United States Department of the Interior

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Memorandum

To: Gary Miller, Field Supervisor, La Grande Field Office, La Grande, Oregon

From: Paul Henson, State Supervisor, Oregon Fish and Wildlife Office
Portland, Oregon

Subject: Intra-Service Conference Opinion for the five Greater Sage-Grouse Programmatic Candidate Conservation Agreements with Assurances for Private Rangelands in Baker, Crook, Deschutes, Grant, Lake, Malheur, and southern Union Counties, Oregon.

This memorandum transmits the U. S. Fish and Wildlife Service's (Service) Conference Opinion based on our review of the five proposed greater sage-grouse programmatic candidate conservation agreements with assurances for private rangelands in Baker, Crook, Deschutes, Grant, Lake, Malheur, and southern Union Counties, Oregon, and their effects on greater sage-grouse in accordance with Section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U. S. C. 1531 et seq.). Your January 21, 2015 request for a conference was received on January 21, 2015 via email.

This conference opinion is based on information provided in the following documents dated February 10, 2015:

- 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.
- Greater Sage-grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Baker and Union Counties, Oregon between the Baker Valley Soil and Water Conservation District and the United States Fish and Wildlife Service.
- Greater Sage-grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Malheur County, Oregon between the Malheur County Soil and Water Conservation District and the United States Fish and Wildlife Service dated.
- Greater Sage-grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Grant County, Oregon between the Grant Soil and Water Conservation District and the United States Fish and Wildlife Service.
- Greater Sage-Grouse Programmatic Candidate Conservation Agreement with Assurances

for Private Rangelands in Lake County, Oregon between the Lakeview Soil and Water Conservation District and the United States Fish and Wildlife Service.

- Draft Environmental Assessment for A Greater Sage-Grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Baker, Crook/Deschutes, Grant, Lake, Malheur, and southern Union Counties, Oregon.

We appreciate the opportunity to work closely with you on this important project. If you have any further questions regarding this conference, please contact Jennifer Siani at 503-231-6915.

Attachment

CONFERENCE OPINION

Regarding the Effects of the Proposed Programmatic Candidate Conservation Agreements with Assurances for Private Rangelands on the Greater Sage-Grouse in Baker, Crook, Deschutes, Grant, Lake, Malheur, and southern Union Counties, Oregon

Action Agency: U.S. Fish & Wildlife Service

Conference Conducted by: U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
Portland, Oregon

Date Issued: FEB 17 2015

Issued by:

Paul Henson
State Supervisor

File No. : 01EOFW00-2015-FC-0101

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INTRODUCTION

This document represents the U.S. Fish and Wildlife Service's (Service) Conference Opinion (CO) based on our review of the following proposed Programmatic Candidate Conservation Agreements with Assurances (CCAAs) and their effects on greater sage-grouse (*Centrocercus urophasianus*; hereafter sage-grouse) in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*):

- 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 dated February 10, 2015.
- Greater Sage-grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Baker and Union Counties, Oregon between the Baker Valley Soil and Water Conservation District and the United States Fish and Wildlife Service dated February 10, 2015.
- Greater Sage-grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Malheur County, Oregon between the Malheur County Soil and Water Conservation District and the United States Fish and Wildlife Service dated February 10, 2015.
- Greater Sage-grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Grant County, Oregon between the Grant Soil and Water Conservation District and the United States Fish and Wildlife Service dated February 10, 2015.
- Greater Sage-Grouse Programmatic Candidate Conservation Agreement with Assurances for Private Rangelands in Lake County, Oregon between the Lakeview Soil and Water Conservation District and the United States Fish and Wildlife Service dated February 10, 2015.

This CO is based on information provided in the five aforementioned draft Programmatic CCAAs, the associated draft Environmental Assessment dated February 10, 2015, field investigations, and other sources of information. A complete record of this conference is on file at the Service's Oregon Fish and Wildlife Office in Portland, Oregon.

CONFERENCE HISTORY

In anticipation of a final listing decision on sage-grouse by the Service, the five Soil and Water Conservation Districts (SWCDs) representing Baker, Crook, Deschutes, Grant, Lake, Malheur, and Union Counties, Oregon requested assistance from the Service in developing sage-grouse CCAAs for ranch management activities on behalf of private landowners within the aforementioned counties as had been done by the Harney County SWCD for landowners in Harney County, Oregon. A CCAA is a voluntary agreement whereby a landowner agrees to manage their lands to remove or reduce threats to a species at risk of being listed under the ESA. In return for managing their lands to the benefit of a species at risk, the landowner receives assurances against additional regulatory requirements should that species ever be listed under the ESA.

- On March 20, 2014, the Service met with the Malheur County SWCD, Oregon State University (OSU) Extension, Natural Resource Conservation Service (NRCS), Oregon Department of Fish and Wildlife (ODFW), and private landowners to discuss developing a sage-grouse CCAA for private lands in Malheur County, Oregon.
- On April 8, 2014, the Service met with multi-county SWCDs, NRCS, and OSU Extension, to discuss moving forward with developing sage-grouse CCAAs for private lands in Grant, Baker, Union, Malheur, Crook, Deschutes, and Lake Counties, Oregon.
- On May 12, 2014, the Service held a conference call with the multi-county SWCDs, NRCS, and OSU Extension, to discuss the development of the CCAAs, potential budget needs, and timelines.
- On June 11, 2014, the Service received draft CCAAs for Baker, Grant and Malheur counties.
- On June 12 2014, the Service held an intra-agency planning call between the Oregon Fish and Wildlife Office, the Bend Field Office and the La Grande Field Office to coordinate planning efforts for the multi-county CCAAs.
- On June 23, 2014, the Service met with representatives from all 5 SWCDs, NRCS, and OSU Extension at the Eastern Oregon Agricultural Research Center, in Burns, Oregon to coordinate planning efforts for the multi-county CCAAs, potential budget needs, potential grant opportunities, and timelines.
- On June 30, 2014, the Service held a conference call with the multi-county SWCDs, NRCS, OSU Extension, to discuss the RCPP grant proposal and application.
- On July 14, 2014, the Service sent draft CCAAs to the multi-county SWCDs, NRCS, and OSU Extension group for their review.
- On July 31, 2014, the Service met with the Baker County SWCD and a private landowner to discuss the development of a Site Specific Plan (SSP) under the county-wide Baker SWCD CCAA.
- On August 5, 2014, the Service met with the Baker County SWCD and a private landowner to discuss the development of an SSP under the county-wide Baker SWCD CCAA.
- On September 9, 2014, the Service met with the Baker County SWCD and a private landowner to discuss the development of an SSP under the county-wide Baker SWCD CCAA.
- On September 10, 2014, the Service met with multi-county SWCDs, NRCS, and OSU Extension, to discuss development of the CCAAs, EA, potential budget needs, potential grant opportunities, and timelines.
- On September 25, 2014, the Service met with the Baker County SWCD and a private landowner to discuss the development of an SSP under the county-wide Malheur SWCD CCAA
- On October 15, 2014, the Service presented to private landowners in Lake County in partnership with Lakeview SWCD to inform potential landowners of the CCAA under development, answer questions about enrollment and landowner responsibilities for participation in the CCAA.
- On October 23, 2014, the Service met with the Baker County SWCD and a private landowner to discuss the development of an SSP under the county-wide Baker SWCD CCAA.

- On December 2, 2014, the Service published the five Draft Programmatic Candidate Conservation Agreements With Assurances and Receipt of Applications for Enhancement of Survival Permits for the Greater sage-grouse in Oregon, and Draft Environmental Assessment (EA) in the Federal Register and opened a 30-day comment period.
- On January 2, 2015, the 30-day comment period on the draft CCAAs and the associated EA closed.

