

# Peer Review Summary

8/13/2014 (Updated)

## Peer Review Plan

<https://www.usgs.gov/atom/73854> [18.3 KB PDF].

## Title and Authorship of Information Product Disseminated

Using Resistance and Resilience Concepts to Reduce Impacts of Annual Grasses and Altered Fire Regimes on the Sagebrush Ecosystem and Sage-Grouse—A Strategic Multi-Scale Approach, By Jeanne C. Chambers, David A. Pyke, Jeremy D. Maestas, Mike Pellant, Chad S. Boyd, Steven B. Campbell, Shawn Espinosa, Douglas W. Havlina, Kenneth E. Mayer, and Amarina Wuenschel.

## Peer Reviewers Expertise and Credentials

Reviewer #1 has a PhD in Environmental Science, 30 years' experience in fuels management and fire ecology, and publications related to Sage-grouse habitat modeling, disturbance ecology, and sagebrush and sage steppe fire and fuels management.

Reviewer #2 has a PhD focused on Landscape Ecology, Terrestrial Plant Ecology, and Fire Ecology, and has over 17 peer reviewed publications in terrestrial systems monitoring, vegetation and habitat research in semi-arid shrubland systems (esp. sagebrush), management and restoration of semi-arid ecosystems, and large-landscape conservation and management planning.

Reviewer #3 has a PhD in Population Biology, and has authored more than 18 peer reviewed papers on topics related to land degradation and restoration, and resilience and sustainability of dryland ecosystems.

## Charge Submitted to Peer Reviewers

The reviewers were asked to make an objective evaluation of the research.

## Summary of Peer Reviewers Comments

Reviewers agreed that the manuscript was worthy of publication, with one stating that the report is a clear, thorough, and well-reasoned synthesis of ecological principles and management implications regarding the conservation of sage-grouse habitat and populations and that this was a major undertaking, a product commendable both for its scientific rigor and its clarity of explaining such a wealth of background research and current understanding of ecological dynamics, and another stating that the manuscript offered valuable perspectives on sagebrush ecosystem conservation and management as well as the associated conservation of Greater Sage-Grouse.

Reviewers commented on the treatment of fire in the document, with one asking for more information about fire, and another stating that information on fire and fuels, drought,

climate change and aroga moth outbreaks in the sagebrush system was incomplete. Reviewers commented on the management application of the science, with one commenting that the treatment of adaptive management was inadequate, and that more information was needed on the sources of uncertainty and the process that might link the decision support tool to adaptive management, and another suggesting that that managers needed a cookbook, or a more thorough set of instructions to follow for choosing which actions to apply in different conditions. One reviewer asked for clarification on the authors' degree of knowledge about the factors that influence resistance and resilience in sagebrush systems. All reviewers included numerous minor corrections of grammar, typos, terminology, comments on clarity of writing or requests for additional detail, and suggestions for additional references.

## **Summary of USGS Response to Peer Reviewers Comments**

Regarding comments on fire, the authors noted that much of the information the reviewer requested on fire and fuels was outside the scope of this paper and was therefore not included. Numerous changes were made throughout the manuscript that clarified or added detail about fires and how they are altered by forces such as climate change. Additional references to fire and fuels literature were added.

Regarding comments of management application, the authors added text about adaptive management and its links to this decision support matrix, although they declined to offer more prescriptive instruction for managers, as USGS Fundamental Science Practices policy is that USGS authors may describe potential outcomes of various management actions, but cannot dictate those actions.

The authors added an additional paragraph that provides clear definitions of the resistance and resilience terms, and addressed all the reviewer's comments about factors influencing sagebrush resistance and resilience. Lastly, editorial and stylistic comments, terminology changes, requests for additional detail, and clarification were all addressed.

## **The Dissemination**

The published information product will be released in a U.S. Forest Service Rocky Mountain Research Station General Technical Report and will be available at [www.treesearch.fs.fed.us/](http://www.treesearch.fs.fed.us/).