

# Review of: "Connection Between Climate Change and Wildfires"

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**Potential competing interests:** No potential competing interests to declare.

## General comment

The paper, "Connection Between Climate Change and Wildfires," explores the relationship between these two critical issues and presents potential strategies for adaptation and mitigation. While the topic is of great importance, the review has several areas for improvement. The discussion lacks the depth and analytical rigor necessary for a review. Additionally, the references are limited and outdated, often relying on older studies and reports rather than current, peer-reviewed research. The paper would greatly benefit from a more systematic approach to the literature, such as following the PRISMA methodology, to ensure a thorough and structured review. Incorporating more recent and diverse sources, along with offering a more nuanced analysis, would enhance the quality of the work. In its current form, the paper highlights a relevant issue but requires significant revisions to align with scientific standards.

## Specific comments

### 1. Introduction

- Line 2: The statement "the most significant consequence of climate change is the increasing occurrence of wildfires" is quite strong. Could you provide a reference to support this claim?
- Lines 4-5: It would be beneficial to include information on global wildfire trends in addition to the US-specific data. This would offer a more comprehensive perspective.

### 2. Impacts of Wildfires on Climate Change

- Line 2: When referring to "Studies", could you please provide specific references for these studies?
- Line 3: The reference cited is nearly 20 years old, which may not fully reflect the current situation. Is there more recent data that can support this trend?
- Line 6: I recommend using "warmer" instead of "hotter" for a more precise term.
- Lines 6-10: It would enhance the discussion to specify which regions, climates, or continents are most affected by wildfires. A global overview of the impacts would be very valuable.

### 3. Impacts of Wildfires on Climate Change

- Line 1: The statement "while climate change is causing wildfires" might benefit from rephrasing. Since wildfires are natural occurrences, it may be more accurate to state that climate change is increasing the frequency and intensity of wildfires. Additionally, human activity may play a significant role in wildfire occurrences.
- Line 2: Could you provide data or a range of carbon dioxide emissions to quantify "large amounts"? An example or comparison could help clarify the magnitude of this impact.

- Line 3: Similarly, for "black carbon," could you include some data or context to illustrate its effect?
- Line 4: Could you elaborate on how wildfires contribute to sea-level rise? Including data or references would strengthen this point.
- Line 7: It may be helpful to expand on the connection between soil erosion and rainfall events following wildfires, especially considering that climate change is leading to more intense rainfall. There is substantial literature on this topic that could be cited.
- Lines 8-9: Please include relevant references for the information mentioned here.

#### 4. Adaptation and Mitigation Strategies

- Line 3: The sentence "trees and can be taken..." would benefit from rephrasing for clarity.
- Line 6: When mentioning "early warning systems," it would be useful to include examples or case studies. Do these systems have proven effectiveness?
- Line 7: It seems that "Land use planning" could be more accurately described as a prevention measure rather than an adaptation strategy.
- Lines 7-13: This section, focused on strategies for mitigating wildfire impacts, is crucial. I suggest expanding it with additional examples, case studies, and concrete solutions. What insights did you gain from your literature review that can be applied here?

#### 5. The Role of Human Activity in Wildfires

- Line 2: The sentence "deforestation has led to degradation of forests" could be rephrased and further explained for clarity.
- Line 4: The phrase "humans manage up to 90% of wildfires" could be clarified. Are you referring to human-caused wildfires? If so, it would be helpful to reconcile this with the earlier emphasis on climate change as the primary cause.
- Lines 6-9: This section appears unrelated to human activity, as humans are not mentioned. Consider moving this content elsewhere or revising it to fit the context.

#### 6. The Impacts of Wildfires

- This section is relatively brief and lacks novel information. I suggest incorporating it into the introduction and providing supporting references and studies.

#### 7. Wildfire Management Strategies

- I recommend merging this section with Section 4, as some of the content overlaps. Additionally, including more examples or case studies would enhance this discussion.

#### 8. Conclusion

- The conclusion would benefit from a complete revision. It should reflect the key insights gained from the literature review rather than repeating elements from the introduction or abstract. A more focused synthesis of the findings would strengthen this section.