

From: [Backsen, Sarah](#)
To: [Amy Nicholas](#)
Subject: GRSG 2015 Intro section
Date: Friday, January 16, 2015 3:32:08 PM
Attachments: [20140112_Introduction_sb.docx](#)

Hi Amy,

I have a first draft of my Intro section (including Regulatory history, Process for the status review, and Species report overview) ready for reviewers. I have been trying to upload it to sharepoint but having computer trouble at the moment. I'll try again later, but I am about to head out the door for the weekend, so thought I would email it to you in the meantime.

Since this section is a little different from the more substantive threat chapters, I wasn't sure if you were envisioning the same review process? Do you send it to the first round of reviewers or should I contact them directly?

The section I haven't done yet is the Executive summary for the species report, which I see I'm on the list for. I'll get working on that next, but it seems like there will need to be lots of placeholders until more of the chapters are drafted.

Thanks!

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****Please note the name change and new email address!****

Introduction

REGULATORY HISTORY

Comment [SB1]: Based on the 2010 finding, but updated

Greater Sage-Grouse

On July 2, 2002, we received a petition from Craig C. Dremann requesting that we list the greater sage-grouse (*Centrocercus urophasianus*; hereafter sage-grouse) as endangered across its entire range. We received a second petition from the Institute for Wildlife Protection on March 24, 2003, requesting that the sage-grouse be listed rangewide. On December 29, 2003, we received a third petition from the American Lands Alliance and 20 additional conservation organizations to list the sage-grouse as threatened or endangered rangewide. On April 21, 2004, we announced our 90-day petition finding in the Federal Register (69 FR 21484) that these petitions taken collectively, as well as information in our files, presented substantial information indicating that the petitioned actions may be warranted. On July 9, 2004, we published a notice to reopen the period for submitting comments on our 90-day finding, until July 30, 2004 (69 FR 41445). In accordance with section 4(b)(3)(A) of the Act, we completed a status review of the best available scientific and commercial information on the species. On January 12, 2005, we announced our not-warranted 12-month finding in the Federal Register (70 FR 2243).

On July 14, 2006, Western Watersheds Project filed a complaint in Federal district court alleging that the Service's 2005 12-month finding was incorrect and arbitrary and requested the finding be remanded to the Service. On December 4, 2007, the U.S. District Court of Idaho ruled that our 2005 finding was arbitrary and capricious, and remanded it to the Service for further consideration. On January 30, 2008, the court approved a stipulated agreement between the Department of Justice and the

plaintiffs to issue a new finding in May 2009, contingent on the availability of a new monograph of information on the sage-grouse and its habitat (Monograph). On February 26, 2008, we published a notice to initiate a status review for the sage-grouse (73 FR 10218), and on April 29, 2008, we published a notice extending the request for submitting information to June 27, 2008 (73 FR 23172). Publication of the Monograph was delayed due to circumstances outside the control of the Service. An amended joint stipulation, adopted by the court on June 15, 2009, required the Service to submit the 12-month finding to the Federal Register by February 26, 2010; this due date was subsequently extended to March 5, 2010.

On March 23, 2010, we published a 12-month finding (75 FR 13910) announcing that listing the sage-grouse rangewide was warranted, but precluded by higher priority listing actions. The species was added to the list of candidate species with a listing priority number of 8. As required by section 4(b)(3)(C) of the Act, we have subsequently made annual resubmitted petition findings, announced in conjunction with our Candidate Notices of Review, in which we continued to find that listing the sage-grouse rangewide was warranted but precluded by other higher priority listing actions (75 FR 69222, 76 FR 66370, 77 FR 69994, 78 FR 70104, 79 FR 72450).

