

A framework for identifying, documenting, and mapping concentrations of potential threats to the Greater sage-grouse (*Centrocercus urophasianus*) during the 2015 status review

Drafted by the Potential Threats Concentration Team - July 11, 2014

Purpose

This document provides a framework to identify, document, and map concentrations of potential threats to the Greater sage-grouse during the 2015 status review. Our previous status review identified that potential threats may operate equally across the entire range of the Greater sage-grouse, or they may be concentrated within specific geographic areas. Due to this uncertainty, this framework will be used to identify, refine, and map geographic “areas of interest” where potential threats to the Greater sage-grouse may be concentrated. By identifying concentrations of potential threats to the Greater sage-grouse, the framework collects, organizes, and creates spatially explicit data and maps used by biologists and decision-makers during all stages of the status review, including an evaluation under the Service’s Significant Portion of the Range (SPR) policy if we find that listing is not warranted throughout its range.

Benefits to the Status Review

Documenting and considering the distribution of threats across a landscape or a species’ range is an integral part of the status review process. The threats concentration framework does not duplicate this effort, but is an embedded process within the overall status review to capture and improve information regarding the concentration and spatial distribution of threats. Use of this framework will ensure that the Greater sage-grouse status review, species report will provide a full description of the threats in a manner that allows the biologists and decision-makers to evaluate the spatial distribution and concentration of these threats across the range of the species.

concentration Collecting, cataloguing, and mapping the threats to the Greater sage-grouse during the status review, in the manner described in this framework will facilitate analyses need to determine the listing status of the species, including an SPR analysis, if needed.

Disclaimer

The proposed framework *proactively* seeks and documents the best available scientific information regarding the concentration and spatial extent of potential threats to the Greater sage-grouse. The framework does not *preemptively* evaluate any of the collected information using the Service’s SPR policy, or any other Federal policies or regulations. The proposed framework does not determine the status of any portions of the Greater sage-grouse’s range, nor does it evaluate the potential significance of any portions within the range. However, the information collected by the framework would be readily available throughout the status review process and could be used at a later time, if needed, to evaluate significant portions of the Greater sage-grouse’s range under the Service’s SPR

Comment [GMS1]: Is this a draft framework, or a proposed, draft farmewor?

Deleted: proposed

Comment [Craig2]: Initially it was a proposed framework. Thank you. Did not include draft here because the header, footer, and watermark speak for themselves.

Deleted: , or “hotspots,”

Deleted:

Comment [GMS3]: I don’t understand why we need a separate framework for identifying potential concentrations of threats. Why don’t ...

Comment [Craig4]: Sentence 1: See Bene ...

Comment [Craig5]: Fine. But Somewhat ...

Deleted: variability

Deleted: the following ...his framework build ...

Comment [Craig6]: SUGGEST REJECT: ...

Comment [Craig7]: REJECT DELETION: ...

Deleted:

Deleted: “hotspots”

Comment [Craig8]: REJECT: It does more ...

Deleted: helps us...ollects, organizes, and ...

Comment [Craig9]: I will accept this, but I ...

Deleted: provides

Deleted: that will be valuable to

Comment [GMS10]: This is redundant with ...

Deleted: Additionally, the information could ...

Comment [Craig11]: It needs to be include ...

Deleted:

Comment [Craig12]: REJECT DELETION

Comment [Craig13]: Fine. Whatever.

Deleted: potential

Deleted: ...hreats across a landscape or a ...

Deleted: potential ...hreats. The framework ...

Comment [KNorman14]: May be “lighteni ...

Comment [GMS15]: This paragraph ...

Comment [Craig16]: So did you move it ...

Comment [GMS17]: This is redundant with ...

Deleted: During its initial phase, the framew ...

Deleted: “hotspot”

Deleted: maps will provide valuable ...

Deleted: ¶

Deleted: By c...ollectingcollecting...

Comment [GMS18]: Do you need this ...

