FWS, or SWCD may propose modifications to a SSP/CI, as provided in  
2356 50 CFR 13.23. The party proposing the modification will provide a written statement to the other  
2357 participating parties describing the proposed modification(s), the reason for it and the expected  
2358 results. The landowner, SWCD, and FWS will use their best efforts to respond in writing to  
2359 proposed modifications within 60 days of receipt of a request. Proposed modifications to a  
2360 SSP/CI will only become effective upon the written concurrence of all participating parties.

2361

2362 If FWS determines that additional conservation measures not provided for in the CCAA are  
2363 necessary to respond to changed circumstances the FWS will not require any modifications or  
2364 additional CMs or CCCMs in the CCAA or the SSP/CI without the consent of the enrolled  
2365 landowner, provided the SSP is being properly implemented. Modifications will be done in  
2366 accordance with all applicable legal requirements, including but not limited to the ESA, the  
2367 National Environmental Policy Act (NEPA), and the FWS's permit regulations at 50 CFR 13 and  
2368 50 CFR 17.

2369

2370 For each proposed modification, the FWS must determine whether the proposed modification is  
2371 minor or major in nature. Minor modifications involve routine administrative revisions or  
2372 changes to the operation and management program associated with a SSP/ CI, and may or may  
2373 not alter the conditions of the permit. For example, a minor modification might include a change  
2374 in monitoring or reporting protocols based upon recommendations from new research. Upon the  
2375 written request of one of the participating parties, the FWS can approve minor modifications if it  
2376 does not conflict with the purposes of the programmatic CCAA or does not result in some

2377 material change to the FWS’s NEPA analyses (i.e., with respect to meeting the CCAA standard,  
2378 the amount of take authorized, the section 10 determination, or the NEPA decision). These  
2379 minor modifications do not require a formal process, but do require written documentation that  
2380 all participating parties approved the modification(s) prior to it becoming effective.

2381  
2382 A major modification would either (1) result in a different level or type of take than was  
2383 analyzed in association with the SSP/ CI or (2) result in a change to the cumulative conservation  
2384 benefits to sage-grouse such that the CCAA standard might not be met. Major modification(s)  
2385 may be subject to the procedural requirements of Federal laws and regulations, such as NEPA,  
2386 and to require additional analysis by the FWS, public notification in the Federal Register, and a  
2387 formal CCAA modification process. For example, a major modification might include a  
2388 proposal to use an insecticide in sage-grouse habitat not specified in the SSP.

2389  
2390 **O. Termination of SSP/CI**

2391 The landowner agrees to give 30 days’ written notice to the SWCD of his or her intent to  
2392 terminate this SSP/CI. The landowner may terminate implementation of this SSPs voluntary  
2393 management actions prior to the SSP/CI expiration date, even if the expected benefits have not  
2394 been realized.

2395  
2396 If monitoring data indicates the landowner has failed to comply with or implement agreed CMs,  
2397 reporting, or other responsibilities specified and agreed upon in his/her SSP/CI, the SWCD and  
2398 or FWS may revoke the landowner’s SSP/CI. This will not occur without an attempt by SWCD  
2399 and/or FWS to work with the landowner through an informal resolution process as outlined in  
2400 *Section 22. Dispute Resolution* of the programmatic CCAA, or through other agreed-upon  
2401 methods. However, if no resolution can be achieved, revocation of the SSP/CI will be effective  
2402 upon receipt of written notice of revocation from the SWCD and/or FWS. The landowner will no  
2403 longer be covered under the provisions of the SSP/CI and the CCAA and relinquishes any  
2404 assurances and take authority specified therein.

2405  
2406 **P. Remedies**

2407 Each party shall have all remedies otherwise available to enforce the terms of the CCAA and this  
2408 SSP/CI, except that no party shall be liable in monetary damages for any breach of the CCAA  
2409 and this SSP/CI, any failure to perform an obligation under the CCAA and this SSP/CI, or any  
2410 other cause of action arising from the CCAA and this SSP/CI.

2411  
2412 **Q. Transfer of Property**

2413 The landowner agrees to give 30 days’ written notice to the SWCD of his or her intent to sell the  
2414 enrolled property so the SWCD and the FWS can offer the new owner the option of receiving  
2415 CCAA assurances by signing a new SSP/CI. (For further information see *Section 19. Succession  
2416 and Transfer* of the programmatic CCAA).

2417  
2418 **R. Privacy Statement**

2419 The landowner provides and the SWCD receives all personal and confidential commercial  
2420 information, including, but not limited to: names, contact information, general and legal  
2421 description of the enrolled property, grazing practices, land use practices, commercial activities  
2422 on the land, recreational activities on the land, site-specific species sightings, and site-specific

2423 species habitat condition, regardless of the form, under the belief and obligation that the  
2424 information is personal and/or commercial and is confidential in nature. The landowner and  
2425 SWCD acknowledge that the release or disclosure of information may result in an unwarranted  
2426 invasion of personal privacy and/or cause substantial harm to the commercial interest of the  
2427 landowner. Accordingly, SWCD will, to the maximum extent available under federal, state, and  
2428 local law, protect against disclosure of the information by utilizing a case by case review and  
2429 determination.

2430

2431 **S. Notice of Possible Disclosure**

2432 In the event that a request for information is made to SWCD that would result in the possible  
2433 disclosure of personal and/or commercial confidential information, the impacted landowner shall  
2434 receive notice of the request. Additionally, the landowner shall be provided with the opportunity  
2435 to state, orally or in writing, why a release of the requested information would constitute a  
2436 clearly unwarranted invasion of privacy and/or cause substantial harm to the his/her commercial  
2437 interest.

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2439 **CERTIFICATE OF INCLUSION**

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

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

\_\_\_\_\_  
Date

\_\_\_\_\_  
Board Chair  
Crook Soil and Water Conservation District

\_\_\_\_\_  
Date

2483 **APPENDIX C – State and Transition Models**

2484  
2485 The **overall management goal** is to facilitate maintenance of, or transition to, a desired  
2486 ecological state (state “A” or “B”) using an ecologically-based model (see state and transition  
2487 diagrams for low elevation, high elevation, and riparian habitat shown in Figures 2-4) that can  
2488 serve the habitat needs of sage-grouse. Once this state is achieved, additional conservation  
2489 measures may be used to further increase the quality/value of sage-grouse habitat (e.g., timing of  
2490 grazing in nesting habitat) or mitigate species-specific threats (e.g., raptor perches in the vicinity  
2491 of critical habitat). However, focusing on species-specific conservation measures in habitat that  
2492 is in or at risk of transition to a non-desired state (states “C”, “D”, or “E”) can divert resources  
2493 from addressing underlying ecological issues that ultimately define the current and future value  
2494 of such habitats to sage-grouse and other sagebrush obligate wildlife species. For this reason, an  
2495 ecologically-based model will be used to determine inventory, monitoring, and conservation  
2496 needs during the site specific planning process.

2497  
2498 The states in the models will be determined by a combination of information including: 1) NRCS  
2499 ecological site descriptions; 2) data collected during the baseline inventory; 3) best professional  
2500 judgment; 4) local climatic variation; 5) site history and other information collected as outlined  
2501 in *Section 6. Inventory and Monitoring Protocols*, of this CCAA. Recovery of shrub-steppe  
2502 habitat is slow (varies greatly from 20 -100 years depending on pre-disturbance state) and the  
2503 CCAA is a 30-year permit, therefore the threshold for meeting the objectives in states A or B is  
2504 that the vegetation on the site is trending towards the desired plant community. The restoration  
2505 potential of the other states (C, D and E) depends on the degree of degradation; objectives for  
2506 states C, D, and E will need to be based upon degree of degradation and probability of success of  
2507 treatments.

