

Climate at a Glance: Global Wildfires



Image: Wildfire at night, licensed from 123rf.com

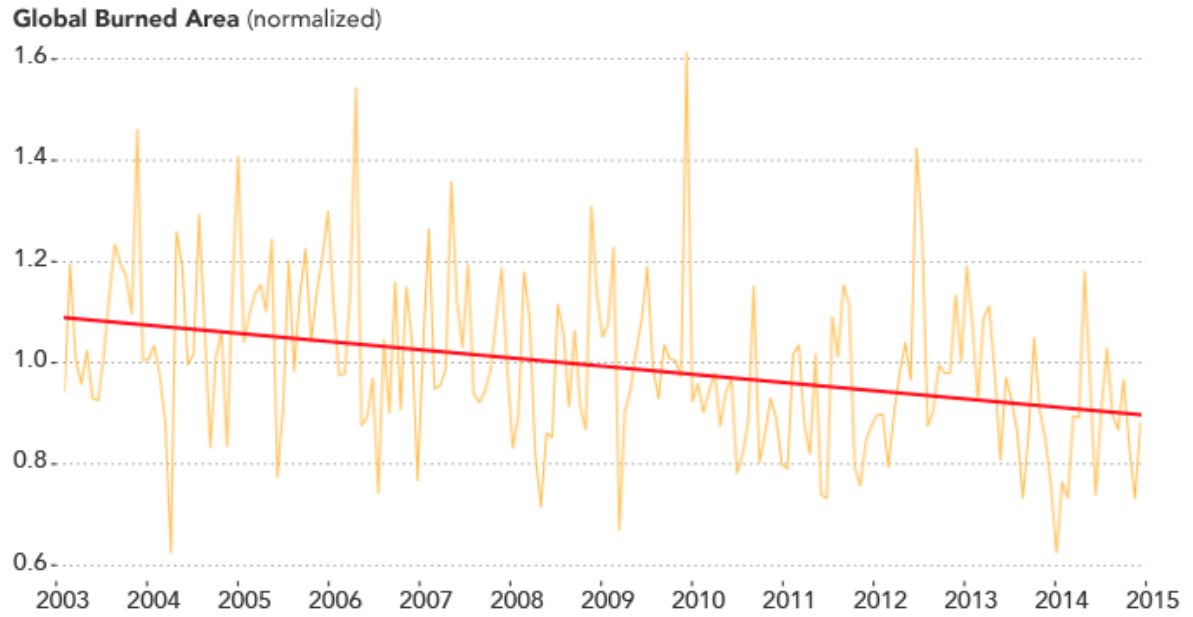
Key Takeaways:

- Climate activists and the mainstream media often claim that wildfires have increased due to climate change.
- Data from satellites as well as reconstructed historical terrestrial fire records both show that global wildfire area burned has decreased substantially during recent decades, as well as over the last 120 years.

Short Summary:

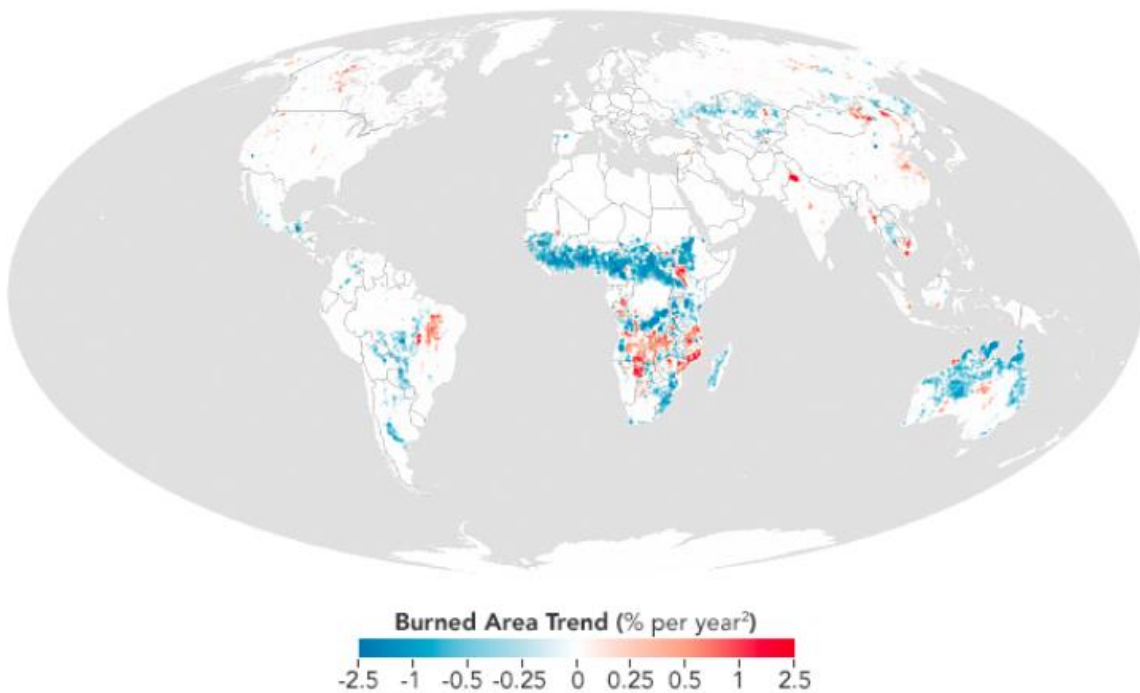
One of the more common harms attributed to climate change is that it has caused an increase in wildfires due to warmer temperatures and more severe drought.¹ Multiple lines of data show that this claim is false.