Comment [Craig19]: REJECT DELETION ...

policy. Because information regarding potential threats and their concentrations will be useful throughout the status review, this information will also be used to inform other aspects of our analysis.

The proposed framework provides information and concentration Geographic areas of interest identified through this framework are not necessarily significant under the ESA or the Service's policies and regulations.

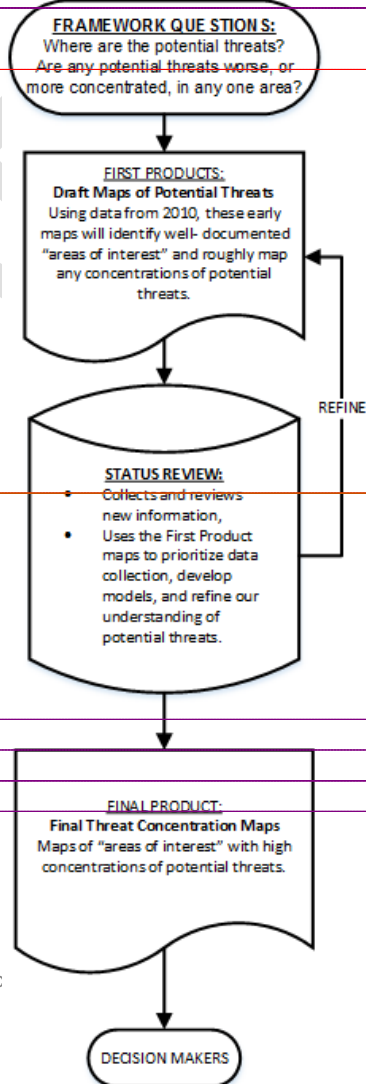
The Framework

Potential threats to the Greater sage-grouse may occur range-wide, or they may be localized, isolated, or concentrated within a particular area. This framework will be used to identify, document, and map concentrations of threats to the Greater sage-grouse for the status review. The framework is one component of the status review process, linking efforts from the multiple status review teams (e.g., Data Call, DPS, GIS, and Modeling) to ensure that differences in the magnitude, scope, and geographic extent of threats are documented in manner that facilitates analyses under the ESA, implementing regulations, and applicable policies.

The first step is to compile and maps available data regarding threat concentrations from the existing literature, status reviews, and reports, such as the Conservation Objectives Team (COT) final report (February 2013). These early maps of threat concentrations will inform and help direct the modeling efforts. The framework will then be used by the modeling and data call teams to further investigate, refine, and map the spatial distribution of threats. Through a feedback loop, the framework will be used to identify data needs regarding threats concentrations, and will be used by other teams to improve the resolution of both the spatial data and models at appropriate scales. Finally, by visually illustrating gradients of threats, the concentration maps generated through this process will provide spatial threat information for use in the status review.

The threats concentration framework has three (3) phases:

- **Phase 1 – First Product:** In the first stage, we identify and compile areas where threat concentrations are well-documented, and then map these as “areas of interest.” This first product will be used to inform modeling efforts.



Deleted: "hotspot"

Deleted: maps of potential threats that could inform an evaluation under the Service's SPR policy, but it operates independently of any regulation or policy and, as mentioned above, could assist other aspects of the status review. The framework ensures that the status review collects, documents, and maps relevant scientific information regarding concentrations of potential threats, information which could potentially be used during a review under the SPR policy, but will be useful throughout the process as we understand and evaluate potential threats during the status review. However, any g

Deleted: geographic

Deleted: that

Deleted: identifies

Deleted: and may not encompass all possible scenarios

Comment [Craig20]: I've seen both. What is the GRSG standard? I prefer no hyphen, but whatever.

Deleted: rangewide

Comment [Craig21]: Fine.

Deleted: assists status review biologists

Deleted: potential

Deleted: during

Deleted: 2015

Deleted: .