CONFERENCE OPINION

1. Description of the Proposed Action

This section provides a brief summary of the proposed action and its scope. This CO has been prepared to address the impacts to sage-grouse of the proposed issuance of an Enhancement of Survival Permit (permit) upon approval and signing of the CCAAs to each SWCD having jurisdiction in Baker, Crook, Deschutes, Grant, Lake, Malheur and Union Counties for a total of five permits across seven counties. The Crook SWCD entered into a cooperative agreement with Deschutes SWCD that will delegate regulatory authority to Crook SWCD to administer the CCAA for sage-grouse habitat in Deschutes County. Additionally, the Baker Valley SWCD has jurisdiction over sage-grouse habitat in both Baker County and southern Union County. The Baker Valley, Crook, Grant, Lake, and Malheur County SWCDs will enroll private landowners into the five CCAAs through Certificates of Inclusion (CIs) that will transfer the incidental take coverage of the permit to landowners for their covered activities should the sage-grouse be listed.

The CCAAs provide a streamlined process for private landowners to voluntarily participate in the county-wide CCAAs for sage-grouse through the completion of site specific plans (SSPs) with SWCD assistance. Upon Service approval of the SSP, landowners will be issued a CI to receive incidental take coverage under the Permit. The purpose of the permit is to provide private landowners an exemption to section 9(a)(1)(b) of the ESA prohibiting "take" of sage-grouse while carrying out otherwise lawful rangeland management practices in the event that this species is listed under the ESA in the future. Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. If the species is listed, this CO may be adopted by the Service as a final Biological Opinion.

In return for signing on to the CCAAs, the Service provides landowners with assurances that no additional Conservation Measures (CMs) or additional land, water, or resource use restrictions, beyond those voluntarily agreed to, will be required should sage-grouse become listed as a threatened or endangered species, as long as the CCAA is being implemented as agreed. The only exception is when an unforeseen circumstance occurs (See *Section 17: Unforeseen Circumstances* in each CCAA). This approach is consistent with the CCAA Final Rule and the regulations implementing the rule. The CCAAs would be in effect for 30 years following their approval and signing by the Service and the SWCDs. The associated permits authorizing take of the species would also have a term of 30 years from the date the permit is issued. While the species remains unlisted, the Service may renew the CCAAs based upon a re-evaluation of the CCAA's ability to continue to meet the CCAA standard. At any time, an individual landowner may also voluntarily terminate their enrollment in a CCAA with a 30-day written notice.

The CCAAs all contain one mandatory conservation measure: **CM 1: Maintain contiguous habitat by avoiding further fragmentation.** The objective for this required CM is for no net loss of sagebrush habitat and to maintain large acreages of contiguous sagebrush habitat, free from development or habitat conversion. This required measure is included in the CCAAs for preventing and/or reducing habitat fragmentation, the primary threat to sage-grouse. In addition to this CM, the CCAAs include 65 other CMs to address threats to sage-grouse. For further details on the proposed action, refer to the CCAAs, specifically *Section 10: Covered Activities, Section 15: Changed Circumstances, and Appendix A: Conservation Measures.* The complete CCAAs are incorporated by reference herein. This CO considers effects on sage-grouse from issuance of a permit to each SWCD pursuant to section 10(a)(1)(A) of the ESA and the Service's CCAA final rules (64 FR 326726, June 17, 1999, 69 FR 24084; May 3, 2004) for covered activities in the CCAAs.

To ensure that the CMs are adequate, private landowners and SWCDs must undertake or allow certain actions identified below (taken from *Chapter 9: Responsibilities of the Parties* of the CCAA):

Landowners will:

- Assist in the development of mutually agreeable SSPs in cooperation with the SWCD and the Service and cosign the SSP/CI document upon receiving a Letter of Concurrence from the Service;
- Implement all agreed upon CMs in their SSP;
- Allow SWCD and Service 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 CCAA report;
- Record new observations of noxious weeds that they incidentally find;
- Report observed mortalities of sage-grouse to the SWCD within 48 hours; and
- Cooperate and assist with annual and long term monitoring activities and other reporting requirements identified in the SSP.

The SWCD will:

- Conduct public outreach and education to encourage enrollment of landowners in the CCAA through SSPs/CIs;
- Enroll landowners according to the steps outlined in *Chapter 3: Application and Enrollment Process;*
- Use the mutually agreed upon tracking system to protect participant privacy;
- Prepare and review SSPs/CIs for accuracy and cosign the SSP/CI document upon receiving a Letter of Concurrence from the Service;
- Assist in implementation of conservation measures, monitoring, or other measures if agreed upon during the development of the SSP by the landowner, SWCD, and Service;

- Ensure terms and conditions included in the SSPs are being implemented as agreed upon;
- Collect and evaluate monitoring data to determine if CMs are providing the desired habitat benefit and provide a report of monitoring results to the landowner and copies of summary reports to the Service;
- Provide technical assistance to aid enrolled landowners in implementing the CMs;
- Work with enrolled landowners and other agencies (e.g., OSU Extension, NRCS) to facilitate appropriate rangeland monitoring and/or training;
- Provide support and assist in obtaining funding from other sources for the implementation of CMs;
- Monitor and report projects (e.g., implementation of CMs) in order to determine success and adaptations needed;
- Immediately report to the Service and ODFW any observed or reported mortalities of sage-grouse;
- Meet annually with the Service to present annual and trend monitoring information;
- Protect, to the maximum extent available under Federal, State, and local laws, against the release or disclosure of all confidential personal and/or commercial information provided by enrolled landowners and collected, gathered, prepared, organized, summarized, stored, and distributed for the purposes of developing and implementing this CCAA; and
- Provide notice to enrolled landowners when a request for public records concerning this CCAA is made, and allow the enrolled landowner to prepare a notification requesting that any confidential personal and/or commercial information be withheld.

2. Analytical Framework for the Jeopardy Determination

In accordance with policy and regulation, the jeopardy analysis in this CO relies on four components: (1) the *Status of the Species*, which evaluates the sage-grouse's rangewide condition, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the sage-grouse in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the sage-grouse; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the sage-grouse; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the sage-grouse.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the sage-grouse's current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the sage-grouse in the wild.

The jeopardy analysis for the sage-grouse in this CO places an emphasis on consideration of the rangewide survival and recovery needs of the sage-grouse and the role of the action area in the survival and recovery of the sage-grouse as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

3. Status of the Greater Sage-Grouse (Rangewide)

Detailed descriptions of rangewide and Oregon threats are available in the 12-month warranted but precluded sage-grouse finding (USFWS 2010), as well as the original and updated ODFW Greater Sage-grouse Conservation Assessment and Strategy for Oregon (Hagen 2005, 2011).

3.1 Status

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

Between 1999 and 2003, the Service received eight petitions to list various populations of sage-grouse under the ESA. On January 12, 2005, the Service published a finding that the sage-grouse did not warrant rangewide listing. This "not warranted" finding was challenged in court, and in December 2007, a federal judge ordered the Service to reconsider its decision. On March 23, 2010, the Service released its finding that the sage-grouse warranted listing under the ESA, but the listing was precluded by other, higher priority actions thereby conferring candidate status on the sage-grouse (USFWS 2010). The primary threats to the sage-grouse, as defined in the 2010 finding, are habitat loss, fragmentation, and degradation. In the Service's 2010 finding, additional concerns were identified as threats, including an increase in the use of sagebrush habitat for renewable energy and the spread of West Nile Virus (WNv). The Service is scheduled to make a new listing decision as to whether or not to list the sage-grouse under the ESA in September 2015.