2508  
2509 ***Ecological States and their relationship to sage-grouse habitat***

2510 It is important to note that much of the knowledge base concerning vegetation composition and  
2511 structure in habitats used by sage-grouse has been based on small (patch) scale measurements  
2512 that reflect the immediate vicinity of the location of radio-marked or flushed birds (e.g., Gregg et  
2513 al. 1994; Sveum et al. 1998; for detailed information on sage-grouse habitat at the patch scale see  
2514 Connelly et al. 2000 and Hagen et al. 2011). This is significant because large-scale monitoring  
2515 efforts (including procedures described in this document) are most feasible at the plant  
2516 community scale or larger and current knowledge of successional change in the sagebrush steppe  
2517 is firmly based on relationships described at the plant community scale. This discrepancy in  
2518 scale can lead to problems when plant composition at the plant community scale is expected to  
2519 conform to idealized vegetation attributes based on smaller scale measurements. For example,  
2520 working at the community scale, Davies et al. (2006) examined over 100 “late-seral” Wyoming  
2521 big sagebrush communities and reported that: “No sites met the nesting or optimum brood-  
2522 rearing habitat vegetation cover values suggested by Bureau of Land Management (2000).  
2523 Mesic and arid breeding vegetation cover values suggested by Connelly et al. (2000) were met  
2524 by 0% and 18% of the sites, respectively”. Additionally, in a meta-analysis of sage-grouse  
2525 nesting and brood rearing habitats Hagen et al. (2007) determined that sagebrush cover, grass  
2526 cover and grass height was greater at nest sites than at random points and vegetation at brood  
2527 areas contained less sagebrush, taller grasses and greater grass and forb cover than random sites.  
2528 Understanding the optimum mix and spatial arrangement of these communities and their effects

2529 on demographic rates in a landscape could substantially enhance sage-grouse management.  
2530 Furthermore, in the 2010 Warranted but Precluded Finding USFWS identified threats  
2531 contributing to sage-grouse habitat fragmentation and loss that occur at the plant community and  
2532 larger scales. The Finding went on to suggest that local regulatory mechanisms be  
2533 developed/strengthened to address known threats to sage-grouse. Such mechanisms will  
2534 logically occur at scales consistent with the identified problems. It thus follows that assessment  
2535 of habitat and monitoring of the effectiveness of implemented conservation measures will be  
2536 conducted at a scale consistent with the identified threats and the conservation measures  
2537 designed to address those threats. Therefore, the focus in this document is at the scale of the  
2538 plant community and the monitoring procedures reflect that scale-specific focus. Thus, the intent  
2539 is to use best available knowledge to promote a sustainable composition of plants (termed  
2540 “states” in these models) that provides elements necessary for sage-grouse habitat at the plant  
2541 community scale.

2542  
2543 The use of a color-coding system to label habitats as year-around (green), seasonal (yellow), or  
2544 non-habitat (red) is based on the presumption of the presence or absence of specific vegetation  
2545 components that comprise different elements of sage-grouse habitat. Those presumptions are  
2546 based on characterizations of sage-grouse habitat elements as described by Crawford et al.  
2547 (2004). Focusing on the low and high elevation models, different habitat needs with different  
2548 vegetation states can be associated, and the sum of those associations can be used to broadly  
2549 characterize habitat as year-around, seasonal, or non-habitat. However, just because a state may  
2550 be suitable for, for example, nesting habitat, that doesn’t mean that it is currently being used or  
2551 will be used in the future for nesting purposes. That said, in both the *low and high elevation*  
2552 *models, states A and B* have the potential to support *nesting activities*, although the suitability of  
2553 state B for this purpose could be limited by sagebrush abundance in some cases. *Brood-rearing*  
2554 *habitat* could occur in either *state A or B, although riparian areas in other states* have potential  
2555 to provide late season brood-rearing habitat. For the *low elevation model, winter habitat* will be  
2556 associated primarily with states *A and D*, and in the *high elevation model winter habitat* would  
2557 be mainly in *state A*.

2558  
2559 ***Breeding Habitat:***

- 2560
- 2561 • During the spring lekking period, sage-grouse use areas of low-statured vegetation (both  
2562 shrubs and herbaceous) for purposes of display and breeding. There is strong fidelity to  
2563 particular lekking sites and this habitat type is rarely limited on a landscape basis.  
2564 Nesting habitat can be thought of as being comprised of two distinct time elements.
  - 2565 • During the pre-laying period, which is the month prior to actual nesting, female sage-  
2566 grouse continue to eat sagebrush but focus a growing portion of their diet on protein-rich  
2567 forbs, which are thought to increase the nutritional status of the birds prior to the  
2568 upcoming nesting period.
  - 2569 • Sage-grouse typically nest under mature sagebrush, or in some cases other shrubs, and  
2570 during the nesting period rely on perennial bunchgrasses in the immediate vicinity of the  
2571 nest to provide screening cover from nest predators. Potential cover and height values for  
2572 perennial grasses will vary strongly based on both ecological site and yearly conditions.  
2573 Nests are often located near (e.g., < 3 km) lekking sites, but hens may move large  
2574 distances from leks for nesting purposes. Mature sagebrush with umbrella-shaped  
canopies may provide increased screening cover of nests and this canopy shape also helps

2575 to decrease grazing of under-shrub screening cover by cattle (France et al. 2008).

2576

2577 **Brood Rearing Habitat:**

- 2578 • As with nesting, the brood-rearing period can be broken into distinct time phases. During  
2579 **early brood-rearing**, the diet of chicks is focused on forbs and insects (chicks are  
2580 actually obligate insectivores for roughly the first two weeks of life). From a vegetation  
2581 standpoint, these habitats are often represented by areas of reduced sagebrush canopy  
2582 cover, with increased herbaceous expression. As the growing season progresses, broods  
2583 move into **late brood rearing habitat**, which is determined largely by the presence of  
2584 succulent vegetation; primarily forbs, although some sagebrush is consumed. This  
2585 succulent vegetation is often associated with riparian areas or seeps, however, broods  
2586 may also migrate up in elevation, effectively staying ahead of the advancing desiccation.

2587

2588 **Winter Habitat**

- 2589 • The critical vegetation component during the **winter period** is sagebrush, given that  
2590 winter diets are comprised almost entirely of sagebrush. Shrub height may or may not be  
2591 important, depending on context. On sites with deep snow, a certain height is obviously  
2592 necessary to ensure food availability and mature big sagebrush (*Artemisia tridentata*  
2593 Nutt. ssp.) is of high importance, however, sage-grouse have also been reported to use  
2594 smaller-statured low sagebrush (*Artemisia arbuscula* Nutt.) on wind-swept ridges with  
2595 minimal snow cover.

2596

2597 **Interpretation**

2598 While state and transition models are typically viewed as being site specific, it is critical to  
2599 recognize the consequences of spatial connectivity between vegetation states across the larger  
2600 landscape. For example, a low elevation vegetation community in state “A” provides for year-  
2601 around sage-grouse habitat. However, if a given community in this state is set within a larger  
2602 landscape comprised mainly of low elevation state “C” (i.e., annual grass-dominated), then fire  
2603 risk to state “A” will increase dramatically, suggesting that conservation measures to reduce  
2604 annual grass abundance in the larger landscape will have significant implications to the security  
2605 of state A. This example illustrates that conservation measures may have value to sustaining  
2606 existing sage-grouse habitat, even if these measures are applied in locations that are currently  
2607 non-habitat, and reinforces the importance of considering spatial connectivity between  
2608 vegetation communities across the landscape when defining threats and associated conservation  
2609 measures. This same concept can also be applied over time. For example, during wet years fuel  
2610 accumulations across the landscape may be high enough to create high fire danger for most  
2611 vegetation communities, regardless of what “state” they are in. In such cases, conservation  
2612 measures to reduce fuel loading could be applied generally, regardless of vegetation state, to  
2613 reduce risk of wildfire. This example illustrates that conservation needs vary over time and that  
2614 application of conservation measures must take place within the framework of adaptive  
2615 management.