Deleted: any

Deleted: potential

Deleted: the species status report

Deleted: policies

Comment [KNorman22]: May be "lightening" or other term

Deleted: "hotspot"

Deleted: its

Deleted: the framework identifies

Deleted: s

Deleted: . The framework

Deleted: s

Deleted: (

Deleted: " (

Deleted:) and

- **Phase 2 - Refine:** During the early phases of the status review (e.g., data call and collection), the framework will assist the status review teams collect and document information regarding potential concentrations and the spatial distribution of threats. Phase 2 uses the maps generated in Phase 1 to prioritize data collection, develop and improve models, and refine our understanding of threats.
- **Phase 3 – Final Product:** After collecting data and refining models we will synthesize the information and produce revised maps of any “areas of interest” where threats may be concentrated.

Deleted: .

Deleted: s

Deleted: scientific

Deleted: extent

Deleted: any potential

Deleted: first product

Deleted: potential

Deleted: the framework

Deleted: s

Deleted: s

Deleted: or “hotspots”

Deleted: potential

DRAFT

Phase 1: First Product

The threats concentration team reviewed the existing literature, the March 23, 2010, finding, the COT Report (2013), and other sources of information to compile already available, well-documented information regarding concentrations of threats.

Deleted: potential

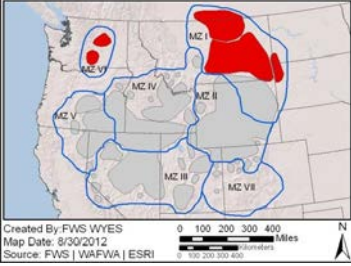
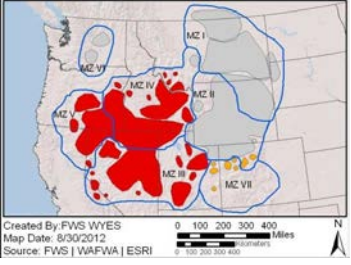
Table 1 summarizes information and available maps regarding the concentration of threats to the Greater sage-grouse from the COT Report (2013) and the Near-Term Greater-Sage Grouse Conservation Action Plan (COT Team 2012). The USGS' *Summary of Science* open-file report (Manier *et al.* 2013) provides additional detail and resolution regarding the spatial distribution and concentration of potential threats.

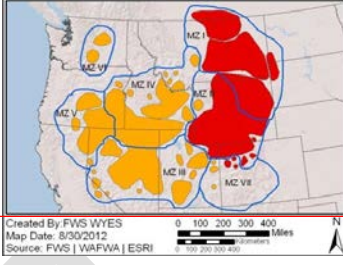
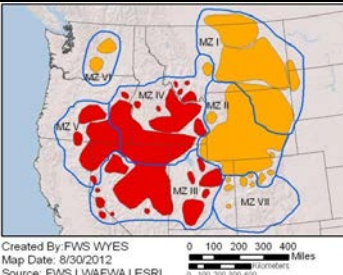
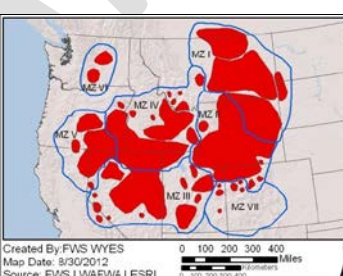
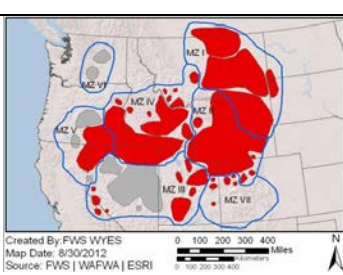
Deleted: potential

Deleted: will

Deleted: provide

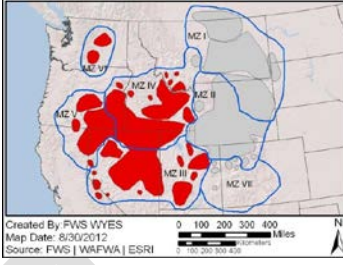
Table 1. Potential threats and potential concentrations as documented in COT Report (2013) and the Conservation Action Plan (COT Team 2012).

