

Disasters Avoided

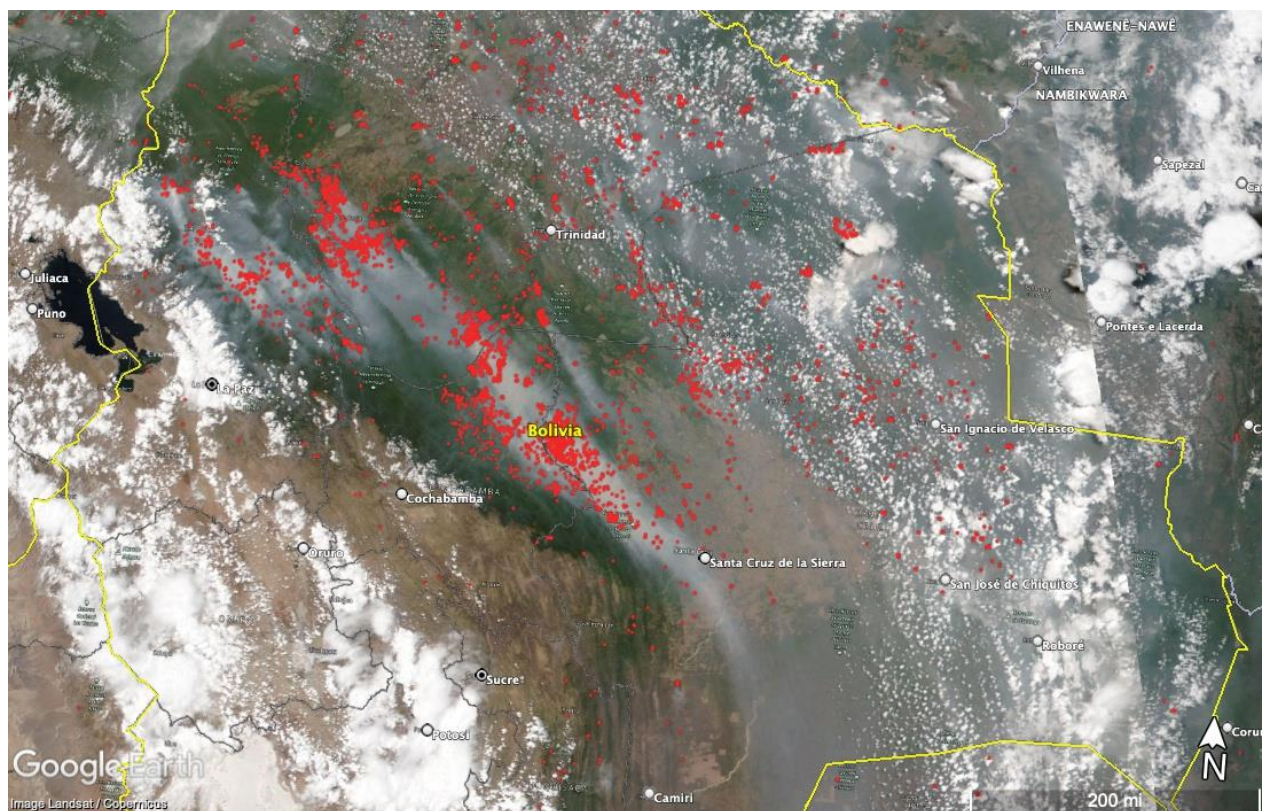
WILDFIRES and CLIMATE CHANGE

Better Wildfire Governance

- Human caused climate change is one of many factors contributing to wildfire risk.
- Linking all wildfire disasters to climate change leads to a narrow and ineffective approach to wildfire management.
- Good wildfire governance works to address the root cause of fire ignitions and increased landscape susceptibility, considers socioeconomic factors, and functions within the context of related environmental policy frameworks.

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Satellite observed smoke plumes (grey features) and fire locations (red dots) east of the Andes, Bolivia on October 22nd, 2023. Smoke from agricultural burning and land use change activities lead to widespread poor air quality near and downwind of fire sources, often crossing borders to and from neighbouring countries. During the fire season, Santa Cruz de la Sierra, Bolivia becomes one of the most polluted cities in South America (Image Source: NASA Worldview)

Establishing causality between human-made climate change and larger, more severe, and/or more frequent fires is not straightforward. Satellite observations tell us that total global burned area has *decreased* over the past two decades, largely driven by decreases in wildfire activity in African savannahs and grasslands¹, meaning that factors other than climate change can dominate these upward or downward changes in specific regions. Large year-to-year variability in fire weather also adds complexity to linking climate change to changes in wildfire size and/or frequency.

To avoid wildfire disasters, the allocation of resources towards data collection and governance mechanisms needs to be commensurate with the relative importance of the various risk factors in a particular region. Linking all wildfire disasters to climate change leads to a narrow and ineffective approach to wildfire risk management.

Stopping ignitions means less wildfire disasters. Except for intact forests outside the tropics, where lightning strikes play an important role, most ignitions are caused by human activities in susceptible landscapes² and are avoidable. [Good wildfire governance](#) prioritizes activities to reduce human-caused fire ignitions by engaging communities to address the root causes, including the socioeconomic factors leading to negligence, mistakes, or arson.

Landscape susceptibility to wildfire has increased across the globe. Examples include excess vegetation due to the abandonment of rural lands in southern Europe or an overemphasis on fire suppression in countries like the U.S. and Canada, and vast non-native plantations of flammable trees in Australia, Chile, Indonesia, Spain, and Uruguay, among other countries. Good wildfire governance works to address the root causes of altered landscapes and wildfire dynamics, such as a lack of livelihood alternatives to non-native tree plantations; policies prioritizing fire suppression over prevention; and the lack of investment in historical and cultural practices using low-grade fires to prevent larger and more destructive fires.

A [proactive mindset](#) to avoiding wildfire disasters should also be applied to regions where hotter and drier weather due to climate change is making vegetation more flammable, such as the western U.S. and Mediterranean climates. In this case, good governance links policies and resource allocation with the most effective solutions and avoids a “one size fits all” approach. While using good data – that is current and relevant – such as earth observations can help prioritize actions, current earth system models would be more relevant to wildfire risk management if they included both environmental (e.g. fire weather) and human factors driving changes in wildfire risk.

Climate change risks should not be managed in isolation, but rather within the context of other activities and policies aimed at improving and connecting human and ecological wellbeing. For example, wildfire management policies should be developed within the framework of air quality regulations that include specific [targets](#) for air quality improvements; and prescribed burning decisions should be coupled with ecological diversity targets.

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1. Jones, M. W., Abatzoglou, J. T., Veraverbeke, S., Andela, N., Lasslop, G., Forkel, M., et al. (2022). Global and regional trends and drivers of fire under climate change. *Reviews of Geophysics*, 60, e2020RG000726. <https://doi.org/10.1029/2020RG000726>
 2. Costafreda-Aumedes Sergi, Comas Carles, Vega-Garcia Cristina (2017) Human-caused fire occurrence modelling in perspective: a review. *International Journal of Wildland Fire* 26, 983-998. <https://doi.org/10.1071/WF17026>