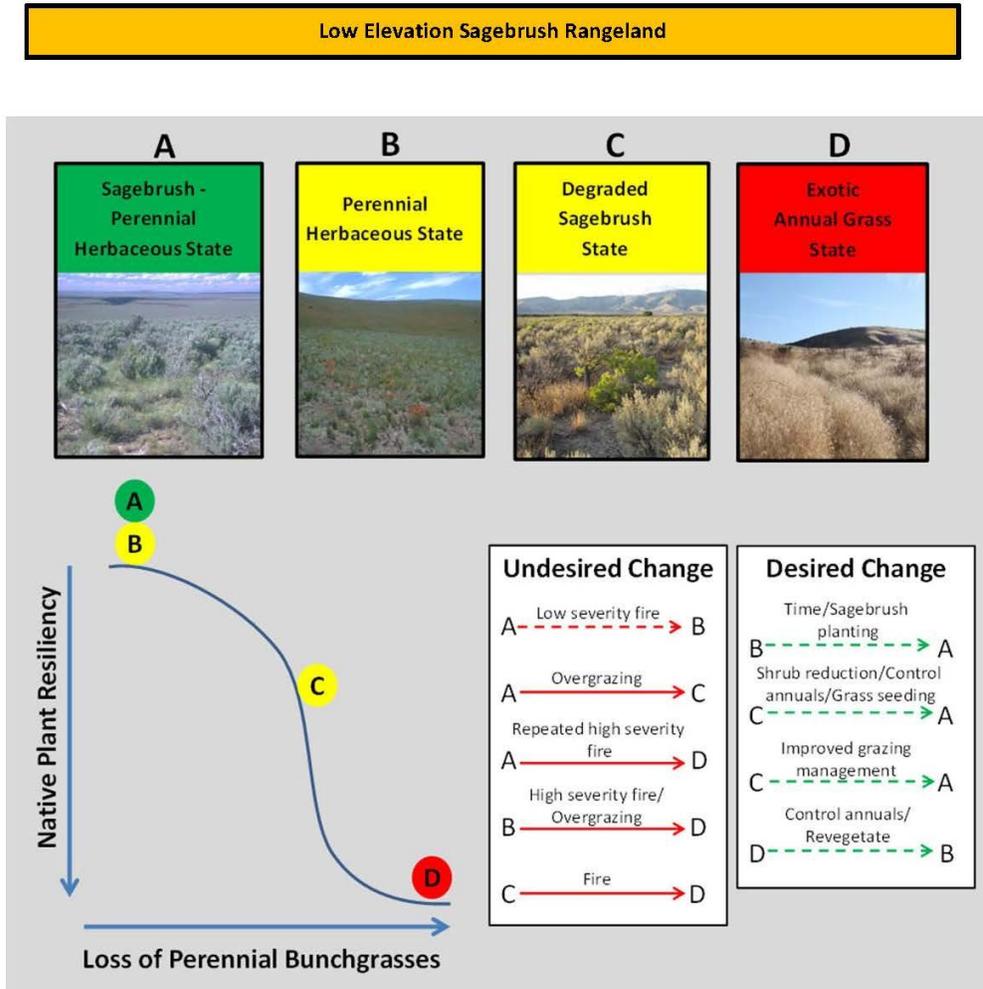
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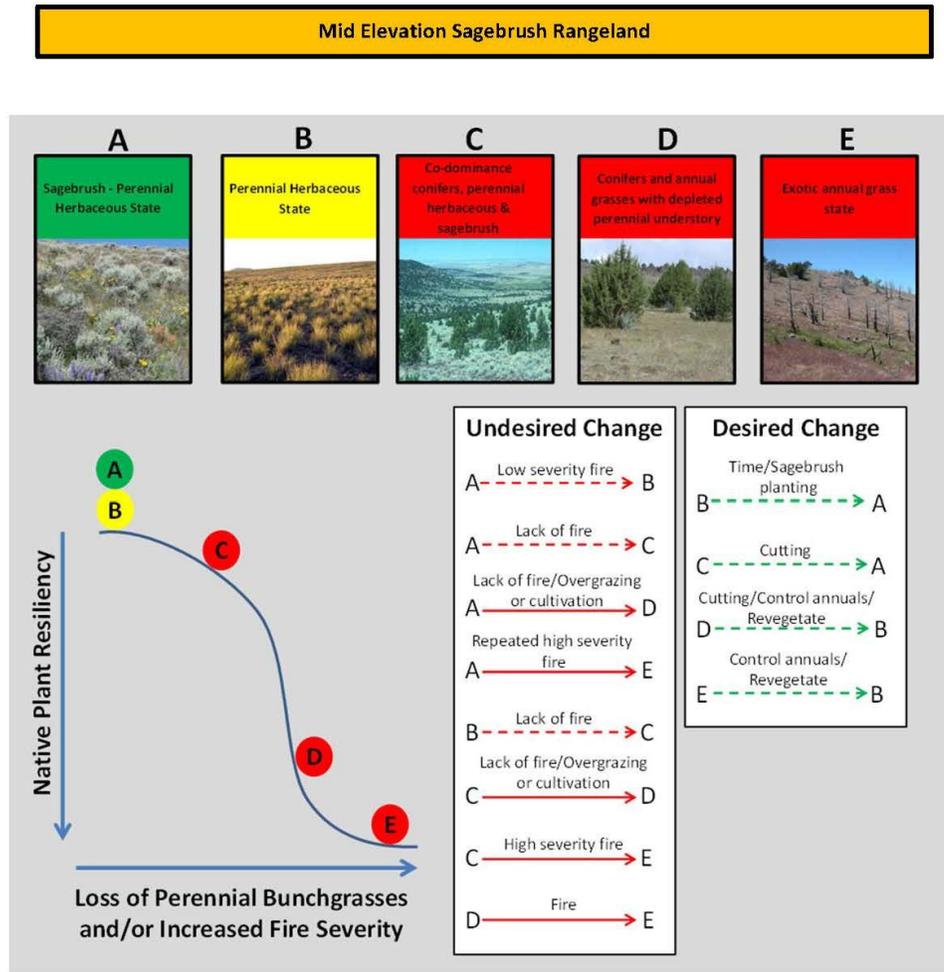
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Figure 7. Low elevation sagebrush state and transition model.



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

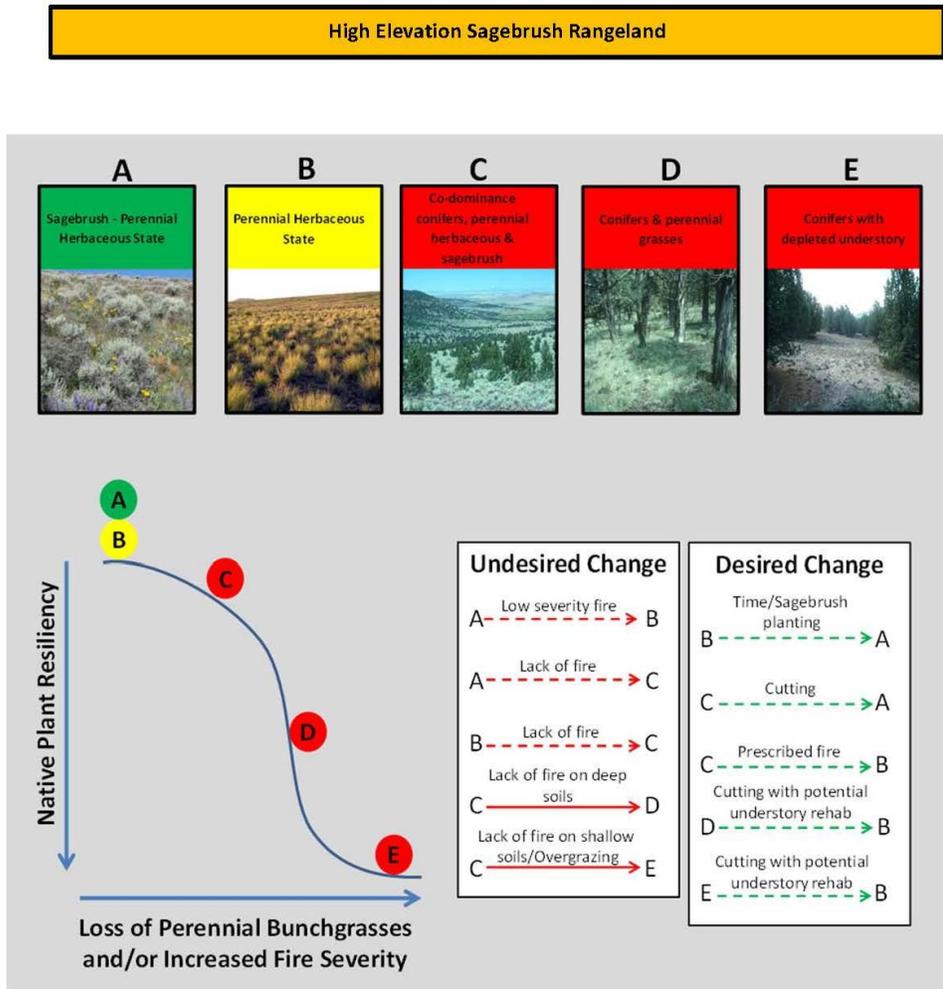
2622 **Figure 8. Mid Elevation Sagebrush State and Transition Model**



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

2623  
2624

2625 **Figure 9. High elevation sagebrush state and transition model.**  
 2626



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.