On May 10, 2011, we filed a multiyear work plan as part of a proposed settlement agreement with Wild Earth Guardians and others in a consolidated case in the U.S. District Court for the District of Columbia. On September 9, 2011, the Court accepted our agreement with the plaintiffs in Endangered Species Act Section 4 Deadline Litig., Misc. Action No. 10–377 (EGS), MDL Docket No. 2165 (D. DC) (known as the “MDL case”) on a schedule to publish proposed rules or not-warranted findings for the 251 species designated as candidates as of 2010 no later than September 30, 2016. The work plan included a deadline to submit a proposed rule or a not-warranted finding to the Federal Register for sage-grouse, including any Distinct Population Segments (DPSs), by FY 2015.

Western Subspecies of the Greater Sage-Grouse

The western subspecies of the greater sage-grouse (*Centrocercus urophasianus phaios*) was identified by the Service as a category 2 candidate species on September 18, 1985 (50 FR 37958). At the time, we defined Category 2 species as those species for which we possessed information indicating that a proposal to list as endangered or threatened was possibly appropriate, but for which conclusive data on biological vulnerability and threats were not available to support a proposed rule. On February 28, 1996, we discontinued the designation of category 2 species as candidates for listing under the Act (61 FR 7596), and consequently the western subspecies was no longer considered to be a candidate for listing.

We received a petition, dated January 24, 2002, from the Institute for Wildlife Protection requesting that the western subspecies occurring from northern California through Oregon and Washington, as well as any western sage-grouse still occurring in parts of Idaho, be listed under the Act. The petitioner excluded the Mono Basin area populations in California and northwest Nevada since they already had petitioned this population as a DPS for emergency listing (see discussion of Bi-State area (Mono Basin) population below). The petitioner also requested that the Service include the Columbia Basin DPS in this petition, even though we had already identified this DPS as a candidate for listing under the Act (66 FR 22984, May 7, 2001) (see discussion of Columbia Basin below).

We published a 90-day finding on February 7, 2003 (68 FR 6500), that the petition did not present substantial information indicating the petitioned action was warranted based on our determination that there was insufficient evidence to indicate that the petitioned western population of sage-grouse is a valid subspecies or DPS. The petitioner pursued legal action, first with a 60-day Notice of Intent to sue, followed by filing a complaint in Federal district court on June 6, 2003, challenging the

merits of our 90-day finding. On August 10, 2004, the U.S. District Court for the Western District of Washington ruled in favor of the Service (Case No. C03-1251P). The petitioner appealed and on March 3, 2006, the U.S. Court of Appeals for the Ninth Circuit reversed in part the ruling of the District Court and remanded the matter for a new 90-day finding (*Institute for Wildlife Protection v. Norton*, 2006 U.S. App. LEXIS 5428 9th Cir., March 3, 2006). Specifically, the Court of Appeals rejected the Service's conclusion that the petition did not present substantial information indicating that western sage-grouse may be a valid subspecies, but upheld the Service's determination that the petition did not present substantial information indicating that the petitioned population may constitute a DPS. The Court's primary concern was that the Service did not provide a sufficient description of the principles we employed to determine the validity of the subspecies classification. On April 29, 2008, we published in the Federal Register (73 FR 23170) a 90-day finding that the petition presented substantial scientific or commercial information indicating that listing western sage-grouse may be warranted and initiated a status review for western sage-grouse.

Subsequently, in our March 23, 2010 12-month finding (75 FR 13910), we announced that listing the western subspecies of the sage-grouse was not warranted, based on our determination that the western subspecies is not a valid taxon and thus not a listable entity under the Act. We noted, however, that sage-grouse in the area covered by the putative western subspecies (except those in the Bi-State area, covered by a separate finding), were encompassed by our finding that listing the species rangewide was warranted but precluded.

In a related action, the Service also has made a finding on a petition to list the eastern subspecies of the greater sage-grouse (*Centrocercus urophasianus urophasianus*). On July 3, 2002, we received a petition from the Institute for Wildlife Protection to list the eastern subspecies, identified in the petition as including all sage-grouse east of Oregon, Washington, northern California, and a small portion of

Idaho. The petitioners sued the Service in U.S. District Court on January 10, 2003, for failure to complete a 90-day finding. On October 3, 2003, the Court ordered the Service to complete a finding. The Service published its not-substantial 90-day finding in the Federal Register on January 7, 2004 (69 FR 933), based on our determination that the eastern sage-grouse was not a valid subspecies. The not-substantial finding was challenged, and on September 28, 2004, the U.S. District Court ruled in favor of the Service, dismissing the plaintiff's case.