3.1.1 Life History

Sage-grouse are the largest North American grouse species with adult males ranging from 26 to 30 inches and weighing between 4 and 7 pounds, while adult females are smaller, ranging in length from 19 to 23 inches and weighing between 2 and 4 pounds. They are considered sagebrush obligates, resulting in a high degree of correlation between the distribution of sagebrush and the distribution of sage-grouse. They also exhibit strong site fidelity for breeding, nesting, and wintering. Sage-grouse are known for their elaborate mating ritual wherein males congregate and perform a courtship dance on a specific breeding area called a lek. Lek sites are typically open areas within sagebrush stands that have good visibility for predator detection and good acoustical qualities so the sounds of display activity can be heard by other sage-grouse. Male sage-grouse display on leks in early morning and late evening to attract females. The timing of lek attendance varies considerably depending on snow depth, elevation, weather, and geographic region, with first attendance ranging from the end of February to early April and ending in late May or early June (Hagen 2011). Breeding activities occur from March to early June; however, the lek is considered the center of year-round activity for resident grouse populations (Eng and Schladweiler 1972, Wallestad and Pyrah 1974, Wallestad and Schladweiler 1974). Although many males are present on a lek, females choose the same one or two males on a lek for mating (Gibson et al. 1991), leading to high levels of reproductive skew. Like many

grouse species, males remain on the lek following mating and do not provide paternal care, whereas females leave the lek and begin their nesting effort after mating.

3.1.2 Distribution

Sage-grouse were once found in most sagebrush habitats east of the Cascades but now occupy approximately 56 percent of their historical range. The conversion of sagebrush steppe to agricultural land in the Columbia Basin alone was responsible for the loss of an estimated 1.5 million acres of sage-grouse habitat. The species has been extirpated in five states - Arizona, New Mexico, Oklahoma, Kansas, Nebraska, and in the Canadian province of British Columbia (Schroeder et al. 2004). It is considered at risk of local extinction in Washington, California, Utah, Colorado, North Dakota, and South Dakota and in the Canadian provinces of Alberta and Saskatchewan due to long-term population declines and fragmented landscapes (Connelly and Braun 1997). Even in Oregon, Nevada, Idaho, Wyoming, and Montana, where the species is considered relatively secure, long-term population declines have averaged 30 percent (Connelly and Braun 1997, Garton et al. 2011). Within the extant range of Oregon, spring population indices have demonstrated an overall decline since the 1940s; however, population indices over the last 30 years suggest a relatively stable statewide population (Hagen 2005, 2011). Habitat loss and fragmentation are the primary cause for long-term changes in population abundance and distribution (USFWS 2010).

3.1.3 Habitat and Diet

Optimum sage-grouse habitat consists of a healthy sagebrush ecosystem complete with sagebrush plants (primarily basin big sagebrush *(Artemisia. tridentata* ssp. *tridentata),* mountain big sagebrush *(A. t.* ssp. *vaseyana),* Wyoming big sagebrush *(A. t.* ssp. *wyomingensis),* and low sagebrush *(A. arbuscula)* in Oregon) and a strong native herbaceous understory composed of grasses and forbs (Hagen et al. 2007). Their diet is dominated by leaves year round but they also eat buds, stems, flowers, and fruit. In late spring and summer during the breeding season, insects such as grasshoppers, beetles, and ants become incorporated into the diet and are particularly important during the first 3 weeks of a chick's life (as summarized by Schroeder et al. 1999). Sage-grouse adults and chicks depend on high quality forage in riparian/wetland areas during the late growing season when upland communities are dry and juvenile birds are still growing (Savage 1968, Oakleaf 1971, Crawford et al. 2004, Gregg and Crawford 2009). Research suggests that when sage-grouse are forced to transition to a fall/winter diet of sagebrush earlier in the season during drought years, sage-grouse chicks have lower survival (Drut et al. 1994). In effect, riparian/wetland areas help fill the needs of a protein rich diet of forbs and insects before they change to a diet dominated by sagebrush leaves during late fall and winter.

In addition to requiring sagebrush for food, sage-grouse also require sagebrush for lek sites and for nesting habitat. On average, 80 percent of nests are within 4 miles of the lek, but some females have been shown to nest 12 miles from a lek (Hagen 2011). Nests are typically shallow bowls lined with leaves, feathers, and small twigs placed on the ground at the base of live sagebrush; however, nests have been found under other plant species (Connelly et al. 1991, Gregg 1991). Sage-grouse females that nest under sagebrush tend to have higher nest success rates (53 percent) than those females nesting under other species (22 percent; Connelly et al. 1991). In addition, female sage-grouse tend to select nest sites under sagebrush plants that have

large canopies (Hagen et al. 2007). Sagebrush canopies provide overhead cover and are often associated with an herbaceous understory that provides lateral cover for the birds and allows them to hide from predators (Patterson 1952, Klebenow 1969, Wallestad and Pyrah 1974, Gregg 1991, Gregg et al. 1994, Holloran et al. 2005). Female sage-grouse nesting in cover conditions that provide both overhead and lateral cover have higher nest success rates than those nesting under lesser cover conditions (Wallestad and Pyrah 1974, DeLong et al. 1995, Holloran et al. 2005).

4. Environmental Baseline

The preamble to the implementing regulations for section 7 (51 FR 19932; third paragraph, left column) contemplates that the evaluation of "...the present environment in which the species or critical habitat exists, as well as the environment that will exist when the action is completed, in terms of the totality of factors affecting the species or critical habitat...will serve as the baseline for determining the effects of the action on the species or critical habitat." The regulations at 50 CFR 402.02 define the environmental baseline to include "the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process." The analyses presented in this section supplement the above Status of the Species evaluation by focusing on the current condition of the sage-grouse in the action area, the factors responsible for that condition (inclusive of the factors cited above in the regulatory definition of environmental baseline), and the role the action area plays in the survival and recovery of the sage-grouse. Relevant factors on lands surrounding the action area that are influencing the condition of the sage-grouse were also considered in completing the status and baseline evaluations herein.

4.1 Status of the Species in the Action Area and Role of the Action Area in the Conservation of the Species

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). For the purposes of the CO, the Service recognizes the action area encompasses private rangelands that can be enrolled by SWCDs in the Programmatic CCAAs in Baker, Crook, Deschutes, Grant, Lake, Malheur, and Union Counties, Oregon (shown in Figure 1).

Sage-grouse habitat on lands within the action area is designated as Preliminary Priority Habitat (PPH) or Preliminary General Habitat (PGH; See Table 1). For purposes of analysis, the Service used the PPH and PGH designations as representing the best current estimate of sage-grouse habitat and these designations are defined as follows:

- **PPH** - Areas that have been identified as having the highest conservation value to maintaining sustainable sage-grouse populations. These areas correspond to Core Area Habitat in the ODFW Sage-grouse Conservation Assessment and Strategy for Oregon (ODFW 2011) which includes known breeding, late brood-rearing, and known winter concentration areas. These areas also correspond to Priority Areas for Conservation (PACs) as identified in the Service's 2013 Conservation Objectives Team Report that

include the most important areas for maintaining sage-grouse populations across the landscape.

- **PGH** - Areas of occupied seasonal or year-round habitat outside of PPH. These areas include Low Density Habitat as described in ODFW Sage-grouse Conservation Assessment and Strategy for Oregon, as well as additional areas of occupied habitat.

Table 1. Covered area acres of PPH and PGH for Baker Valley, Crook, Grant, Lake, and Malheur County SWCD Programmatic CCAAs

SWCD	PGH (acres)	PPH (acres)	Total (acres)
Baker Valley	225,465	258,214	483,679
Crook*	169,708	314,811	484,519
Grant	45,775	10,921	56,696
Lake	283,439	115,185	398,624
Malheur	414,021	472,528	886,549
Total	**1,138,408**	**1,171,659**	**2,310,067**

* This includes acres of habitat in both Crook and Deschutes Counties, Oregon.

Sage-grouse have been divided into five populations in Oregon known as the Baker, Central Oregon, Northern Great Basin, Western Great Basin, and Klamath OR/CA populations (Garton et al. 2011; Hagen 2011). Of these, only the Baker and the Central Oregon populations are entirely found within Oregon. The Northern Great Basin population is also found within Idaho, Utah, and Nevada. The Western Great Basin population is also found within California and Nevada. The Klamath OR/CA population is found in both Oregon and California, however, birds have not been documented there recently (USFWS 2013).