Short-term satellite data from NASA's Earth Observatory confirms this. NASA found that the [global area burned between 1998 and 2015 declined by 24 percent](#).²



2003 - 2015

Figure 1: Total acreage burned by fires each year between 2003 and 2015. Trend line in red indicates a steady decline. Source: "NASA detects drop in global fires," NASA website, June 29, 2017.



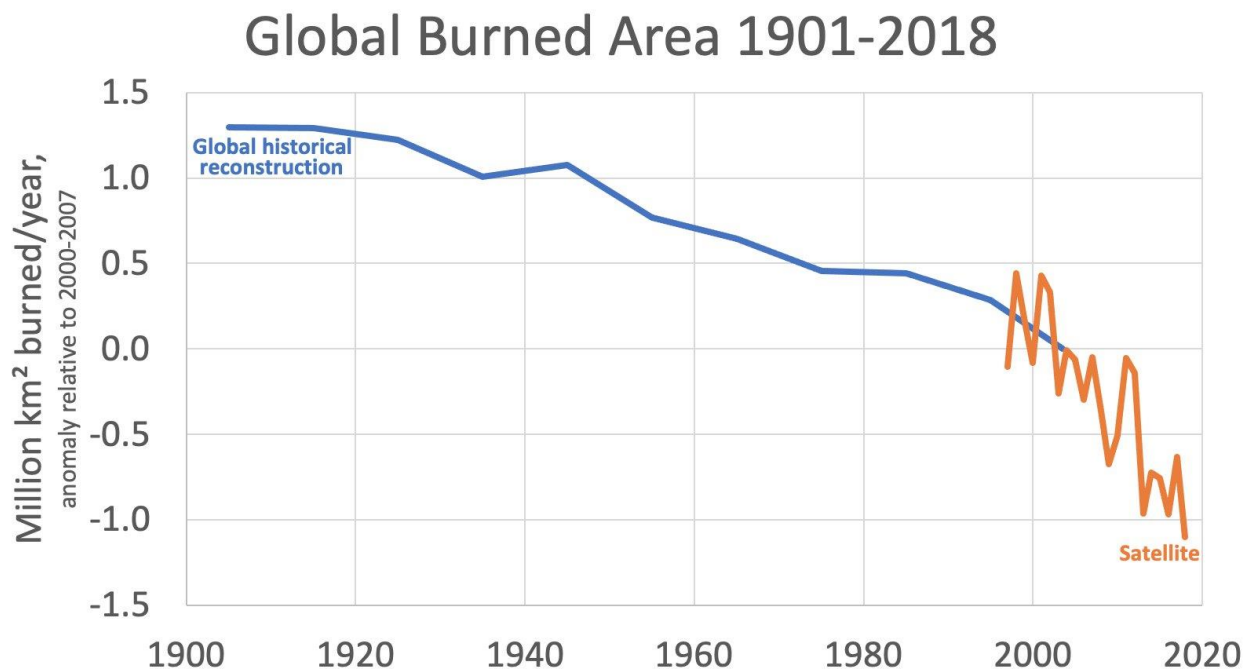
1998 - 2015

Figure 2: Global observations of burned areas and trends show a decline in wildfires from 1998-2015. Source: "NASA detects drop in global fires," NASA website, June 29, 2017.

Scientific data show a similar long-term reduction in wildfires. A peer reviewed study on global wildfires found, "The average global burned area is $\sim 442 \times 10^4 \text{ km}^2 \text{ yr}^{-1}$ during 1901–2007 and our results suggest a notable declining rate of burned area globally."³

Confirming the NASA and the peer reviewed study, the European Space Agency (ESA) maintains a [database of wildfire area burned](#), from Earth observing satellite data beginning in 1982. It also shows a steady drop in global acreage burned.⁴

A third source, combining recent data with a scientific reconstruction of global historical fire records, demonstrates a long-term reduction in global wildfires even as the planet warmed slightly over the past century.⁵ Total area burned across the world has declined over past 117 years. Just over the past 18 years the area lost to wildfires has fallen by approximately 18 percent.⁶ This is illustrated in Figure 3:



1901-2007 from <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/2013JG002532>, 1997-2016 from <http://globalfiredata.org/analysis.html>, and 2017-18 from <https://gwis.jrc.ec.europa.eu/static/gwis.statistics.portal/countries-estimates/NA>. While estimates of global burned area attempt to be internally consistent, they differ in scope, hence data here shown as difference from 2000-7. Model estimate for that period is 3.63Mkm², satellite estimate for period is 4.88Mkm². twitter.com/bjornlomborg

Figure 3: Combined reconstruction and satellite data. Blue curve, global wildfire area burned reconstruction. Orange curve, global wildfire area burned measured by satellites. Graph plotted by Bjorn Lomborg, Ph.D.

To sum up, contrary to commonly made claims that climate change is causing an increase in wildfires, every data set one could consult shows that the acreage lost to wildfires globally has decreased substantially during the last century while the planet has modestly warmed.

References:

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2. NASA Earth Observatory, *Researchers Detect a Global Drop in Fires*, June 29, 2017, accessed 3/28/24, <https://earthobservatory.nasa.gov/images/90493/researchers-detect-a-global-drop-in-fires>
3. Yang et al., *Spatial and temporal patterns of global burned area in response to anthropogenic and environmental factors: Reconstructing global fire history for the 20th and early 21st centuries*, Journal of Geophysical Research, 14 February 2014, accessed 4/4/24, <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2013JG002532>
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6. Andela, et al., *A human-driven decline in global burned area*, Science, 30 June 2017, accessed 3/27/24, <https://www.science.org/doi/10.1126/science.aal4108>

Climate At A Glance is a Project of [The Heartland Institute](#)

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