Columbia Basin (Washington) Population of the Western Subspecies

On May 28, 1999, we received a petition dated May 14, 1999, from the Northwest Ecosystem Alliance and the Biodiversity Legal Foundation. The petitioners requested that the Washington population of western sage-grouse (*C. u. phaios*) be listed as threatened or endangered under the Act. The petitioners requested listing of the Washington population of western sage-grouse based upon threats to the population and its isolation from the remainder of the taxon. Accompanying the petition was information relating to the taxonomy, ecology, threats, and the past and present distribution of western sage-grouse.

In our documents we have used “Columbia Basin population” rather than “Washington population” because we believe it more appropriately describes the petitioned entity. We published a substantial 90-day finding on August 24, 2000 (65 FR 51578). On May 7, 2001, we published our 12-month finding (66 FR 22984), which included our determination that the Columbia Basin population of the western sage-grouse met the requirements of our policy on DPSs (61 FR 4722) and that listing the DPS was warranted but precluded by other higher priority listing actions. As required by section 4(b)(3)(C) of the Act, we have subsequently made annual resubmitted petition findings, announced in conjunction with our Candidate Notices of Review, in which we continued to find that listing the

Columbia Basin DPS of the western subspecies was warranted but precluded by other higher priority listing actions (66 FR 54811, 67 FR 40663, 69 FR 24887, 70 FR 24893, 74 FR 57803, 75 FR 69222, 76 FR 66370, 77 FR 69994, 78 FR 70104, 79 FR 72450).

Subsequent to the March 2006 decision by the court on our 90-day finding on the petition to list the western subspecies of the sage-grouse (described above), our resubmitted petition findings stated we were not updating our analysis for the DPS, but would publish an updated finding regarding the petition to list the Columbia Basin population of the western subspecies following completion of the new rangewide status review for the sage-grouse. Subsequently, in light of the conclusions in our March 2010 12-month finding regarding the invalidity of the western sage-grouse subspecies (the taxonomic entity we relied on in our DPS analysis for the Columbia Basin population), our resubmitted petition findings stated that the significance of the Columbia Basin DPS to the sage-grouse would require further review. We stated that we intended to complete an analysis to determine if this population continues to warrant recognition as a DPS in accordance with our Policy Regarding the Recognition of Distinct Vertebrate Population Segments (61 FR 4722; February 7, 1996) at the time we make a listing decision on the status of the sage-grouse. Until that time, the Columbia Basin DPS has remained a candidate for listing as a separate population of sage-grouse.

Bi-State Area (Mono Basin) Population of Sage-grouse

On January 2, 2002, we received a petition from the Institute for Wildlife Protection requesting that the sage-grouse occurring in the Mono Basin area of Mono County, California, and Lyon County, Nevada, be emergency listed as an endangered DPS of *Centrocercus urophasianus phaios*, which the petitioners considered to be the western subspecies of the greater sage-grouse. This request was for portions of Alpine and Inyo Counties and most of Mono County in California and portions of Carson

City, Douglas, Esmeralda, Lyon, and Mineral Counties in Nevada. On December 26, 2002, we published a 90–day finding that the petition did not present substantial scientific or commercial information indicating that the petitioned action may be warranted (67 FR 78811). Our 2002 finding was based on our determination that the petition did not present substantial information indicating that the population of sage-grouse in this area was a DPS under our DPS policy (61 FR 4722; February 7, 1996), and thus was not a listable entity (67 FR 78811; December 26, 2002). Our 2002 finding also included a determination that the petition did not present substantial information regarding threats to indicate that listing the petitioned population may be warranted (67 FR 78811).