4.1.1 Baker Valley SWCD

The Baker Valley SWCD has jurisdiction over lands in both Baker and southern Union Counties, which support similar populations of sage-grouse as they did 20 years ago (Hagen 2011). While the majority of lands within Baker County are in the Baker population of sage-grouse, the southern portion of the county is within the Northern Great Basin population (to be discussed under *Section 4.1.5 Malheur SWCD*). The portion of southern Union County with sage-grouse habitat is contained within the Baker population.

The Baker population has approximately the same distribution as the area covered by the Baker administrative unit identified in Oregon's Sage-grouse Conservation Strategy (Hagen 2011). The Baker spring population was estimated to be 872 to 1,650 birds in 2010, the smallest extant population of sage-grouse that is exclusively in Oregon. Garton *et al.* (2011) based their Baker population assessment on minimum estimate of 137 birds in 2007 and estimated a 61.9 percent chance there will be fewer than 50 birds in the population by the year 2037, and a 66.8 percent chance of fewer than 50 birds by 2137. ODFW lek counts indicated more than 300 males in Baker County in 2011. Since systematic counts began in 1989, the number of counted males/lek has remained relatively stable (Hagen 2011). Due to habitat and topography, it has been assumed the Baker population has little connectivity with other sage-grouse populations. However, recent telemetry information suggests that at least some birds move between the Weiser population in Idaho and the Baker population (USFWS 2013).

Nearly 300,000 acres in this region were identified as priority areas for conservation, and includes much of the current range of the Baker population. Unfortunately, due to habitat and topography changes over time, habitat suitability for sage-grouse has declined. Invasive weeds and juniper encroachment are considered to be the primary threats to this population (Hagen 2011), but other threats to this population include renewable energy development (primarily wind), energy transmission, and Off Highway Vehicle (OHV) recreation (USFWS 2013).

The Baker population is part of Management Zone IV, the Snake River Plain (Stiver *et al.* 2006). This zone represents one of the largest areas of connected sage-grouse habitat, as demonstrated by Knick *et al.* (2011), and supports the largest population of sage-grouse outside of the Wyoming Basin (Garton *et al.* 2011). The Snake River Plain management zone includes sage-grouse populations in Oregon, Idaho, Nevada, Utah and Montana. Garton *et al.* (2011) predicted a 10.5 percent chance this Management Zone will fall below 200 males by 2037, and a 39.7 percent chance it would fall below 200 males by 2107.

4.1.2 Crook SWCD

Crook and Deschutes Counties are located in central Oregon, where there is a relatively large population of sage-grouse remaining in the Central Oregon population. The minimum spring population for the Central Oregon population was estimated at 1,775 to 2,084 birds in 2010 but it has experienced steady population declines since 1980 (Hagen 2011). Population estimates suggest that this population will remain fairly resilient in 30 years, but not in 100 years (Garton et al. 2011). There is a 15.2 percent chance the population will decline below 500 by 2037, and a 91.3 percent chance that fewer than 500 birds will be in the population by 2137 (Garton *et al.* 2011).

This population is estimated to have only 53 percent of historic sagebrush habitat, having lost more historic habitat than any other sage-grouse administrative unit in Oregon. The area also has more privately owned sage-grouse habitat (48 percent) than most other sage-grouse management zone populations in Oregon. This population faces a wide suite of threats, including juniper encroachment, (Freese 2009) which threatens over 900,000 acres of the 1.8 million acres of sagebrush habitat in in this area (Hagen 2011). Additional threats include invasive weeds, renewable energy development (both wind and geothermal), transmission, roads, OHV recreation, and residential development. Projections based on historic trends suggest this population is at risk, but in the last 2 years there have been a number of positive developments including thousands of acres of habitat improvement under the NRCS's Sage-grouse Initiative. Juniper encroachment threatens connectivity with other Oregon populations to the south and east (Hagen 2011).

Priority areas for conservation and low density (non-priority but managed) habitat combined capture all but three percent of known summer, one percent of known breeding, and one percent of known wintering habitat for the Central Oregon population of sage-grouse. Most of the sites within this population probably have some connectivity with other sites in this population, though verification from genetics is lacking.

The Central Oregon sage-grouse population is part of Management Zone V, the Northern Great Basin (Stiver *et al.* 2006). There are three other sage-grouse populations identified in this

management zone, known as Klamath, Warm Springs Valley, and the Western Great Basin. Garton *et al.* (2011) predicted a 2.1 percent chance this Management Zone will fall below 200 males by 2037, and a 29.0 percent chance it would fall below 200 males by 2107. Only two of the populations (Central Oregon and Western Great Basin) had sufficient information for a population assessment by Garton *et al.* (2011). Bureau of Land Management (BLM) lands are a major constituent of sagebrush landscapes in the Northern Great Basin (62 percent), followed by private (21 percent), Forest Service (10 percent), state (8 percent), and then other ownerships (Knick 2011). This zone is part of a stronghold for sage-grouse along with Management Zones III and IV because the three zones contain the largest area of habitat rangewide with low similarity to extirpated portions of the range (Wisdom *et al.* 2011).

4.1.3 Grant SWCD

Grant County has 78,354 total acres of sagebrush habitat, the smallest portion of sagebrush habitat within Oregon. While just over 22,000 acres of sage-grouse habitat are located on state or federal land, the remaining 56,696 acres are on private land. This is the smallest amount of sagebrush habitat covered by any of the five CCAAs. Only the southwestern corner of Grant County is located within one of the sage-grouse populations; the rest of the county only contains a small amount of sage-grouse habitat. The southwestern corner is part of the Northern Great Basin population (to be discussed under *Section 4.1.5 Malheur SWCD*). Primary threats to sage-grouse in Grant County are juniper encroachment and invasive weeds.

4.1.4 Lake SWCD

Lake County is part of the Central Oregon sage-grouse population previously discussed under *Section 4.1.2 Crook SWCD*, but it is also part of the Western Great Basin population of sage-grouse. Oregon's portion of the latter population has some of the best habitat and highest sage-grouse densities in the state, including Hart Mountain National Antelope Refuge and Trout Creek Mountains (USFWS 2013). In just Oregon, the spring population in the Western Great Basin likely exceeded 10,000 birds in 2010 (interpolation from Hagen 2011) and >80 percent of the historical sage-grouse habitat remains intact (Hagen 2011). In the Lakeview administration unit, which comprises most of the Western Great Basin population in Oregon, about 78 percent of the region is administered by the BLM and the Service manages more than 278,000 acres.

Rangewide for sage-grouse, the area containing the Western Great Basin population contains one of four remaining large intact expanses of sagebrush habitat and connects south-central Oregon with northwest Nevada, with most of the sagebrush dominated landscape in Oregon (Knick and Hanser 2011). Habitat fragmentation increases to the south and west in the population, with northeast California having a high similarity with portions of extirpated range (Wisdom *et al.* 2011). Garton *et al.* (2011) estimated for the Western Great Basin a minimum population estimate of 5,904 males in 2007 (includes NE CA, NW NV). Modeling suggested there is a 6.4 percent chance birds will drop below 500 by the year 2037, but a 99.1 percent chance the population will be below 500 by 2137 (Garton *et al.* 2011). The Western Great Basin is the most resilient population in Management Zone 5, but reducing threats alone is not likely to ensure long-term persistence in some areas. Resiliency needs to be improved in the California and Nevada portions of the Western Great Basin with increased habitat suitability in terms of shrub densities and native grasses and forbs.

Invasive weeds, fire, and juniper encroachment (particularly on the western edge) represent the greatest risks to the Western Great Basin population. Renewable energy development (wind and geothermal) and wild horses have been identified as a threat to sage-grouse habitat in portions of Oregon's (e.g., Steens, Dry Valley/Jack Mountain Action Areas) Western Great Basin population. The Lone Willow portion of the Western Great Basin population (connected with Oregon) was affected by a very large wildfire in 2012. The Holloway Fire burned approximately 214,000 acres in Nevada and 245,000 acres in Oregon of which about 140,000 acres in Nevada and 221,000 acres in Oregon were considered important or essential sage-grouse habitat. The Miller Homestead fire in Oregon included an additional 162,000 acres of sagebrush habitat within its perimeter. Fire and annual grasses should be characterized as substantial and imminent threats within this portion of the population.