2627 **Figure 10: Riparian state and transition model.**

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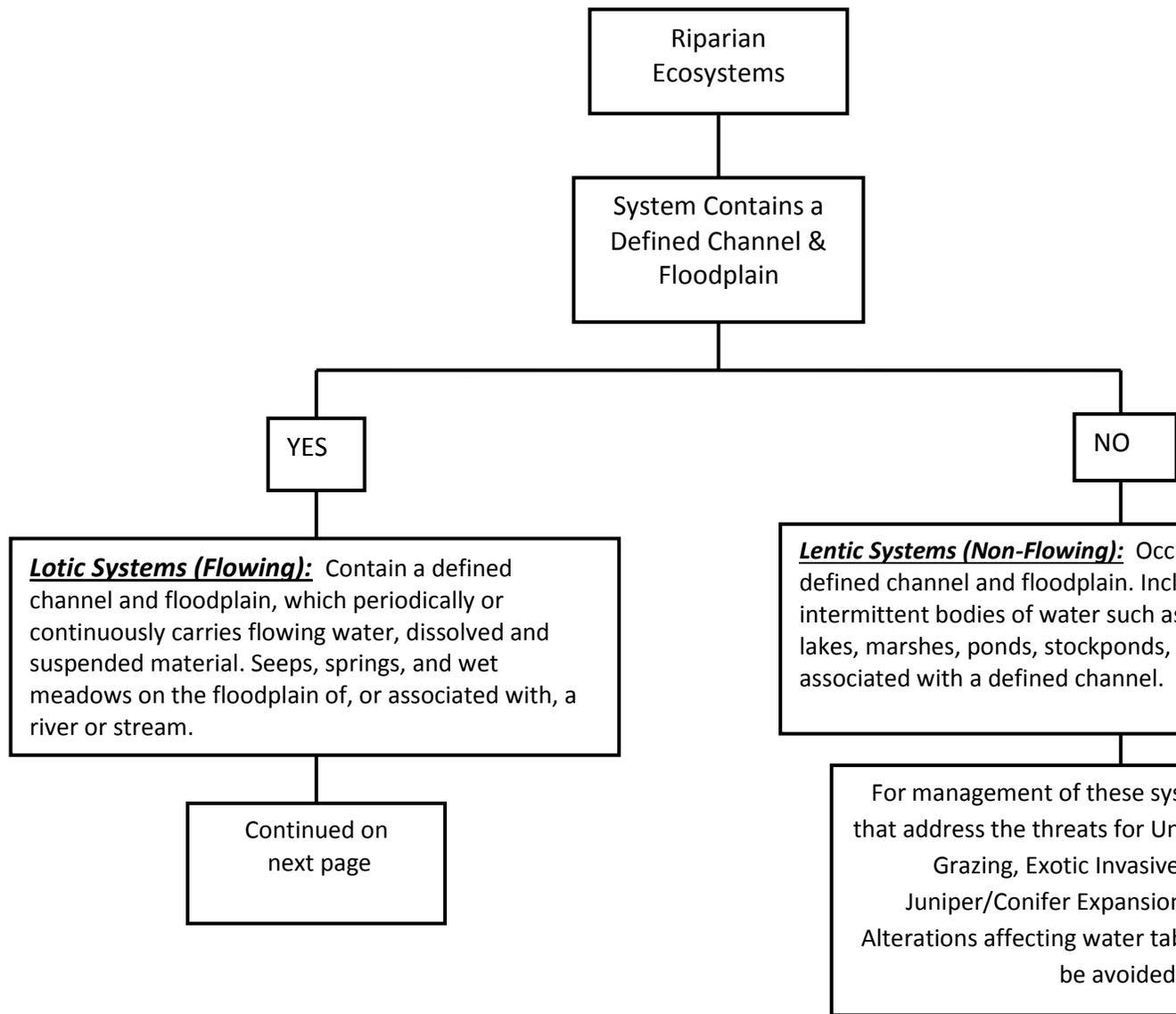
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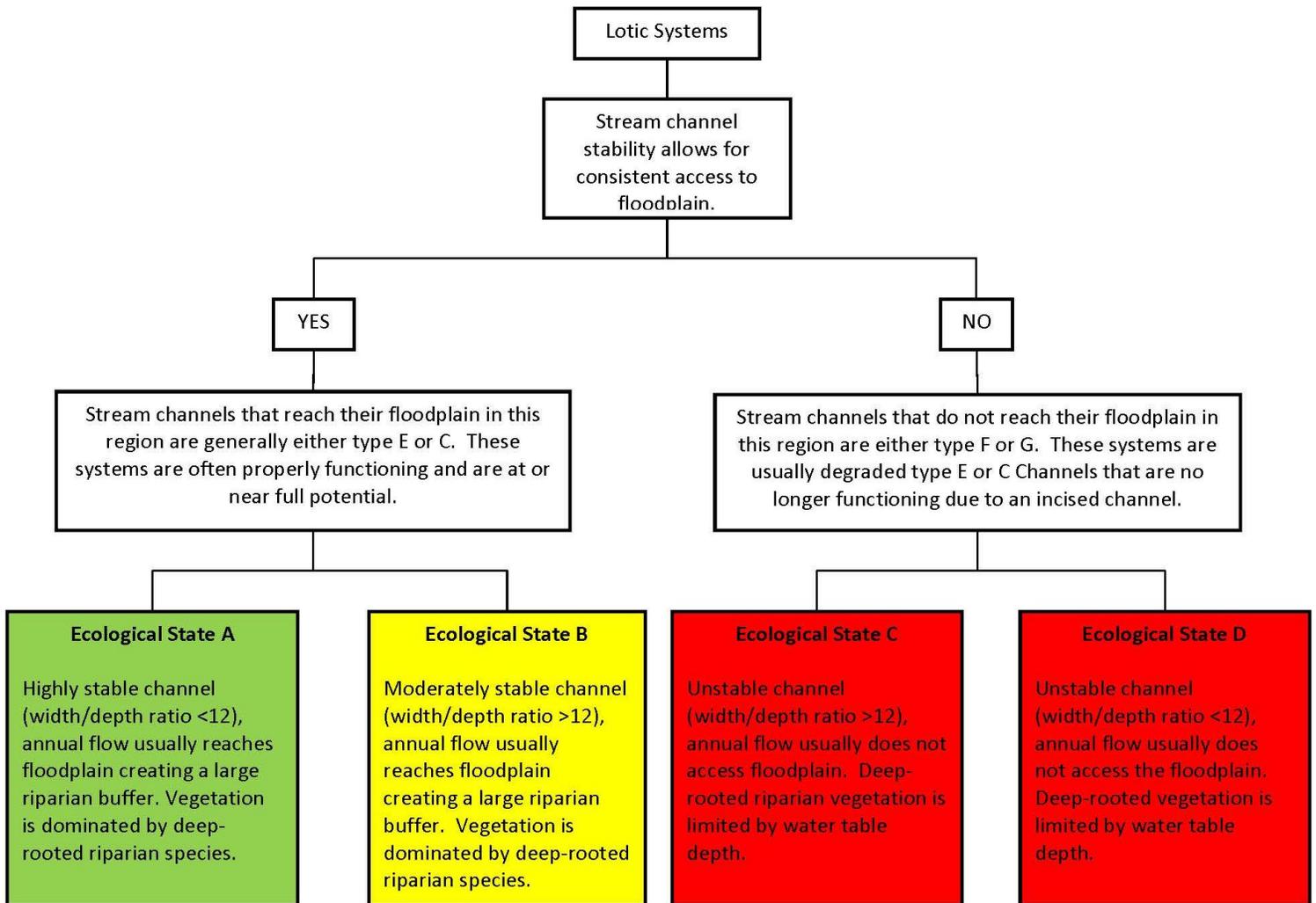
The **management goal is** to facilitate maintenance of, or transition to, a desired riparian state using a hydrology-based model. These states will be determined using Rosgen’s stream classification guide, focusing primarily on stream channel classifications that can serve or have the potential to serve the habitat needs of sage-grouse and exclude/ing those not applicable to this area (type D) or too high gradient (type A and B channels). The Crook and Deschutes Counties 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 Crook Soil and Water Conservation District (SWCD), to direct future conservation strategies.