On November 15, 2005, we received a petition submitted by the Stanford Law School Environmental Law Clinic on behalf of the Sagebrush Sea Campaign, Western Watersheds Project, Center for Biological Diversity, and Christians Caring for Creation to list the Mono Basin area population of sage-grouse as a threatened or endangered DPS of the sage-grouse under the Act. On March 28, 2006, we responded that emergency listing was not warranted and, due to court orders and settlement agreements for other listing actions, we would not be able to address the petition at that time.

On November 18, 2005, the Institute for Wildlife Protection and Dr. Steven G. Herman sued the Service in U.S. District Court for the Western District of Washington (*Institute for Wildlife Protection et al. v. Norton et al.*, No. C05-1939 RSM), challenging the Service’s 2002 finding that their petition did not present substantial information indicating that the petitioned action may be warranted. On April 11, 2006, we reached a stipulated settlement agreement with both plaintiffs under which we agreed to evaluate the November 2005 petition and concurrently reevaluate the December 2001 petition (received in January 2002). The settlement agreement required the Service to submit to the Federal Register a 90–day finding by December 8, 2006, and if substantial, to complete the 12–month finding by December 10, 2007. On December 19, 2006, we published a 90–day finding that these petitions did not present

substantial scientific or commercial information indicating that the petitioned actions may be warranted (71 FR 76058).

On August 23, 2007, the November 2005 petitioners filed a complaint challenging the Service's 2006 finding. After review of the complaint, the Service determined that we would revisit our 2006 finding. The Service entered into a settlement agreement with the petitioners on February 25, 2008, in which the Service agreed to a voluntary remand of the 2006 petition finding, and to submit for publication in the Federal Register a new 90-day finding by April 25, 2008. The agreement further stipulated that if the new 90-day finding was positive, the Service would undertake a status review of the Mono Basin area population of the sage-grouse and submit for publication in the Federal Register a 12-month finding by April 24, 2009.

On April 29, 2008, we published in the Federal Register (73 FR 23173) a 90-day petition finding that the petitions presented substantial scientific or commercial information indicating that listing the Mono Basin area population may be warranted and initiated a status review. Based on a joint stipulation by the Service and the plaintiffs to extend the due date for the 12-month finding, on April 23, 2009, the U.S. District Court, Northern District of California, issued an order that if the parties did not agree to a later alternative date, the Service would submit a 12-month finding for the Mono Basin population of the sage-grouse to the Federal Register no later than May 26, 2009. On May 27, 2009, the U.S. District Court, Northern District of California, issued an order accepting a joint stipulation between the Department of Justice and the plaintiffs, which stated that the parties agree that the Service may submit to the Federal Register a single document containing the 12-month findings for the Mono Basin area population and the sage-grouse no later than by February 26, 2010. The due date for submission of the document to the Federal Register was extended to March 5, 2010, and the document was subsequently published on March 23, 2010 (75 FR 13910). In this document, we concluded, among other things, that

the Mono Basin area population is a listable entity under Service policy as a DPS and that the DPS warranted protection under the Act but that immediate action was precluded by higher listing priorities. This warranted-but- precluded finding placed the DPS on our candidate list.

Both the 2002 and 2005 petitions, as well as our 2002 and 2006 findings, use the term “Mono Basin area” and “Mono Basin population” to refer to sage-grouse that occur within the geographic area of eastern California and western Nevada that includes Mono Lake. For conservation planning purposes, this same geographic area is referred to as the Bi-State area by the States of California and Nevada. For consistency with ongoing planning efforts, we adopted the “Bi-State” nomenclature in our 2010 finding and consequently have referred to this DPS as the “Bi-State DPS” within subsequent documents.