4.1.5 Malheur SWCD

The vast majority of Malheur County is part of the Northern Great Basin population of sage-grouse and is located in Management Zone IV. The southeastern corner of the county is part of the Western Great Basin population within Management Zone V. In Malheur County, the sage-grouse population has fluctuated around the 2003 estimate since 1993 (Hagen 2011). Oregon represents the western part of this large population, which is shared with southern Idaho, northeast Nevada, and northwest Utah. Within Oregon, this represents one of the largest populations of sage-grouse. The delineation of the Northern Great Basin population doesn't correspond well to any existing assessment for Oregon, but does include almost all of the Vale administrative unit, as well as portions of the Burns administrative unit. In Oregon alone, the spring population in the Northern Great Basin is likely several thousand birds, with 2011 spring lek counts approaching 3,000 males (in the Beulah, Malheur River, Owyhee, and eastern portion of Whitehorse Wildlife Management Units).

The area containing the Northern Great Basin population has a large amount of publicly managed land (largely BLM). The area also includes among the least fragmented and largest sagebrush dominated landscapes within the extant range of sage-grouse (Knick and Hanser 2011). However, the northern and eastern portions of the population are more environmentally similar to areas where sage-grouse have been extirpated (Wisdom *et al.* 2011). A recent rate of change analysis indicated that at least part of this large population has been stable to increasing from 2007 to 2010. Garton *et al.* (2011) indicated that this population had virtually no chance of declining below 50 in 30 or 100 years. Population analysis indicated that sage-grouse will fluctuate around a carrying capacity that will decline from an estimated 6,770 males in 2007 to 1,787 males in 2037 if current trends continue (Garton *et al.* 2011).

Loss of sagebrush habitat has been and continues to be threat to the population in Oregon. Between 1963 and 1974, 500,000 acres of sagebrush habitat was seeded to crested wheatgrass or sprayed with herbicide, and 1,600 water developments and 463 miles of pipeline were installed in the Vale District BLM's area for the Vale project. More recently, wildfire is the most significant threat to landscape scale losses of sagebrush habitat as indicated by the 2012 Long Draw fire. That fire affected 582,000 acres of sagebrush with 455,000 of those acres considered either Core or Low Density sage-grouse habitat under Oregon's conservation strategy. In conjunction with fire, invasive weeds are also one of the greatest risks the 4+ million acres of sagebrush habitat for this population in Oregon. More than 580,000 acres is already dominated

by invasive species (Hagen 2011b). In many instances, these areas were historically dominated by Wyoming big sagebrush habitat. Other threats in this region include mining development, renewable energy development, transmission, and juniper encroachment at higher elevations. WNv has also been consistently detected in mosquitoes in this region (http://public.health.oregon.gov/) and the population was subjected to the largest known WNv mortality event involving sage-grouse in Oregon (2006). Despite efforts to manage wildfire risks, wildfires and invasive species have continued to reduce the quality of habitat in portions of this area.

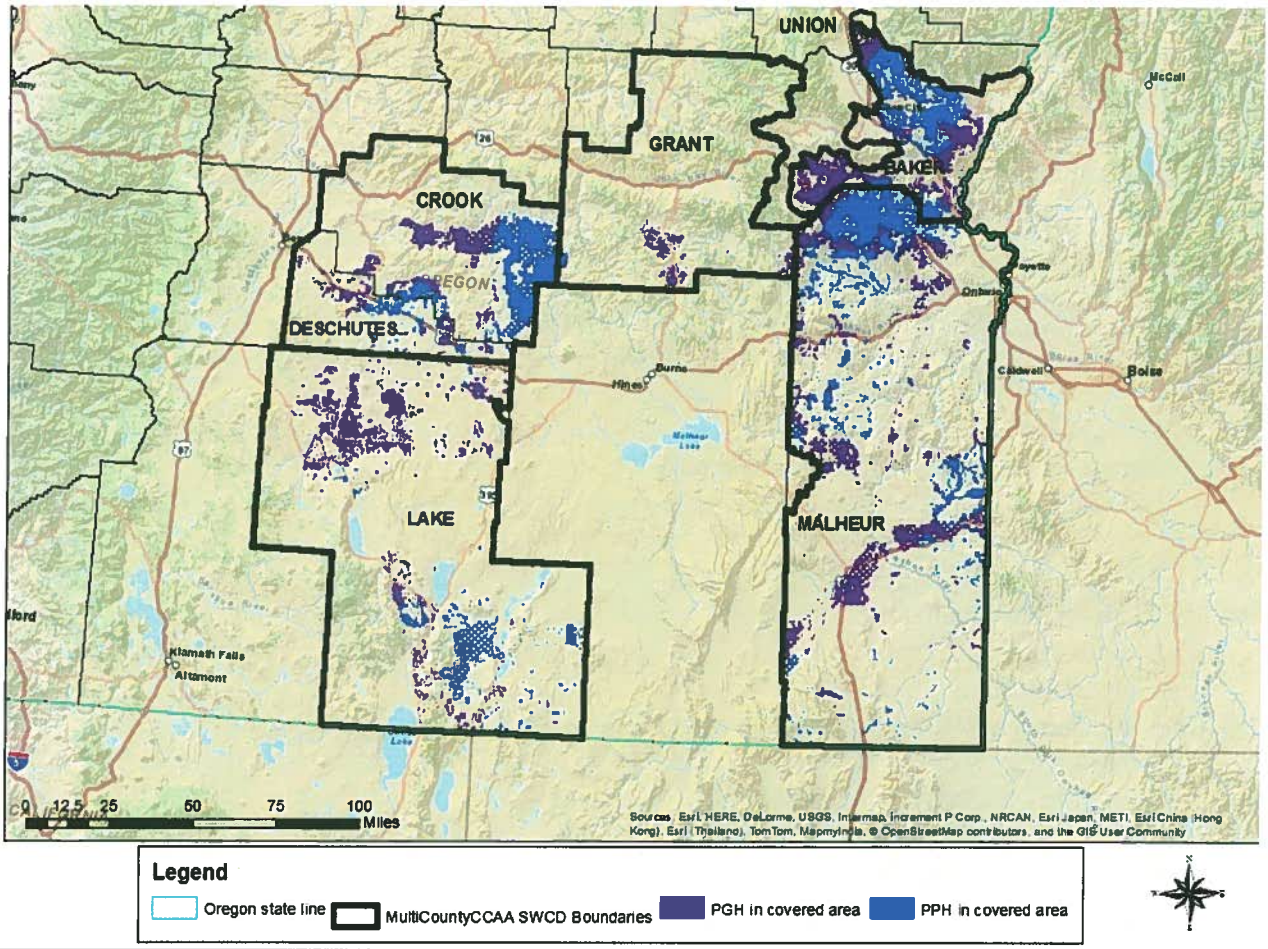

Figure 1. Private Lands available for enrollment in the Programmatic greater sage-grouse CCAAs

4.2 Factors Affecting Species Environment within the Action Area

The long-term persistence of sage-grouse will depend on maintenance of intact landscapes. Sage-grouse are landscape-scale species and the destruction and fragmentation of their habitat has contributed to significant population declines over the past century. If current trends persist, many local populations may disappear in the next several decades, with remaining fragmented populations vulnerable to extinction.

