

Application of an Original Wildfire Smoke Health Cost Benefits Transfer Protocol to the Western US, 2005–2015

Environmental Management

November 2017, Volume 60, Issue 5, pp 809–822 | Cite as

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Article

First Online: 13 September 2017

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Abstract

Recent growth in the frequency and severity of US wildfires has led to more wildfire smoke and increased public exposure to harmful air pollutants. Populations exposed to wildfire smoke experience a variety of negative health impacts, imposing economic costs on society. However, few estimates of smoke health costs exist and none for the entire Western US, in particular, which experiences some of the largest and most intense wildfires in the US. The lack of cost estimates is troublesome because smoke health impacts are an important consideration of the overall costs of wildfire. To address this gap, this study provides the first time series estimates of PM_{2.5} smoke costs across mortality and several morbidity measures for the Western US over 2005–2015. This time period includes smoke from several megafires and includes years of record-breaking acres burned. Smoke costs are estimated using a benefits transfer protocol developed for contexts when original health data are not available. The novelty of our protocol is that it synthesizes the literature on choices faced by researchers when conducting a smoke cost benefit transfer. On average, wildfire smoke in the Western US creates \$165 million in annual morbidity and mortality health costs.

Keywords

Wildfire smoke Health costs Benefit transfer Protocol Western US
BenMAP-CE

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Notes

Acknowledgements

The authors would like to thank five anonymous reviews for their valuable feedback and suggestions. An early version of this paper was presented at the 5th International Fire Behavior and Fuels Conference in Portland, OR, April 11–15, 2016.

Compliance with Ethical Standards

Conflict of Interest

The authors declare that they have no competing interests.

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Cite this article as:

Jones, B.A. & Berrens, R.P. Environmental Management (2017) 60: 809.
<https://doi.org/10.1007/s00267-017-0930-4>

- Received 01 April 2017
- Accepted 10 August 2017
- First Online 13 September 2017
- DOI <https://doi.org/10.1007/s00267-017-0930-4>
- Publisher Name Springer US
- Print ISSN 0364-152X
- Online ISSN 1432-1009
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