Figure 11: Riparian systems

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2685 **Figure 12: Lotic systems**  
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2687 **APPENDIX D – Inventory and Monitoring**

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 2689 The basic method of upland trend monitoring used in this CCAA is a modified Pace 180° with  
 2690 step-point and density measurements with plot photos and landscape photos in cardinal  
 2691 directions, as described below. However, the CCAA provides the SWCD with the flexibility to  
 2692 employ (with the concurrence of the landowner) the most efficient, generally accepted rangeland  
 2693 monitoring methodologies to measure change in ecological states as related to specific objectives  
 2694 in the SSP.

2695  
 2696 **Upland Trend Monitoring**

- 2697 • The Pace 180° Method is a quantitative procedure for monitoring vegetation trend. It  
2698 involves documenting groundcover “hits” using the toe of a boot along a pace transect at  
2699 specified intervals. This method provides an estimate of ground cover (bare ground, litter,  
2700 rock, perennial vegetation, annual vegetation, moss, and biological soil crusts), basal  
2701 cover of perennial herbaceous plants (grasses and grass-like plants and forbs), foliar  
2702 cover of woody species (trees and shrubs), and perennial plant composition (see Johnson  
2703 and Sharp, 2012).
- 2704 • The Step-Point method employs a long pin flag or piece of welding rod dropped at the toe  
2705 of the forward boot along a pace transect to arrive at an estimate of cover. While holding  
2706 the pin flag vertical at the toe of the observer’s boot, he or she records all vegetation  
2707 interceptions along the full length of the pin beginning with top vegetation layers and  
2708 working down the pin flag to the soil surface. It measures cover for individual species,  
2709 total cover, and species composition by cover. Pace 180° and Step-Point measurements  
2710 will be collected every pace along a 100-point pace transect amounting to 100 samples  
2711 (see Herrick et al., 2005 for a detailed description of the Step-Point Monitoring Method).
- 2712 • Density of perennial vegetation by species will be recorded every 5th pace in a 0.25 m<sup>2</sup>  
2713 frame; amounting to 20 density measurements for each transect. Density is simply the  
2714 number of plants per unit area. It is a particularly useful measurement for monitoring  
2715 sagebrush rangelands in which the herbaceous understory is typically dominated by  
2716 perennial bunchgrasses. Density is less well-suited to areas that support rhizomatous  
2717 perennial grass species because of difficulties associated with identifying and counting  
2718 individual plants. Density of perennial bunchgrasses is perhaps the best indicator of the  
2719 resistance of sagebrush rangeland to conversion to undesirable vegetation states. A 3’x 3’  
2720 photo plot will be established at the starting point of the modified Pace 180° transect (see  
2721 Johnson and Sharp 2012 for a detailed description of placement of the photo plot). A  
2722 landscape photo will be taken from the 3’x 3’ photo plot toward a permanent reference  
2723 point that defines the direction of the modified Pace 180° transect. Landscape photos  
2724 will also be taken in the cardinal directions from the 3’x 3’ photo plot.
- 2725 • Repeat Photo Monitoring involves establishing a permanent photo plot and periodically  
2726 taking both ground level and transect view photographs. Comparing pictures of the same  
2727 site taken over a period of years provides visual evidence of vegetation and soil trend. A  
2728 properly located permanent photo point allows observation of changes in important  
2729 rangeland attributes including plant species composition, total plant cover, perennial plant  
2730 density, litter, spatial pattern of plants, plant vigor, and soil erosion. The form for  
2731 recording data using the modified Pace 180° method is shown in Appendix D-1.

2732  
2733 **Riparian Inventory and Trend Monitoring**

2734 The upstream and downstream ends of each long term or trend monitoring location and any other  
2735 critical area will be marked with rebar. These permanent locations will be used as repeat photo  
2736 monitoring points. Photographs will be taken looking both upstream and downstream of each  
2737 point and repeated periodically to assess stream movement (lateral and downcutting) and provide  
2738 evidence of vegetative trend. If the ocular assessment indicates ≥ 70% groundcover of deep-  
2739 rooted riparian plant species or anchored rock (i.e. riparian ecological state A) then monitoring  
2740 will consist of trend photos only; however, if future photos indicate downward trend, then further  
2741 assessments such as Proper Functioning Condition (PFC) and Multiple Indicator Monitoring  
2742 (MIM) are recommended. If the ocular assessment indicates < 70% groundcover of deep-rooted

2743 riparian plant species or anchored rock (i.e. riparian ecological states B or C) then additional  
2744 assessments are recommended. Further assessment for stream segments with 50-69%  
2745 groundcover of deep-rooted riparian plant species or anchored rock (riparian ecological state B)  
2746 may include other qualitative measurement tools, such as PFC, which identify factors influencing  
2747 change within riparian systems. If the stream is shown to be “functional-at risk” or  
2748 “nonfunctional” according to PFC classifications, or has <50% groundcover of deep-rooted  
2749 riparian plant species or anchored rock (riparian ecological state C) upon ocular assessment, then  
2750 remedial conservation measures may be required to improve riparian conditions. If conservation  
2751 measures are required, a quantitative monitoring technique should be used to evaluate long term  
2752 trend. One suggested quantitative trend monitoring technique is the MIM method, which  
2753 combines observations of up to 10 indicator variables (BLM, TR 1737-23) that can be used to  
2754 monitor long term trend, short term trend, and current condition along a specified stream reach to  
2755 gauge progress toward management objectives. The decision to perform long term monitoring  
2756 and the specific quantitative monitoring technique will be left to the discretion of the SWCD and  
2757 the landowner.

2758 **APPENDIX D-1 - Modified Pace 180° Method Form**

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VEGETATION TREND MONITORING														Soil Surface <b>(do not use litter):</b> 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) _____				Ecological Site _____						
Transect No. _____				Veg. Type _____				Ecological Site _____						
Top Layer					D									D
Code 1					E									E
Code 2					N									N
Code 3					S									S
Soil Surface					I									I
Nearest Plant					T									T
Toe Hit					Y									Y
Top Layer					D									D
Code 1					E									E
Code 2					N									N
Code 3					S									S
Soil Surface					I									I
Nearest Plant					T									T
Toe Hit					Y									Y
Top Layer					D									D
Code 1					E									E
Code 2					N									N
Code 3					S									S
Soil Surface					I									I
Nearest Plant					T									T
Toe Hit					Y									Y
Top Layer					D									D
Code 1					E									E
Code 2					N									N
Code 3					S									S
Soil Surface					I									I
Nearest Plant					T									T
Toe Hit					Y									Y
Top Layer					D									D
Code 1					E									E
Code 2					N									N
Code 3					S									S
Soil Surface					I									I
Nearest Plant					T									T
Toe Hit					Y									Y
Top Layer					D									D
Code 1					E									E
Code 2					N									N
Code 3					S									S
Soil Surface					I									I
Nearest Plant					T									T
Toe Hit					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



**Site Location and Documentation Data**

Study (Transect) Number				Study Method			
Ranch/Project Area			Pasture				
Ecological Site ID			Plant Community				
Established by (Name)			Date Established				
Map Reference							
Elevation		Slope		Aspect		Aerial Photo Reference	
Township		Range	Section	¼	¼	¼	
GPS Coordinates:						Scale: _____ inches equals one mile	
Key Species							
1	2		3				
Distance and bearing between reference post or reference point and the transect location stake, beginning of transect, or plot.							
Transect Length							
Transect Bearing							
Notes (Description of study location, diagram of transect/plot layout, description of photo points, etc. If more space is needed, use reverse side or another page.)							