Based on a review of the scientific literature related to ranch management, threats to sage-grouse and their habitats throughout the state of Oregon may include, but are not limited to, the following specific factors (USFWS 2010):

- Habitat fragmentation decreases habitat quantity and quality and threatens the long-term persistence of sage-grouse.
- Infrastructure (e.g., power lines, roads) fragments sage-grouse habitat, decreasing sage-grouse use and habitat quality.
- Establishment of plant communities that do not provide suitable habitat (i.e. monocultures of non-natives) reduces sage-grouse habitat quality and quantity.
- Introduction of non-native invasive plant species can eliminate native plant communities important to sage-grouse, thereby reducing habitat quality and quantity.
- Wildfire removes long-lived species such as sagebrush, thereby reducing sage-grouse habitat quality and quantity.
- Surface water developments (ponds) increase potential mosquito habitat, thereby resulting in increased sage-grouse mortality from disease (i.e. WNv) in some instances.
- Sagebrush management (e.g., prescribed fire, chemical, or mechanical) can result in a reduction of sage-grouse habitat quality and quantity.
- Grazing management practices that alter shrub cover and grass and forb composition can reduce sage-grouse habitat quality and quantity.
- Concentrated livestock use can affect vegetation and soil structure, thereby reducing sage-grouse habitat quality and quantity.
- Encroachment of woodland species into sage-grouse habitat can lead to a reduction in use or abandonment of habitat by sage-grouse.
- Livestock, human, and vehicle activity can physically disturb birds and cause them to leave leks or abandon nests, thereby resulting in decreased reproductive success.
- Water diversions and spring developments that dry up meadow and riparian areas reduce sage-grouse habitat quality.
- Farm and ranch facilities that provide additional raptor perches or dead piles or garbage dumps attract mammalian and avian predators, thereby increasing opportunities for predation on sage-grouse and sage-grouse nests.
- Application of insecticides removes insects important to sage-grouse, thereby reducing sage-grouse habitat quality.
- Prolonged drought harms plants important to sage-grouse, thereby reducing sage-grouse habitat quality and quantity.
- Livestock watering tanks and troughs without wildlife escape ramps cause sage-grouse mortality by entrapment and drowning.
- Concentrated or overabundant wildlife populations can harm plant communities important to sage-grouse, thereby reducing habitat quality and quantity.
- Poorly designed or located fences (e.g., fences in saddles or along ridgelines) provide a collision risk for birds, thereby resulting in serious injury or death to sage-grouse.
- Over-abundant predator numbers may affect local sage-grouse populations.

Currently, hunting is not considered a significant threat to sage-grouse populations (USFWS 2010). In southeastern Oregon, there are healthy populations of sage-grouse with limited

hunting. ODFW allows harvest of up to five percent of the projected fall population of birds, and in practice, harvest has been estimated at less than three percent of the fall population in hunted areas (Hagen 2005). Current research found that such limited hunting does not affect populations (Connelly et al. 2000; Sedinger et al. 2010). Hunters contribute to sage-grouse management by submitting wings of harvested birds to ODFW, allowing biologists to learn more about age, sex, reproductive success, and distribution of the species.

Many of these threats are expected to be exacerbated by the effects of climate change, which may influence long-term habitat trends. Climate change will likely alter the range of individual invasive species, increasing fragmentation and habitat loss of sagebrush communities. Projected climate change and its associated consequences have the potential to affect sage-grouse and may increase its risk of extinction, as the impacts of climate change interact with other stressors such as disease, and habitat degradation and loss that are already affecting the species. Arid regions such as the Great Basin where sage-grouse occurs are likely to become hotter and drier; fire frequency is expected to accelerate, and fires may become larger and more severe. The loss of habitat due to wildland fire is anticipated to increase due to the intensifying synergistic interactions among fire, people, invasive species, and climate change. Climate change is expected to result in significant losses to sage-grouse habitat through facilitating conifer expansion at high-elevation interfaces and exotic weed encroachment at lower elevations. While it is not currently possible to predict the extent or location of future fire events, the best scientific and commercial information available indicates that fire frequency is likely to increase in the foreseeable future due to increases in cover of cheatgrass (*Bromus tectorum)* and the projected effects of climate change (USFWS 2010).

5. Effects of the Proposed Action

The effects of the action include the direct and indirect effects of implementing the Federal action (issuance of a 10(a)(1)(A) permit to implement the CCAAs) on the sage-grouse, together with the effects of other activities that are interrelated or interdependent with this action, that will be added to the environmental baseline (50 CFR 402.02). For the CCAAs, the actions are considered to include ongoing and planned rangeland management practices, collectively referred to as "covered activities," and are described in the list below. For a complete description of all covered activities refer to *Section 10: Covered Activities* of the CCAAs.

- Rangeland treatments
- Livestock Management
- Maintenance of outbuildings, fences and corrals, houses, and road maintenance
- Use of off-trail vehicles to conduct activities listed above
- Conservation measures (*Appendix A* of the CCAAs)
- Changed circumstances conservation measures (*Section 15* of the CCAAs)
- Limited use of specific herbicides as described in *Appendix E*
- Inventory and monitoring activities identified in *Section 6* and the Appendices of the CCAAs

Based on the analysis of potential threats associated with ranch and rangeland management practices, and the suite of CMs identified to address those threats, we believe that most negative

impacts to sage-grouse habitat and take of sage-grouse individuals will be avoided to the extent practicable. It is likely, however, that all impacts to habitat and individuals cannot be avoided and that some adverse effects, including incidental take of sage-grouse, will occur. We anticipate that all threats and associated effects described below may result in take of sage-grouse, and thus may require exemption from the incidental take prohibition if the species is listed. We considered three primary types of incidental take from the covered activities: (1) injury or death; (2) harm in the form of habitat fragmentation, loss, or degradation; and (3) harassment in the form of human activities that significantly disrupt normal behavioral patterns such as breeding, feeding, or sheltering. For each type of take, we describe the associated covered activities and conservation measures that will minimize the take. The CMs and sections referenced below can be found in *Appendix A* and *Section 11: Anticipated Incidental Take* of the CCAAs.

5.1 Injury or death

- Fences used for livestock management, especially those in certain high-risk locations, can cause direct mortality to sage-grouse from collision (Beck and Mitchell 2000; Connelly et al. 2004; Crawford et al. 2004; Cagney et al. 2010). The risk of collision with fences will be minimized by limiting new fence construction and marking fences in high-risk locations to make them more visible to sage-grouse.
- Vertical structures such as telephone, power lines and poles, and fence posts serve as raptor perches and therefore can indirectly contribute to injury and death to sage-grouse from avian predators. This risk will be minimized by using perch deterrents where needed.
- Livestock water tanks can pose a drowning risk to sage-grouse when they use them as a water source. This risk will be minimized by properly equipping stock-tanks with escape ramps.
- Herbicides listed in *Appendix E* of the CCAAs are not known to directly injure or kill sage-grouse (USFWS 2010); however, there have been limited studies, which are specific to sage-grouse. The risk of mortality associated with herbicide use will be minimized by only using approved herbicides and implementing all best management practices on enrolled lands. If it is found that these herbicides do injure or kill sage-grouse their use will be discontinued as a covered activity under the changed circumstances provisions.

5.2 Harm

- Improperly managed livestock grazing can result in decreased beneficial grasses and forbs in nesting and brood-rearing habitat (Hagen et al. 2007; Gregg et al. 1994). There are several CMs that address impacts of livestock grazing and the Landowners will be required to modify grazing practices if the threat of "improperly managed livestock grazing" is occurring on the enrolled lands. This risk will be further minimized with annual monitoring and reporting of utilization on enrolled lands as well as adapting to drought or other environmental factors that may increase or decrease forage.

5.3 Harassment

- Due to seasonal accessibility or weather issues, rangeland treatments such as juniper removal from sagebrush habitat may need to be conducted when sage-grouse are utilizing

the enrolled lands. If so, this would cause some temporary harassment of sage-grouse. However, without treatment, juniper encroachment can make habitat unsuitable for sage-grouse. Harassment will be minimized through careful scheduling of treatments.

- Livestock management activities such as moving cattle to different areas may cause sage-grouse to flush or otherwise disrupt their behavior. In the majority of instances, this disturbance is expected to be of very short duration such that it will only infrequently rise to the level of take.
- Activity near active leks may cause birds to flush or abandon. This risk will be minimized by limiting unnecessary access during certain times of the year when sage-grouse are using the enrolled lands (i.e., lekking, wintering or brood-rearing) as applicable.
- Maintenance of existing fences or the construction of new fences for livestock management can cause harassment of sage-grouse. Risk of disturbance from these activities will be minimized by timing them outside of the breeding season.