As required by section 4(b)(3)(C) of the Act, we subsequently made annual resubmitted petition findings, announced in conjunction with our Candidate Notices of Review, in which we continued to find that listing the Bi-State DPS was warranted but precluded by other higher priority listing actions (75 FR 69222, 76 FR 66370, 77 FR 69994). On May 10, 2011, we filed a multiyear work plan as part of a proposed settlement agreement with Wild Earth Guardians and others in a consolidated case in the U.S. District Court for the District of Columbia. On September 9, 2011, the Court accepted our agreement with the plaintiffs in the MDL case (as described above) on a schedule to publish proposed rules or not-warranted findings for the 251 species designated as candidates as of 2010 no later than September 30, 2016.

In compliance with our MDL work plan, on October 28, 2013, we published a proposed rule to list the Bi-State DPS of sage-grouse as threatened under the Act and establish a 4(d) special rule (78 FR 64358), and a proposed rule to designate critical habitat for the Bi-State DPS (78 FR 64328).

PROCESS FOR 2015 STATUS REVIEW

Comment [SB2]: Drawn heavily from the Process Analytical Framework document

As described above, the Service must evaluate the status and submit a proposed rule or a not-warranted finding to the Federal Register for sage-grouse, including the Columbia Basin population, by September 2015. Since the 2010 finding that sage-grouse warranted Federal protection under the Act, but was precluded by higher priority actions, considerable progress has been made to address the threats and provide additional information regarding the species. In this status review, the Service will evaluate the best available scientific and commercial information to determine whether the species is in danger of extinction or is likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

We are committed to building the most transparent, thorough, and scientifically defensible status review in the agency's history. We intend to achieve this goal by incorporating the robust modeling efforts of our partners, requesting information on the ongoing and future conservation efforts, and working with the states to understand the current status of the sage-grouse. The information available on sage-grouse comprises a huge amount of data; we will structure our analysis to best utilize the available information.

The Service relies on a number of foundational elements for our status assessment, primarily the language of the Act, its implementing regulations, and agency policy, as well as previous work and assessments of the species status, including the 2010 finding, and the Greater Sage-Grouse Conservation Objectives (COT) Report (FWS 2013, entire). The principle factors leading to the 2010 warranted but precluded finding were habitat loss and fragmentation, principally due to invasive species and fire, energy development and associated infrastructure, sagebrush conversion due to agricultural practices,

and a lack of adequate regulatory mechanisms to address those threats. These threats will be a focus of the analysis we are conducting for the current species status review. The final COT report, a product of state and Federal collaboration, outlined the key areas for conservation of the species, the key threats in those areas, and conservation objectives involving reduction of those threats. The COT report identified the most important areas needed for long-term persistence of the species, which were termed Priority Areas for Conservation (PACs). The COT report has served as the basis for our technical advice regarding current regulatory and voluntary planning efforts and is a lens through which we are analyzing conservation measures during this status review.

In this review, the Service will apply the statute, regulations, and appropriate policies in the context of previous decisions for sage-grouse and similarly affected species and will explain meaningful differences based on species, threat impacts, or scale. We will use a structured analytical framework and process to assess the scientific, commercial, and legal information we must consider when making a listing decision.

A foundational element of our analysis is a current understanding of the status of the species, against which we will evaluate the impacts of threats and beneficial actions. We have worked with states and other partners to gather the most recent information to understand the current status and trend of the species at various spatial scales, including across the remainder of the range. The Service will assess all of the best available scientific and commercial information about the sage-grouse, the species' habitat needs, and potential impacts. We will address any new information and explain how our understanding of available scientific information may or may not have changed since the 2010 finding.

The sage-grouse's expansive range makes the evaluation of population, habitat, threats, and conservation efforts in a geospatial context a preferred option for assessing information. We have

conducted all spatial analyses to predict indices of distribution and relative abundance of sage-grouse where possible. Our base spatial level of analysis is the PACs; our analyses are scale-able to populations, other potential areas of interest, and the remainder of the range.