Potential Threat	Rangewide or Select Concentrations?	Potential Areas of Interest			Available Maps	Citations
		States	MZs	PACs		
Agricultural Conversion	Select	MT, ND, SD, WA	I, VI			COT Report 2013; COT Team 2012
Conifer Encroachment	Primarily in the west, but localized elsewhere.	CA, CO, ID, NV, OR, UT	III, IV, V, VII			COT Report 2013; COT Team 2012

Potential Threat	Rangewide or Select Concentrations?	Potential Areas of Interest			Available Maps	Citations
Energy Development	Rangewide (however, different types of energy development are occurring regionally and threats will be assessed according to available data)	All*	All*			COT Report 2013; COT Team 2012
Invasive Plants (Exotic annual grasses)	West	CA, ID, NV, OR, UT, WA	III, IV, V, VI			COT Report 2013; COT Team 2012
Infrastructure	Rangewide	All	All			COT Report 2013; COT Team 2012
Urbanization	Rangewide, but localized	All	I, II, III, IV, VII, and Bi-State			COT Report 2013; COT Team 2012

Comment [KNorman23]: Kevin Doherty mentioned that it might be good to caveat this that although energy development is occurring rangewide, different energy development threats may be present in different areas (e.g. oil vs gas vs solar vs transmission) – Red is more oil and gas ;orange might be potential wind development. 2013 assessment (USGS)

Comment [Craig24]: I'm fine with this.

Potential Threat	Rangewide or Select Concentrations?	Potential Areas of Interest			Available Maps	Citation s
Wildfire	West	CA, ID, NV, OR, UT, WA	III, IV, V, VI			COT Report 2013; COT Team 2012
Small population sizes	Rangewide, with potential local areas of interest	All	I, II, III, IV, V, VI, VII		Maps unavailable at this time.	COT Report 2013; COT Team 2012
Sagebrush Removal	Select Concentrations	Low: ND, SD, WY, OR, ID	Low: I, II, III, IV, VI, VII		Maps unavailable at this time.	COT Report 2013; COT Team 2012
Mining	Select Concentrations	All	I, II, III, IV, V		Maps unavailable at this time.	COT Report 2013; COT Team 2012
Grazing	Select Concentrations	All	I, II, Some III, IV, V, VI, VII		Maps unavailable at this time.	COT Report 2013; COT Team 2012

Formatted Table

Potential Threat	Rangewide or Select Concentrations?	Potential Areas of Interest			Available Maps	Citation s
Free-Roaming Equids	Select Concentrations	All	Some II, III, IV, V, and VI. All VII		Maps unavailable at this time.	COT Report 2013; COT Team 2012
Recreation	Select Concentrations	All	I, II, III, Low IV, Some V, VI, No VII		Maps unavailable at this time.	COT Report 2013; COT Team 2012

References Cited:

COT Report. 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.

COT Team. Range-wide Interagency Sage-Grouse Conservation Team. 2012. Near-term Greater sage-grouse conservation action plan. Presented to the Greater sage-grouse Executive Oversight Committee and the Sage-grouse Task Force. Dated September 11, 2012. 27 pp.

Manier, D.J., Wood, D.J.A., Bowen, Z.H., Donovan, R.M., Holloran, M.J., Juliusson, L.M., Mayne, K.S., Oyler-McCance, S.J., Quamen, F.R., Saher, D.J., and Titolo, A.J., 2013, Summary of science, activities, programs, and policies that influence the rangewide conservation of Greater Sage-Grouse (*Centrocercus urophasianus*): U.S. Geological Survey Open-File Report 2013–1098, 170 p., <http://pubs.usgs.gov/of/2013/1098/>.