



# How Does El Nino Affect Wildfires in Canada?

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## ABSTRACT

The 2023 wildfire season in Canada was the harshest on record, images of the New York City skyline smothered in the smoke from the country's many fires is fresh in the mind of both the American and Canadian public. Our group decided to investigate the likelihood of naturally caused Canadian wildfires in the upcoming El Nino year which will worsen weather patterns. This is due to the fact that the heat caused by El Nino will lead to drought and create more inflammable conditions for forests and increases the probability of human caused fires. It also reduces storm amounts in Northern regions such as Canada leading to drier conditions. This leaves more opportunities for fires and increased area burned.

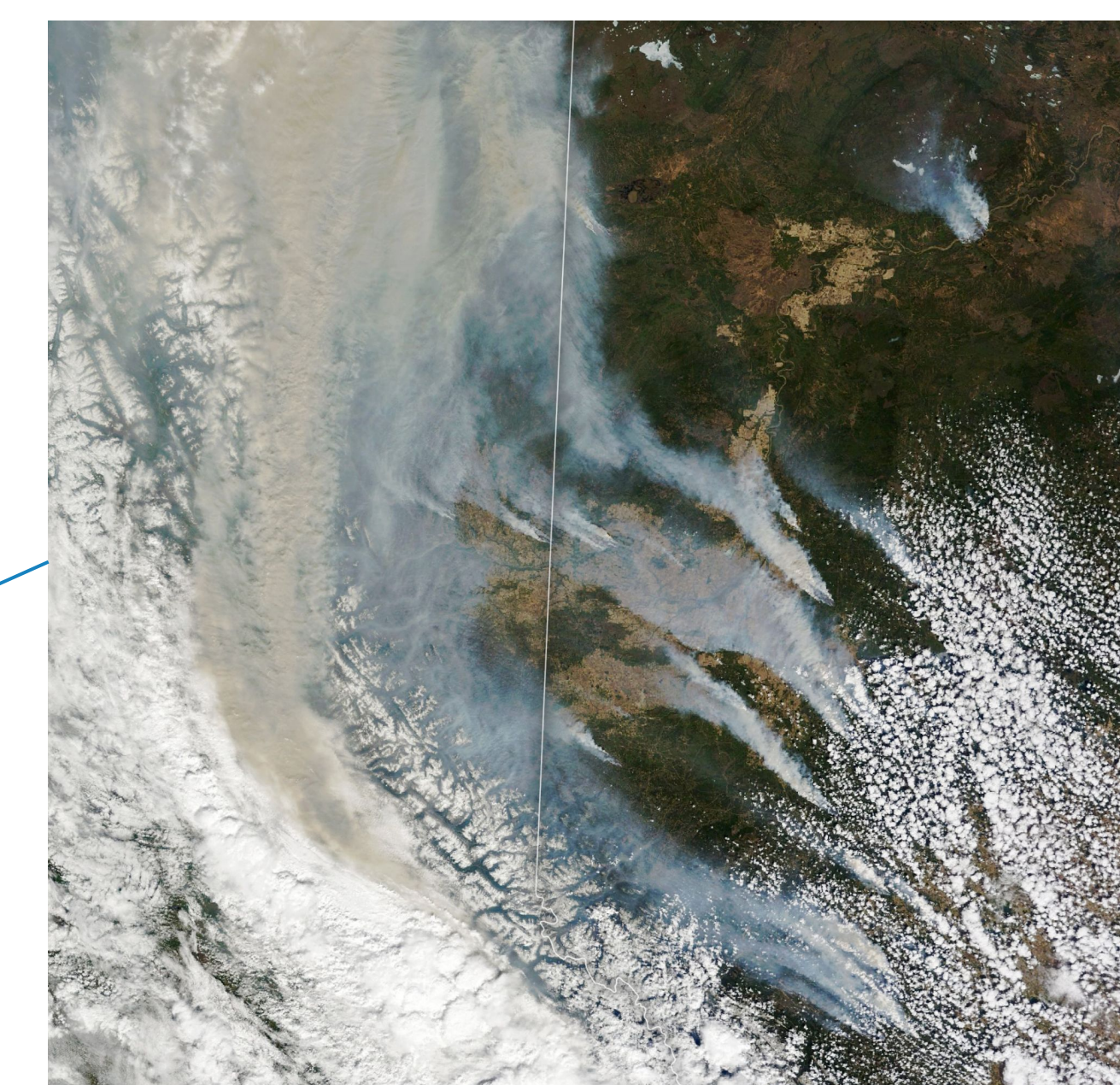
## HYPOTHESIS

El Nino patterns affect Canadian wildfires, due to there being a higher tendency for drought which dries out vegetation, causing more land to be scorched by both human-caused and naturally caused fires.