2796 **Appendix D-3 Annual Grazing and Habitat Summary Form**  
2797 **ANNUAL GRAZING AND HABITAT SUMMARY**

2798 \_\_\_\_\_ **GRAZING SEASON**

2799 Ranch Name (tract # will be assigned for file retention) \_\_\_\_\_

2800 Pasture Name (tract # will be assigned for file retention) \_\_\_\_\_

2801 Yield Index \_\_\_\_\_ Weather Station \_\_\_\_\_

2802 Was there effective precipitation for early growth or regrowth?      Yes      No

2803 Indicators of Resource Conditions (check relevant indicators):

2804      Fire              Riparian              Insects              Weeds              Nutrient Cycling Wildlife Habitat

2805      Trespass              Drought              Watershed Function              Utilization              Wolf Plants

2806      Livestock Distribution      Range Improvements              Deviation in system or Season of use

2807 Summary of field notes, observations and data that describe range, livestock, and habitat conditions at  
2808 the end of the year.

2809

2810

2811

2812

2813 Description of actions, events, or activities that may have caused resource objectives to be met, not  
2814 met, or moved toward or away from. Recommended changes for next grazing season.

2815

2816

2817

2818 Individuals providing input or review: \_\_\_\_\_,

2819 \_\_\_\_\_,

2820 \_\_\_\_\_ DATE: \_\_\_\_\_

2821

2822

2823

2824

2825 **APPENDIX D-4–Baseline Inventory**

2826 The Upland Ecological State Documentation Form and the Riparian Ecological State  
2827 Documentation Form are ocular assessments that will document each ecological state within a  
2828 pasture and will provide the basis for selecting representative areas for each stratum, where  
2829 quantitative data will be collected and serve as permanent monitoring sites for the management  
2830 unit. For uplands, indicators will be surveyed within strata by applying the intuitive random  
2831 meander method (Nelson 1984) that traverses each stratum. Sampling of each stratum should be  
2832 conducted; however, certain strata (e.g., low elevation state C) will likely require less intensive  
2833 observation for confirmation than areas preliminarily identified as year-round or seasonal sage-  
2834 grouse habitat.

2835 The Upland Ecological State Documentation Form and the Riparian Ecological State  
2836 Documentation Form will be used to document each strata, by:

- 2837 • ground truthing preliminary ecological state strata. The procedure for ground confirming  
2838 preliminary ecological state strata will largely rely on an ocular assessment of key  
2839 indicators within each stratum.
- 2840 • making adjustments to boundaries of mapped ecological states when field observations  
2841 reveal deviations from preliminary strata.
- 2842 • taking a landscape photo with coordinates which represents the existing ecological state.

2843

2844

## 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 \_\_\_\_\_

2853  
2854

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

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

2855  
2856

**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

2861  
2862

**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	

2864  
2865

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

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

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

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

2868  
2869  
2870

<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).

2871 **APPENDIX E – Herbicides and Best Management Practices**

2872

2873 A major threat to sage-grouse within the CCAA area is the loss of habitat quality and quantity  
2874 due to the increase of exotic invasive plant species (noxious weeds) replacing native sagebrush  
2875 plant communities.

2876

2877 Herbicide use

2878 Herbicide application used alone or in combination with other methods may be used where  
2879 appropriate to provide a feasible and effective strategy for controlling invasive species and  
2880 preparing sites for desirable sage-grouse habitat restoration. Specific herbicides anticipated for  
2881 restoration and management of sage-grouse habitat or potential habitat are described in further  
2882 detail below. They were chosen for maximum effectiveness against wildland weeds and least  
2883 environmental and non-target species' risks.

2884

2885 Background

2886 The herbicide list for this CCAA includes 19 herbicides. Seventeen of those tier to the  
2887 *Vegetation Treatments Using Herbicides on BLM Lands in Oregon FEIS July 2010* (FEIS) and  
2888 related Record of Decision dated October 1, 2010. This July 2010 Oregon Final Environmental  
2889 Impact Statement tiers to the *Vegetation Treatments Using Herbicides on Bureau of Land*  
2890 *Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS)  
2891 and related Record of Decision completed in 2007, by the BLM Washington Office Rangelands  
2892 Resources Division; this set of documents made 17 herbicides available for a full range of  
2893 vegetation treatments in 17 western states, including Oregon. The additional two herbicides are  
2894 aminopyralid and rimsulfuron. The BLM intends to prepare an Environmental Impact Statement  
2895 (EIS) to evaluate the use of these two herbicides in its vegetation treatment programs on public  
2896 lands in 17 Western States (Federal Register, Volume 77, Number 246, Dec. 21, 2012). The  
2897 risk assessment for these two chemicals (aminopyralid and rimsulfuron ) have been completed  
2898 and no additional best management practices will be required than those identified in the July  
2899 2010 FEIS that this document is tiered towards and are outlined below. (BLM 2014 e-mail  
2900 communication)

2901

2902 Sage-grouse Consideration

2903 Both the *Sage Grouse Conservation Assessment* (Connelly et. al 2004) and *Ecology and*  
2904 *Conservation of Greater Sage Grouse: A Landscape Species and Its Habitats* (USGS 2009) were  
2905 reviewed and considered in preparation of the Oregon FEIS. Invasive plant treatments in infested  
2906 sage-grouse habitats would be part of restoration projects carefully designed to benefit sage-  
2907 grouse.

2908

2909 Consistency with Labels and Laws

2910 The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) establishes procedures for the  
2911 registration, classification, and regulation of all herbicides. Before any herbicide may be sold  
2912 legally, the EPA must register it. The EPA may classify an herbicide for general use if it  
2913 determines that the herbicide is not likely to cause unreasonable adverse effects to applicators or  
2914 the environment, or it may be classified for restricted use if the herbicide must be applied by a  
2915 certified applicator and in accordance with other restrictions. The herbicide label is a legal  
2916 document. Federal, state, and local law and all herbicide label requirements will be adhered to.

2917 Herbicides may be used only for the objectives and type of vegetation for which they are  
2918 registered, as displayed on the herbicide label.

2919  
2920

2921 Best Management Practices

- 2922 1. All manufacturer's label requirements and restrictions will be followed and  
2923 recommendations will be used as appropriate.
- 2924 2. To minimize risks to terrestrial wildlife, do not exceed typical application rates for  
2925 applications of dicamba, diuron, glyphosphate, hexazinone, tebuthiron, or triclopyr, where  
2926 feasible.
- 2927 3. Conduct a pretreatment survey. This may include, but is not limited to, flagging areas for  
2928 treatment, determining what noxious or invasive species are within the area, defining the  
2929 extent of area, and completing a through overview of the area before applying herbicides.
- 2930 4. Minimize the size of application area and use spot applications or low boom broadcast  
2931 where possible to limit the probability of contaminating non-target food and water  
2932 sources, when feasible.
- 2933 5. Where practical, limit glyphosphate and hexazinone to spot applications in grazing land  
2934 and wildlife habitat areas to avoid contamination of wildlife food items.
- 2935 6. Clean Off Highway Vehicles (OHVs) to remove plant material and herbicide residue to  
2936 minimize impact to non-target sites.
- 2937 7. Sprayers will be set to minimize drift (e.g., with low nozzle pressure, large droplet size,  
2938 low nozzle height) to the extent practical and feasible.
- 2939 8. Dyes may be used for herbicide application to ensure complete and uniform treatment of  
2940 invasive plants as well as to immediately indicate drift issues.
- 2941 9. Do not use adjuvant R-11.
- 2942 10. Either avoid using glyphosphate formulations containing POEA, or seek to use  
2943 formulations with the least amount of POEA, to reduce risk to amphibians.
- 2944 11. Do not use bromacil or diuron in rangelands and use appropriate buffer zones.
- 2945 12. To minimize disturbance to sage-grouse populations, do not conduct aerial or ground  
2946 broadcast applications of herbicides during nesting and early-brood rearing periods when  
2947 sage-grouse are present (March 1 – June 30, at a minimum), unless this timeframe or  
2948 target plant development stage is optimal for herbicide effectiveness.
- 2949 13. Most activities covered under this CCAA will occur on uplands, however, if herbicide  
2950 treatments are planned in ephemeral or perennial watercourses where listed fish may  
2951 occur additional coordination with the Service should occur.

