



Impacts of Climate Change: Wildfire Increase



Introduction

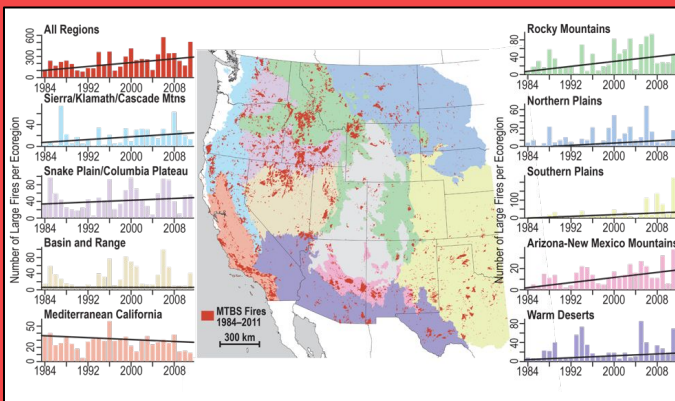
Wildfires are rapidly spreading infernos that consume vegetation and leave destruction in its wake.

- ❖ Although classified by the Environmental Protection Agency as a natural disaster, as much as 85 to 90 percent of wildfires occur due to human causes. (7)
- ❖ Warm temperatures, dry climate, and strong winds can convert dense vegetation into flammable fuel.
- ❖ Many naturally occurring wildfires occur during times of dry weather and drought.
- ❖ They form once a spark occurs, some lightning, arson, or a campfire could all lead to a flame.
- ❖ Highly destructive and can travel as fast as 14 miles per hour (7)



River Fire near Scott's Valley Road in Lake County California

Mark McKenna/ZUMA Wire/REX/Shutterstock



Since 1984, the amount of annual large fires in the western United States has steadily increased year by year. The black lines over each region's graph indicate trends in fire frequency, and almost all of them indicate that the amount of annual fires in each region is slated to increase over an indefinite amount of time (3)

How Current Global Change is Making This Worse

The two words often associated with large fires are hot and dry, which are also synonymous with climate change and global warming. Satellite imagery from NASA shows that net carbon emissions strongly correlate with net annual large fires, and both have been steadily increasing since the 1980's (3).

As CO₂ traps infrared radiation from the planet's surface, the air surrounding the planet then becomes warmer, leading to a drier environment. The combination of dry land and heating air is perfect for large fires to start, which explains why this correlation exists.

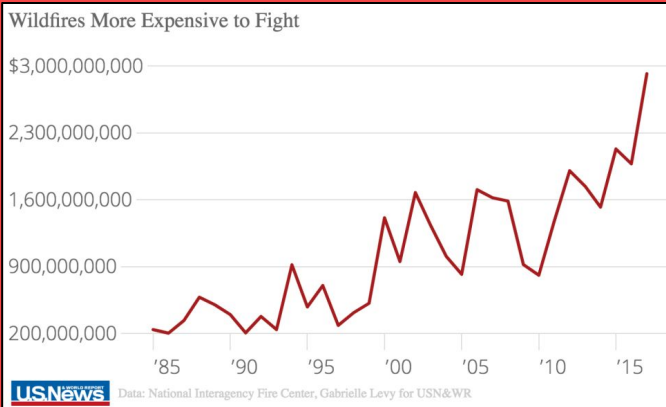


The dramatic results of climate change and global warming on wildfires was demonstrated this past February all across Australia. Some of the worst fires the country has ever seen raged from coast to coast; this resulted in the loss of hundreds of millions of native animals, such as koalas, wombats, and kangaroos, as pictured to the right (5).



Effect of Wildfire Increase on Wildlife

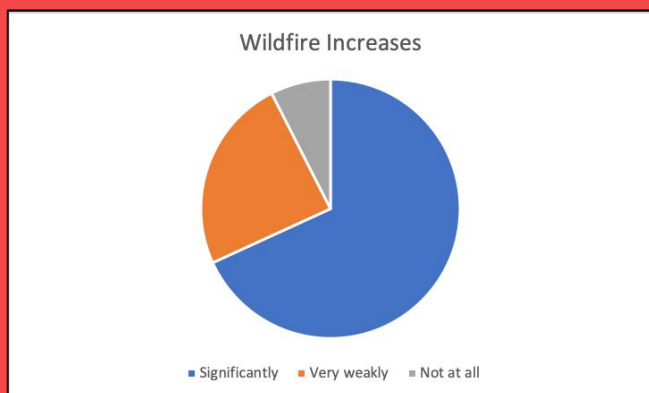
- ❖ Animals native to certain countries are in danger of extinction if populations of its species die, one after the other; thus, the entire species would not be able to recover (6).
- ❖ Landscapes destroyed by wildfires tremendously affect ability of animals to recover
 - There is no food or shelter left if habitats are completely burned
- ❖ The physical environment goes hand in hand with the living organisms in a healthy ecosystem!



With wildfires burning more acres yearly on average and more homes built near wildfire-prone areas, costs of suppressing wildfires have gone up and will likely continue to increase (1).

Effect of Wildfire Increase on Humans

- ❖ Wildfires can spread to residential areas, potentially burning people
- ❖ Smoke from wildfires can cause short- and long-term effects on health, like bronchitis and pulmonary diseases respectively
 - Risk of these health problems increases as exposure to wildfire increases (2)
- ❖ Thus, an increase in wildfires means more risks to human health
- ❖ There are also economic impacts, as seen on the left



Results of 333 respondents conducted in Spring 2020 to the query "Please indicate if in your opinion the degree to which this phenomenon is affected or intensified now or in the near future (within the next 30 years) by global climate change."

References

1. Levy, G. "Wildfires Are Getting Worse, And More Costly, Every Year." 1 August 2018. *U.S. News*. <https://tinyurl.com/levyg-1>
2. Walsh, C. "Australian wildfires will claim victims even after they're out." 27 January 2020. *The Harvard Gazette*. <https://tinyurl.com/walshc-2>
3. Gray, Ellen. "Satellite Data Record Shows Climate Change's Impact on Fires - Climate Change: Vital Signs of the Planet." NASA, NASA, 11 Sept. 2019, <https://tinyurl.com/graye-3>.
4. Smith, J.K., ed. 2000. *Wildland fire in ecosystems: effects of fire on fauna Vol 1*: 83 p.
5. Mercer, P. "Wildfire Catastrophe Caused by Australian Bushfires." 11 January 2020. *VOA News*. <https://tinyurl.com/mercerp-5>
6. Yeung, J. "Millions of animals are dying from the Australian fires, and the environment will suffer for years to come." 8 January 2020. *CNN*.
7. Thiessen, Mark. "California Fires Are Raging: Get the Facts on Wildfires." *National Geographic*, 25 Oct. 2019, <https://tinyurl.com/thiessenm-7>