In this species report, we assess the degree to which the major threats of habitat loss and fragmentation and inadequacy of regulatory mechanisms have been addressed since 2010. We also evaluate any new threats to the species. For each of the major threats identified from 2010 finding and in the COT report and any significant new threats identified, we assess their impacts to both relative abundance and distribution of sage-grouse at multiple spatial scales.

Just as we attempt to quantify threats and predict their impacts, we also attempt in this species report to quantify the degree to which state and Federal plans, and local and other conservation efforts have already ameliorated threats to sage-grouse or are likely to do so into the future. We seek to understand how state and Federal plans, local conservation efforts, and other conservation efforts put in place since 2010 have removed or reduced impacts from threats, particularly within PACs. Conservation efforts described in recently revised or amended Federal Land Management Plans are evaluated under Factor D based upon their likelihood of effectiveness in ameliorating known threats to sage-grouse. Efforts that target high-priority threats receive greater analysis; efforts that target more localized or minor threats may not be analyzed in as great detail. Other conservation actions are also assessed. Where appropriate, the Service's Policy for Evaluation of Conservation Efforts (68 FR 15100, March 28, 2003) is used to assess actions that may be relied on in the listing decision.

Impacts of threats and regulatory and voluntary conservation actions are forecast using an analytical framework to assess percent of populations or degree of habitat persisting over time by comparing current with future situation. Since the species is not evenly distributed across the landscape,

we do not believe that bird numbers or habitat acres in and of themselves are the appropriate predictors of the overall species status and its likely persistence into the future.

The spatial analyses used in the 2010 status review were simple and assumed 100 percent impact. For example, if an area could be developed, it was assumed that it would be developed completely. It was further assumed that developed areas would not be able to support any sage-grouse, or would be significantly degraded such that sustaining current populations would not be likely. This estimate of impact was based upon predictions in the literature. Our new analyses include multiple scenarios and may be at a finer scale (e.g., PAC, population). This finer scale allows us to analyze changes at population levels or management zones. The Service has used a number of analytical methods, including a Spatially Explicit Modelling (SEM) framework focused on current and future threats and conservation actions, using the COT spatial geography (i.e., PACs) and population data to project various outcomes, as measured by abundance and distribution; using U.S. Geological Survey facilitators to employ modeling techniques such as Bayesian belief networks to increase transparency and help produce defensible decisions; using expert elicitation with outside parties to solicit input about the degree to which threats will be relevant and impact sage-grouse into the future; and using peer-reviewed quantitative spatial models that incorporate stated assumptions, knowledge of existing threat reduction measures, a range of potential input values, and all best available science.

The SEMs, expert elicitation, and internal decision analysis require the highest level of effort and are used on those threats that have been identified as the most important drivers for the conservation of the species (long-term persistence). These, at a minimum, include invasive species and fire, energy development and associated infrastructure, and habitat conversion due to tilled agriculture. This has allowed the Service to assess the level of risk to the highest concentrations of birds in the most important landscapes and begin placing anticipated biological outcomes into the context of the policy framework

relative to the definitions of threatened and endangered species. The remaining threats from the COT report, 2010 finding, and other information collected are evaluated and considered across the remainder of the range, populations, PACs, and individuals within this species report. Areas of interest are areas where threats may be concentrated, populations may have limited connectivity to neighboring populations, or the value of the birds in that area may be exceptionally high as it relates to the rest of the range.

The ultimate evaluation of listing status (i.e., whether the species is warranted for listing or not) will be informed in large part by the current status and trend of the species in the rest of the range, and the degree to which we predict the species, populations, and PACs will persist into the future. Given the number of threats and the uncertainty around those threats as they are likely to persist or increase into the future, as well as the evaluation of regulatory and non-regulatory conservation actions, we anticipate a wide range of modeling outcomes of abundance and distribution. These various outcomes, along with the qualitative evaluation of other threats and conservation actions, as summarized in this species report, will be the basis of one or more structured discussions regarding the reasonableness of our assumptions, risk to the species, exposure to threats, how far into the future that our predictions are reliable, the likelihood of the species persistence and the degree of persistence into the future.