2952

2953 Herbicides

2954 It is also noted that during the 30-year life of this agreement many technological changes for  
2955 control of invasives such as biological agents and herbicides will be developed for use on  
2956 rangelands and may be applied to improve sage-grouse habitat. As such herbicides and biological  
2957 control agents are approved by Environmental Protection Agency (EPA) and Oregon Department  
2958 of Agriculture (ODA) for use on rangelands, they will be considered for use under this umbrella  
2959 document to improve sage-grouse habitat. As previously noted, this document lists 19 specific  
2960 herbicides, however if other herbicides or biological agents are anticipated to be applied on  
2961 enrolled rangelands, agricultural and crop lands, an analysis will be conducted by SWCD. This  
2962 analysis will assess the risk associated with application of proposed chemicals, and if needed,

2963 additional Best Management Practice(s) will be developed (e.g., a different timing  
2964 recommendation for herbicide application). For permit coverage, use of herbicides other than  
2965 the following 19 listed will require a modification consistent with *Section N. Modification of*  
2966 *SSP/CI* in Appendix B or with *Section 18. Modification of Programmatic CCAA*.

2967  
2968 Herbicides can be categorized as selective or nonselective. Selective herbicides kill only a  
2969 specific type of plant. For example, an herbicide selective for broadleaved plants can be used to  
2970 manage such species while maintaining desirable grass species in rangeland communities. Non-  
2971 selective herbicides kill all types of plants, and thus should only be applied to the target species.  
2972 Herbicides can be used selectively to control specific types of vegetation (e.g. killing invasive  
2973 weeds), or non-selectively to clear all vegetation on a particular area (e.g. keeping a roadway  
2974 clear of vegetation). Some herbicides are post-emergent, which means they can be used to kill  
2975 existing vegetation; others are pre-emergent, which stops vegetation before it grows (e.g.  
2976 prohibiting seeds from germinating).

2977

2978 **List**

2979 **2, 4-D**

2980 *Product(s)*: Many, including Amine, Hardball, Unison, Saber, Salvo, Aqua-Kleen, and Platoon

2981 *Common Targets*: Annual and biennial broadleaf weeds. *Kochia, whitetop, perennial*  
2982 *pepperweed, Russian thistle and knapweed, sagebrush, rabbitbrush*. Selective to broadleaf.

2983 *Application*: Post-emergent

2984 *Point of application*: foliar

2985

2986 **Bromacil**

2987 *Product(s)*: Hyvar

2988 *Common Targets*: Annual grasses and broadleaf weeds. *Cheatgrass, puncturevine, ragweed, wild*  
2989 *oat, dandelion, quackgrass, wildcarrot*. Nonselective.

2990 *Application*: Pre- and post-emergent

2991 *Point of application*: soil

2992

2993 **Chlorsulfuron**

2994 *Product(s)*: Telar

2995 *Common targets*: *Thistles, wild carrot, giant horsetail, poison hemlock, Russian knapweed,*  
2996 *marestail, perennial pepperweed, puncturevine, tansy ragwork, common tansy, common teasel,*  
2997 *dalmation toadflax, yellow toadflax, whitetop, dyer's woad*. Selective to broadleaf.

2998 *Application*: Pre- and early post-emergent

2999 *Point of application*: soil and foliar

3000

3001 **Clopyralid**

3002 *Product(s)*: Transline, Stinger, Spur

3003 *Common targets*: *Thistles, common burdock, knapweeds, yellow starthistle, oxeye daisy,*  
3004 *hawkweeds, prickly lettuce, dandelion, cutleaf teasel, kudzu, buffalobur*. Selective to broadleaf.

3005 *Application*: Post-emergent

3006 *Point of application*: foliar

3007

3008 **Dicamba**

- 3009 *Product(s):* Vanquish, Banvel, Diablo, Vision, Clarity
- 3010 *Common targets:* Knapweeds, kochia, and thistles. Selective to broadleaf and woody plants.
- 3011 *Application:* Pre- and post-emergent
- 3012 *Point of application:* foliar
- 3013
- 3014 **Diflufenzopyr + dicamba**
- 3015 *Product(s):* Overdrive, Distinct
- 3016 *Common targets:* Knapweeds, kochia, and thistles. Selective to broadleaf.
- 3017 *Application:* Post-emergent
- 3018 *Point of application:* foliar
- 3019
- 3020 **Diuron**
- 3021 *Product(s):* Direx, Karmex
- 3022 *Common targets:* Annual grasses. (including bluegrass) and broadleaf weeds. *Lambsquarters,*
- 3023 *kochia and Russian thistle.* Selective to annual weeds, some perennials.
- 3024 *Application:* Pre-emergent
- 3025 *Point of application:* soil
- 3026
- 3027 **Fluridone**
- 3028 *Product(s):* Avast!, Sonar
- 3029 *Common targets:* *Hydrilla and watermilfoils.* Selective to submersed plants.
- 3030 *Application:* Post-emergent
- 3031 *Point of application:* aquatic
- 3032
- 3033 **Glyphosate**
- 3034 *Product(s):* Many, including Rodeo, Mirage, Roundup Pro, and Honcho
- 3035 *Common targets:* Grasses (including *Italian ryegrass*), sedges, broadleaf weeds, and woody
- 3036 shrubs. Nonselective.
- 3037 *Application:* Post-emergent
- 3038 *Point of application:* soil or foliar
- 3039
- 3040 **Hexazinone**
- 3041 *Product(s):* Velpar
- 3042 *Common targets:* Annual and perennial grasses and broadleaf weeds, brush, and trees. Selective
- 3043 to grasses, broadleaf, woody plants.
- 3044 *Application:* Pre- and post-emergent
- 3045 *Point of application:* soil or foliar
- 3046
- 3047 **Imazapic**
- 3048 *Product(s):* Plateau, Panoramic
- 3049 *Common targets:* *Cheatgrass, leafy spurge, medusahead, whitetop, dalmation toadflax and*
- 3050 *Russian knapweed.* Selective to some broadleaf and grasses.
- 3051 *Application:* Pre- and post-emergent
- 3052 *Point of application:* soil
- 3053
- 3054 **Imazapyr**

- 3055 *Products:* Arsenal, Habitat
- 3056 *Common targets:* Whitetop, cheatgrass, common knotweed, north Africa grass, Russian olive
- 3057 *Application:* Pre- and post-emergent
- 3058 *Point of application:* soil or foliar
- 3059
- 3060 **Metsulfuron methyl**
- 3061 *Product(s):* Escort, Patriot, PureStand
- 3062 *Common targets:* Whitetop, perennial pepperweed, and other mustards and biennial thistles.
- 3063 Selective to some broadleaf and grasses.
- 3064 *Application:* Post-emergent
- 3065 *Point of application:* soil or foliar
- 3066
- 3067 **Picloram**
- 3068 *Product(s):* Triumph, OutPost, Tordon
- 3069 *Common targets:* Perennial and woody species. Knapweeds, starthistle, thistle, bindweed, leafy
- 3070 *spurge, rabbitbrush, rush skeletonweed, and poison oak.* Selective to broadleaf and woody plants.
- 3071 *Application:* Pre- and post-emergent
- 3072 *Point of application:* foliar
- 3073
- 3074 **Sulfometuron methyl**
- 3075 *Product(s):* Oust, Spyder
- 3076 *Common targets:* Cheatgrass, annual and perennial mustards, and medusahead. Nonselective.
- 3077 *Application:* Pre- and post-emergent
- 3078 *Point of application:* Soil or foliar
- 3079
- 3080 **Tebuthiuron**
- 3081 *Product(s):* Spike
- 3082 *Common targets:* Sagebrush (thinning). Selective to broadleaf and woody plants.
- 3083 *Application:* Pre- and post-emergent
- 3084 *Point of application:* soil
- 3085
- 3086 **Triclopyr**
- 3087 *Product(s):* Garlon, Renovate, Element
- 3088 *Common targets:* Saltcedar, purple loosestrife, Canada thistle, tanoak, Himalayan blackberry.
- 3089 Selective to broadleaf and woody plants.
- 3090 *Application:* Post-emergent
- 3091 *Point of application:* foliar
- 3092
- 3093 **Aminopyralid**
- 3094 *Product(s):* Milestone
- 3095 *Common targets:* thistles, knapweed, some broadleaf weeds. Selective to broadleaf plants.
- 3096 *Application:* Post-emergent
- 3097 *Point of application:* soil or foliar
- 3098
- 3099 **Rimsulfuron**
- 3100 *Product(s):* Matrix, Resolve DF, Bais