5.4 Methods, Assumptions, and Rationale for Anticipated Effects and Incidental Take

This section discusses some of the key methods and assumptions made to estimate impacts and incidental take from the proposed action. Estimated incidental take provided in this CO is based primarily on the risk of birds to disturbance, and the likelihood of their injury or mortality, or reduced breeding, feeding, or sheltering. We estimate risk by evaluating the potential exposure and likely response of individual birds to project-related effects described in this CO.

Importantly, not all birds exposed to a particular disturbance will respond so negatively that effects reach the level of take. In other words, negative effects may occur, such as flushing of birds during livestock management activities, but likely does not rise to a level such that reproduction success, survival, etc. are affected.

The Service assessed the adverse effects or potential risk(s) to the species and its habitat from implementation of the CCAAs. Scientific data that quantify the effects of the proposed projects on sage-grouse, or similar gallinaceous birds, are very limited. Thus, there is uncertainty in generating specific metrics for anticipated adverse effects (such as number of expected mortalities of individuals, or numbers of habitat acres temporarily or permanently lost or temporarily affected). A complex range of factors will influence the response or fate of individual birds to impacts. Factors contributing to this uncertainty include, but are not limited to: (1) inability to accurately measure the nature or extent of potential effects; (2) limited ability to pinpoint the source, or combined sources, of effect; (3) accounting for confounding or stochastic events such as drought; and (4) sources of risk that emerge outside private lands covered under the CCAAs.

Estimated incidental take provided in this CO is based primarily on the risk to disturbance, and the likelihood of their injury or mortality, or reduced breeding, feeding, or sheltering. We estimate risk by evaluating the potential exposure and likely response of individual birds to ranch and rangeland management practices related activities described in this CO.

Lek data and site-specific information on the number of sage-grouse is highly variable across the state of Oregon. ODFW conducts lek counts that are based on the number of sage-grouse (primarily males) attending designated leks ("trend leks") each spring. Each trend lek is counted at least three times at 7 to 10 day intervals between 0.5 hours before and 1.5 hours after sunrise during the breeding season. Trend leks are counted consistently over a number of years, but they represent a sub-sample of all leks in a region. Therefore, we do not have counts for all leks within a given SWCD boundary or county boundary. Thus, the Service used statewide population estimates and the amount and type of sage-grouse habitat (PPH and PGH) on private land available within the SWCD boundaries for each CCAA to estimate the number and density of sage-grouse.

5.4.1 Density and take calculations

The density of sage-grouse statewide was calculated as follows. There are an estimated 24,515 sage-grouse in Oregon based on a 10-year (2004 to 2013) average of the statewide total spring population (ODFW unpublished data 2013). According to Hagen (2011) 90 percent of sage-grouse occupy PPH, which is estimated at 6.57 million acres in Oregon. Using the 10-year minimum breeding population average, sage-grouse densities in PPH are estimated at 0.0034 birds per acre (90 percent of 24,515 equals 22,064 sage-grouse divided by 6.57 million acres of PPH). This statewide average density was then multiplied by the number of acres of PPH covered under each CCAA to come up with an estimated 10-year minimum population average. Average sage-grouse densities in PGH are estimated at 0.0003 birds per acre (10 percent of 24,515 eqauls 2,452 divided by 8.26 million acres). These statewide average densities were then multiplied by the number of acres covered under each CCAA of PPH (ex., 258,214 acres times 0.0034 birds/acre) and PGH (ex., 225,465 acres times 0.0003 birds/acre) using an excel spreadsheet to eliminate errors from repeated rounding of numbers (Table 2, below).

Table 2. Estimated number of sage-grouse within the covered areas by habitat type.

SWCD	PGH (acres)	Birds in PGH	PPH (acres)	Birds in PPH	Total Acres	Total Birds
Baker Valley	225,465	67	258,214	868	483,679	935
Crook*	169,708	50	314,811	1,058	484,519	1,108
Grant	45,775	14	10,921	37	56,696	51
Lake	283,439	86	115,185	392	398,624	478
Malheur	414,021	123	472,528	1,588	886,549	1,711
Total	**1,138,408**	**344**	**1,171,659**	**3,986**	**2,310,067**	**4,283**

* This includes acres of habitat in both Crook and Deschutes County, Oregon.

We recognize that these estimates are based on a number of assumptions. In general, the assumptions would likely result in an overestimate, rather than an underestimate, of take from the proposed action, and thus provide a more conservative approach to anticipated take. As noted above, we also expect that CMs including internal mitigation for developments will minimize adverse effects including the injury and death of individual birds. Refer to Appendix F in the CCAAs for these, and other, assumptions used to estimate exposure rates and incidental take as summarized in Table 3 below.

Table 3. Estimated take of sage-grouse within the covered areas of the five CCAAs

SWCD	# of birds on private lands	Annual Take	% of population taken
Baker Valley	935	49	5.2
Crook*	1,108	57	5.1
Grant	51	3	5.9
Lake	478	25	5.2
Malheur	1,711	90	5.3
Total	**4,283**	**224**	**5.2**

Additionally, we considered the following in our impact assessment but found that these actions are not likely to adversely affect the species and will not result in take:

- **Development** - The only types of permitted development within the CCAAs are maintenance of out-buildings or corrals within a ranch headquarters footprint. Therefore, we do not expect any incidental take as a result of development (see CM 1 and the stipulations on development in *Section 10: Covered Activities* of the CCAAs). There may be minor impacts to birds (flushing, etc.) when permitted development activities occur.
- **Stock tanks** - Drowning in stock tanks has been reported as a cause of sage-grouse mortality. There is very little published information on background mortality rates for sage-grouse drowning in stock tanks that are not equipped with escape ramps. Additionally, we could find no evidence of documented mortalities for stock tanks that have been retrofitted with an escape ramp for sage-grouse; therefore, we do not anticipate take to occur from drowning in stock tanks since the Landowners will be required to retrofit stock troughs in occupied sage-grouse habitat as part of the their site specific plans under the CCAAs.
- **Patches of Unsuitable Habitat** - As part of the CCAAs, the Landowners will be implementing conservation measures to minimize impacts and take to sage-grouse and their habitats. We recognize, however, that some habitat will be unsuitable in areas where livestock congregate (watering, supplements, etc.).

The total amount of annual incidental take associated with the proposed action is 0.9 percent of the estimated 24,515 birds statewide. With implementation of the CCAAs, we anticipate incidental take from covered activities to be 5.2 percent (Table 3) on the enrolled lands when averaged cross all five CCAAs. Authorizing a total annual take of approximately 5.2 percent of the estimated sage-grouse population on private lands within Baker, Crook, Deschutes, Grant, Lake, and Malheur counties will not adversely affect sage-grouse populations (Sedinger et al. 2010; Connelly et al. 2000; ODFW 2010). The authorized take associated with the five CCAAs (5.2 percent), combined with ODFW's actual (3 percent), or allowed (5 percent) harvest rates (ODFW 2011) could account for an average 8.2 to 10.2 percent annual loss of the sage-grouse population in areas that are under these CCAAs and where hunting of sage-grouse occurs. Cumulative impacts of harvest on sage-grouse populations in Oregon are evaluated annually by ODFW. An 8.2 to 10.2 percent loss follows the rangewide sage-grouse management guidelines

that recommend a harvest rate of 10 percent or less for healthy sage-grouse populations (Connelly et al. 2000), and below recently published peer-reviewed science for Colorado and Nevada, which found "at harvest rates <11 percent harvest is unlikely to have an important influence on local population dynamics of sage-grouse" (Sedinger et al. 2010). Additionally, the authorized amount of take may be adjusted if the statewide 10-year minimum spring breeding population average changes by more than 10 percent. Evaluation of take will be based on a rolling 5-year average such that if take is high in one year it will not exceed authorized take unless the 5-year average exceeds the amount of take permitted.