The various outcomes from our structured prediction processes, along with the qualitative evaluation of other threats and conservation actions, as described and summarized in this species report, will be the basis of a structured workshop for Service personnel during which we will present, evaluate, analyze, and discuss the best available scientific and commercial information. After reviewing this information, Service personnel will evaluate whether the sage-grouse meets the definition of “threatened species” or “endangered species.” Within the range of the sage-grouse, one DPS has previously been

identified (Bi-State). Through our analysis, we will determine whether the remainder of the range, in whole or in part, warrants listing as threatened or endangered.

SPECIES REPORT OVERVIEW

This species report is intended to summarize the best available scientific and commercial information regarding sage-grouse and its habitat, including current status and trend of the species, and an evaluation of potential threats and conservation actions that may affect the species' ability to persist. In the Introduction to this species report, we describe the history of Federal regulatory actions related to the species' status under the Act, and explain the process we have used to conduct this status review. In the Species Description section, we provide basic scientific background information about sage-grouse, including a description of the species, a basic overview of information related to taxonomy, and information about genetics. We also discuss possible DPSs. The Life History and Ecology section provides an overview of the basic biological needs and life history of the species. In this section, we discuss each life stage of sage-grouse and their dependence on sagebrush, and describe lekking behavior and breeding, nesting, brood rearing, wintering, and movement patterns and migration corridors. The Current Biological Status section focuses on the best available information about the current status of the sage-grouse, including its historical and current range, distribution, and population status for each population of sage-grouse. This section outlines what we know about the current condition of the species, particularly as it relates to the species' needs discussed in the previous section.

The Potential Threats section provides detailed information about potential threats to the species, including agricultural conversion, renewable and non-renewable energy development, contaminants, fences, fire, climate change, disease, drought, hunting, mining, pesticides, predation, and recreation.

Comment [SB3]: Based on the GRSG Species Report Outline document. It sounds like that outline may be updated based on discussions in our January meeting. If so, this section may need to be updated.

Each potential threat is discussed in a separate chapter. For each potential threat, we describe the stressor, including its historical and current sources. Then we describe its current impacts on sage-grouse, including the mechanism by which it may affect the species, the results of the impact to sage-grouse persistence, and the timing, location and extent of the impact, and whether it has synergistic effects with other threats. Then we project the future impacts of each potential threat. We describe the foreseeable future for the impact, the likelihood of future impacts, and whether the impacts are expected to change from their present level or scope. Finally, we describe any conservation efforts or management actions that are occurring that may ameliorate the potential threat, and their implementation and effectiveness. Each of these components feeds into an overall assessment of each potential threat to sage-grouse.

In the Management and Conservation section, we summarize activities that are reducing or ameliorating potential threats discussed in the previous section. We also include a discussion of regulatory mechanisms that may address potential threats. This section provides a programmatic discussion of regulations and conservation efforts (their effectiveness at ameliorating individual threats is discussed under the appropriate threat chapter). We describe conservation measures, as well as relevant laws, regulations, policies, and management plans, including local land use laws; state laws; Federal laws implemented by the Bureau of Land Management, Forest Service, and other Federal agencies; and Canadian Federal and Provincial laws and regulations. In the Changes Since Previous Federal Actions section, we provide an overview of changes in the species' status that have occurred since the 2010 finding. This section focuses on the key elements of the 2010 finding and any new important elements that have arisen since then, and discusses how those elements have changed over time, and the reason for those changes, if known. Finally, the Overall Summary of Species Status and

Impacts section summarizes the main points of the analysis done in this species report and what they collectively mean for the overall biological status of the species as a whole.

CITATIONS

U.S. Fish and Wildlife Service. 2013. Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report. U.S. Fish and Wildlife Service, Denver, CO. February 2013.

Comment [SB4]: I didn't include Federal Register citations since we didn't include them in the lit cited for the 2010 finding, but I could add them if we decide we want them.