3101 *Common targets: Used to control weeds in potato crops. Some use on annual grass medusahead*  
 3102 *rye. Selective.*  
 3103 *Application: Pre and post-emergent*  
 3104 *Point of application: soil or foliar*  
 3105

3106 **APPENDIX F – Information Used to Calculate Take**

3107 **Sage-grouse Density Calculation:**

3108 The density of sage-grouse in the covered area was calculated as follows. There are an estimated  
 3109 24,515 sage-grouse in Oregon based on a 10-year (2004-2013) average of the statewide total  
 3110 spring population (ODFW unpublished data 2013). According to Hagen (2011) 90% of sage-  
 3111 grouse occupy PPH (core), which is estimated at 6.57 million acres in Oregon. The assumption  
 3112 was made that the remaining 10% of the sage-grouse population lie within PGH, which is  
 3113 estimated at 8.26 million acres in Oregon (Hagen 2011). Using the 10-year minimum breeding  
 3114 population average, sage-grouse densities in PPH are estimated at 0.0034 birds per acre (90% of  
 3115 24,515 = 22,064 sage-grouse divided by 6.57 million acres of PPH). Average sage-grouse  
 3116 densities in PGH are estimated at 0.0003 birds per acre (10% of 24,515 = 2,452 divided by 8.26  
 3117 million acres) (Table 3, below). These statewide average densities were then multiplied by the  
 3118 number of acres of PPH (345,564 ac x 0.0034 birds per ac) and PGH (824,556 ac x 0.0003 birds  
 3119 per ac) covered under this CCAA (see Table 1 in *Section 8. Covered Area*) to come up with an  
 3120 estimated 10-year minimum population average of 1,406 sage-grouse for the covered area.  
 3121

3122

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

<b>Distribution of Birds by Habitat Type</b>	<b>Number of Birds</b>	<b>Acres of habitat</b>	<b>Birds per Acre</b>
10% of Birds in PGH	2452	8,257,373	0.0003/PGH
90% of Birds in PPH	22064	6,567,011	0.0034/PPH
<b>Total: 2004-2013 Statewide Minimum Spring Breeding Population Average</b>	<b>24515</b>	14,824,384	
	<b>Acres of Habitat</b>	<b>Birds by Habitat Type</b>	
PGH	167,374	60	Birds in PGH
PPH	316,134	1062	Birds in PPH
<b>Totals</b>	<b>398,624</b>	<b>1112</b>	

3123  
 3124

**Information used to calculate take percentages:**

- 3125 • ***Rangeland Treatments:*** When determining the level of take associated with Rangeland  
 3126 Treatments we used nest abandonment from livestock as a surrogate. We assumed that  
 3127 the types of disturbances that would occur as part of the activities described as  
 3128 “Rangeland Treatments” would have similar impacts to sage-grouse in the area being  
 3129 treated as those associated with repeated disturbance that cause hens to abandon their  
 3130 nests (see livestock management section below). We estimated that no more than 5% of  
 3131 the covered area (all acres PPH and PGH) would be treated in any one year. We felt this  
 3132 estimate was likely an overestimate because many rangeland treatments will occur in

3133 unsuitable habitats (juniper encroached areas, degraded sagebrush habitats etc.).  
3134 Additionally, as described in the conservation measures under rangeland treatments,  
3135 minimization measures (timing etc.) will be employed when treatments occur to lessen  
3136 the impacts to the covered area.

3137  
3138  
3139 • **Livestock Management:** We were able to calculate levels of take associated with nest  
3140 abandonment and trampling of nests from livestock grazing in occupied sage-grouse  
3141 habitats. Three studies, identified nest abandonment due to disturbance from livestock  
3142 grazing resulting in a total of 8 out of 223 or 3.59% of nests being abandoned.  
3143 (Rasmussen and Griner 1938 ( n=5/161 nests research conducted in Utah), Danvir 2002  
3144 (n=2/36, research conducted in Utah), and Holloran 2003 (n=1/26 research conducted in  
3145 Wyoming)). Two studies containing a total of 450 nests with five nests documented as  
3146 destroyed or trampled by livestock resulting in a take percentage of 1.11%. (Rasmussen  
3147 & Griner (n=2/161), Severson in progress unpublished (n=3/289)). According to ODFW  
3148 60% of the population are females (ODFW 2014 email), we further assumed all females  
3149 initiate nests and would be exposed to these threats. We placed 95% of females in PPH  
3150 and 5% of females in PGH, we based this assumption on the information provided in the  
3151 2011 ODFW Strategy that states 95% of nesting occurs in core habitats which is  
3152 equivalent to PPH, so we assumed the additional 5% of nesting occurs on lands outside  
3153 core or PGH.

3154  
3155 • **Farm Operations:** The acres impacted in the covered area were developed using 2010  
3156 LANDFIRE data, a GIS analysis was conducted by intersecting the data identified as  
3157 “agricultural” and the acres identified in this CCAA as the “covered area”. The resulting  
3158 acres (7,683 acres of PGH and 4,982 acres of PPH) are the acres we identified that  
3159 interactions between sage-grouse and farm equipment are most likely to occur. Very  
3160 little data exists documenting direct take from farm operations, one unpublished study by  
3161 Davis in Oregon documented one sage-grouse being killed during haying out of 105  
3162 collared birds, resulting in a take percentage of .95% (n=1/105). Additionally, when site  
3163 specific plans are developed minimization measures (either those currently in place or  
3164 new measures) related to haying/farming will be identified in Section K of the SSP.

3165  
3166 • **Development:** Fences are currently present throughout much of the covered area and  
3167 some new fences may be needed to protect sensitive areas of sage-grouse habitat or to  
3168 evenly distribute livestock within the covered area. Fences pose a strike risk to sage-  
3169 grouse. A Utah study concluded that 18% of documented mortalities to sage-grouse were  
3170 from fence strikes. (Danvir 2002) The overall mortality rate for this population was 53%,  
3171 making the relative risk of a sage-grouse hitting an unmarked fence at 9.54%. In 2011-  
3172 2013, Stevens published 3 papers examining the relative risk of hitting fences and  
3173 identifying key factors present in the habitat that would make a fence “high risk”, these  
3174 factors led to the development of a lek based model taking into account distance from  
3175 leks, slope, roughness and other factors, Stevens concluded that if high risk fences were  
3176 marked with anti-strike markers or reflectors it would reduce mortalities by 83%, which  
3177 would reduce overall fence strike mortality rate down to 1.62%. For our calculations we  
3178 assumed 100% of all birds in the covered area would be exposed to fence strikes

3179 annually, we also assumed all high risk fences that are enrolled will be marked as part of  
3180 enrolled landowners SSPs.

3181

3182 **Allowance of Additional 0.5% Take within covered area:**

3183 There may be additional take associated with both the direct and indirect aspects of rangeland  
3184 management, however there have been very few cause and effect studies quantifying this.  
3185 (Rowland 2004). We are providing an allowance of up to 0.5% as a result of these types of  
3186 activities across all covered lands and affecting all birds.

3187 ***Examples might include:***

- 3188 • Striking a sage-grouse with a vehicle while landowners or their agents are performing  
3189 covered activities, implementing conservation measures or recreating.
- 3190 • Small amounts of take from fence strikes to lower risk unmarked fences.
- 3191 • Non-commercial recreational activities.
- 3192 • Drowning in stock tanks fitted with escape ramps.