

Peer Review Plan

Topic of Review: Fire ecology [x] **Influential Scientific Information**
Agency: Forest Service, PSW [] **Highly Influential Scientific Assessment**

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Subject of Review: Collins, B.M., Everett, R.G., Stephens, S.L., 2011. Impacts of fire exclusion and managed fire on forest structure in an old growth Sierra Nevada mixed-conifer forest. Ecosphere 2, art 51.

Purpose of Report: The paper compares historical forest conditions, based on inventory data collected in 1911, to current forest conditions, based on re-measurements of the same areas conducted in 2005 and 2007. Over half of the areas re-measured burned in recent management- and lightning-ignited fires, allowing not only for comparisons of current to historical forest conditions, but also comparisons based on recent fire activity. We found that in general current forests are much denser and have nearly double the aboveground carbon stocks relative to historical conditions. However, in areas that burned recently under moderate fire severity current forest structure was fairly similar to historical structure. These findings have important implications toward restoration, namely that low severity disturbances, either low-intensity management-ignited fire or mechanical thinning with low diameter limits, do not alter forest structure enough to restore historical forest conditions. These long fire-excluded forests need a moderate severity disturbance, either fire or mechanical, to begin resembling the open, heterogeneous structure characterized by historical forests. This knowledge is important to incorporate in restoration efforts to enhance resiliency of the Sierran forests ecosystems.

Type of Review: [] Panel Review [] Individual Reviewers
[x] Alternative Process (Briefly Explain):
Blind peer review process conducted by the open access Ecological Society of America journal Ecosphere. Two reviewers and an associate editor provided substantial comments.

Timing of Review (Est.): Start: 02/03/11 End: 04/05/11 Completed: 04/08/11

Number of Reviewers: [x] 3 or fewer [] 4 to 10 [] More than 10

Primary Disciplines/Types of Expertise Needed for Review: _____
Fire ecologists, forest ecologists, etc.

Reviewers selected by: [] Agency [x] Designated Outside Organization
Organization's Name: Ecological Society of America - Ecosphere