5.5 Interrelated and Interdependent Effects

Interrelated actions are those that are part of the larger action under consideration for consultation and depend on a larger action for their justification. Interdependent activities are those that have no significant independent utility apart from the measure that is under consideration for consultation. No interrelated or interdependent actions have been identified for the proposed action.

6. Cumulative Effects

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this CO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the Act.

In general, land use activities, including agricultural activities, on private lands are expected to continue. Since current land-use activities are expected to continue for lands not enrolled under the CCAAs, many of the threats to the sage-grouse would also continue, including those related to habitat degradation. Habitat condition on lands that are not enrolled would likely remain similar to their current conditions. For these areas, the sage-grouse may be maintained similar to current conditions. If other landowners work cooperatively to develop and implement conservation measures similar to those proposed under the CCAAs, threats to the species would further be reduced.

7. Conclusion

After reviewing the current status of the sage-grouse, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's conference opinion that approving the CCAAs and issuing the associated permits, as proposed, is not likely to jeopardize the continued existence of the sage-grouse. Primarily short-term, localized, and unavoidable adverse effects to the sage-grouse and its habitat are expected to occur from projects implemented under the CCAAs. No critical habitat has been designated for this species; therefore, none will be affected.

We have reached this conclusion based on the following reasons:

- The total amount of annual incidental take associated with this proposed action is 0.9 percent of the estimated 24,515 birds statewide and 5.2 percent of the sage-grouse population on the enrolled lands across all five CCAAs (see Tables 2 and 3).

- CMs implemented through the CCAAs will facilitate avoidance, minimization, and mitigation of threats on approximately 2,310,067 acres of sage-grouse habitat in across seven counties in Oregon.
- Although the adverse effects listed previously may occur as a result of the action, the CCAAs are intended to promote conservation efforts in the context of ranch and rangeland management practices that should result in the improvement of both the habitat and long-term viability of the species by addressing habitat loss, fragmentation, and degradation on enrolled lands.
- These beneficial effects are expected to accrue over time.

8. Incidental Take Statement

Section 9 of the ESA and federal regulations pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to the listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), take that is incidental to and not intended as part of the agency action is not considered to be prohibited under the ESA provided that such take is in compliance with the terms and conditions of this Incidental Take Statement.

The prohibitions against taking the species found in Section 9 of the ESA do not apply until the species is listed. However, the Service advises the SWCD's to consider implementing the reasonable and prudent measures noted below. The incidental take statement would become effective upon listing of the sage- grouse, and following adoption of this CO as a biological opinion. If this CO is adopted as a biological opinion following a listing, these measures, with their implementing terms and conditions, will be nondiscretionary, and must be undertaken by the Service so that they become binding conditions of any permit issued to the SWCDs, as appropriate, for the exemption in section 7(o)(2) to apply. The Service has the continuing duty to regulate the activity covered by this incidental take statement. If the Service (1) fails to assume and implement the terms and conditions or (2) fails to require the SWCDs and/or the landowners to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the Permit, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Service must report progress of the action and it impact on the sage-grouse as specified in the incidental take statement [50 CFR §402.14(i)(3)].

8.1 Amount/Extent of Take Anticipated

After applying the methods and assumptions described above in *Section 5 Effects of the Action*, the Service anticipates incidental take of sage-grouse due to the proposed action. The maximum amount of authorized incidental take from covered activities over the 30-year term of each CCAA would be:

- 1,470 sage-grouse on lands enrolled under the Baker Valley CCAA (49 birds/year)
- 1,710 sage-grouse on lands enrolled under the Crook/Deschutes CCAA (57 birds/year)
- 78 sage-grouse on lands enrolled under the Grant CCAA (3 birds/year)
- 750 sage-grouse on lands enrolled under the Lake CCAA (25 birds/year)
- 2,700 sage-grouse on lands enrolled under the Malheur CCAA (90 birds/year)

This equates to approximately 0.9 percent of the estimated statewide population of 24,515 (average 2004 to 2013). The evaluation of take will be based on a rolling 5-year average such that if take is high in one year it will not exceed authorized take unless the 5-year average annual take exceeds authorized take.

Annual monitoring required as part of the CCAAs (see *Section 6: Inventory and Monitoring* and *Appendix D*) provides an opportunity to track and report incidental take during the 30-year term. The SWCD will report mortality from incidental take to the Service (as required in *Section 9: Responsibilities of the Parties*). Annual reports must be provided to the Service's Oregon Fish and Wildlife Office, Bend Field Office or La Grande Field Office as dictated in each CCAA agreement. If any new information indicates that the activities associated with enrolled ranch and rangeland management practices and associated CM are resulting in take levels different than that described herein, conferencing may be reinitiated to evaluate changes to the CO.

8.2 Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the sage-grouse. If this CO is adopted as a biological opinion following a listing, these measures and their terms and conditions, will be non-discretionary.

8.3 Reasonable and Prudent Measures and Terms and Conditions

The Service believes that the following reasonable and prudent measure and their implementing terms and conditions are necessary and appropriate for the landowners to minimize impacts of incidental take of sage-grouse. If the species is listed, in order to be exempt from the prohibitions of Section 9 of the ESA, the landowners must ensure that implementation of the CCAAs complies with the following Terms and Conditions that implement the Reasonable and Prudent Measure.

8.4 Reasonable and Prudent Measure

1. Provide an annual report that all actions are in compliance as described within the CCAAs and their associated SSP, including numbers of dead or injured sage-grouse.

8.5 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA once the species is listed, the SWCD's must comply with the following terms and conditions, which implement the reasonable and prudent measure described above and outline required reporting/monitoring requirements. If this CO is adopted as a biological opinion following a listing or designation, these terms and conditions will be non-discretionary.

1. All reports, including a summary of compliance, are due one calendar year following the signing of an SSP for the previous calendar year.
2. Upon locating any dead or injured sage-grouse the SWCD and/or the landowners shall, immediately notify the appropriate Service and ODFW office. Instructions for proper handling and disposition of such specimens shall be given by the appropriate Service or ODFW office. Care must be taken in handling sick or injured birds to promote effective treatment and in handling dead specimens to preserve biological material in the best possible state.

The Service believes that no more than the anticipated levels of take noted above for sage-grouse will be incidentally taken as a result of the proposed action. The reasonable and prudent measure, with its implementing terms and conditions, is designed to minimize the impact of incidental take that might otherwise result from the proposed action. If during the course of the action, this level of take is exceeded; such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measure provided. The SWCD must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measure.

9. Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommendations are as follows:

1. Work with other non-federal landowners to enhance sage-grouse habitat throughout the range of the species.
2. Continue to work with other Federal agencies to expand sage-grouse conservation measures onto federal properties via Candidate Conservation Agreements.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Oregon Fish and Wildlife Office requests notification of any conservation recommendations.

10. Reinitiation - Closing Statement

This concludes the Service's CO for potential effects of the proposed action. If sage-grouse is listed, a request may be made that the Service adopt the CO as a final biological opinion satisfying the consultation requirements under Section 7(a)(2) of the ESA. The request must be submitted in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned, or in the information considered during the CO, the Service will adopt the CO as the biological opinion on the project, and no further section 7 consultation will be required.

If the CO is adopted as the final consultation document, the following reinitiation conditions apply. Reinitiation of formal consultation is required and shall be requested by the Federal

agency or by the Service, where discretionary federal involvement or control over the action has been retained or is authorized by law and:

(a) amount or extent of taking specified in the incidental take statement is exceeded;
(b) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
(c) identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the BO; or
(d) new species is listed or critical habitat designated that may be affected by the identified action.

The incidental take statement provided in this CO does not become effective until the species is listed and the CO is adopted as the biological opinion issued through formal consultation. At that time, the action will be reviewed to determine whether any take of sage-grouse or their habitat has occurred. Modifications of the opinion and incidental take statements may be appropriate to reflect that take. No take of sage-grouse or their habitat may occur between the listing of sage-grouse and the adoption of the CO through formal consultation, or the completion of a subsequent formal consultation.

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