## RESEARCH with Satellite Images & ABI Bands

**Wildfire smoke coming from all the wildfires across the country of Canada with ABI band 1.**

[Source](#)



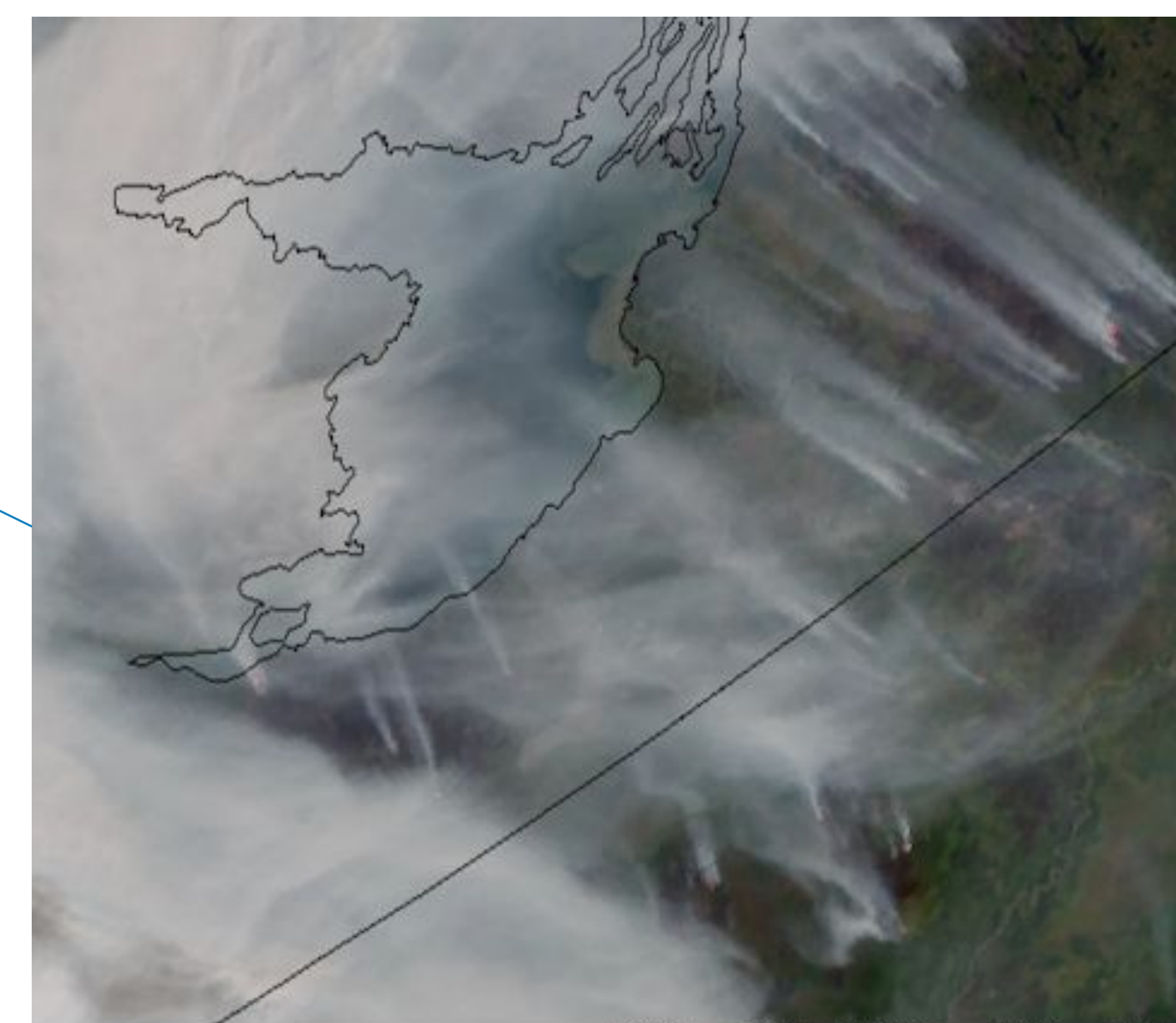
**Satellite imagery from GOES satellites of wildfires starting off in Quebec and it shows what direction the wind was blowing 2023**

[Source](#)



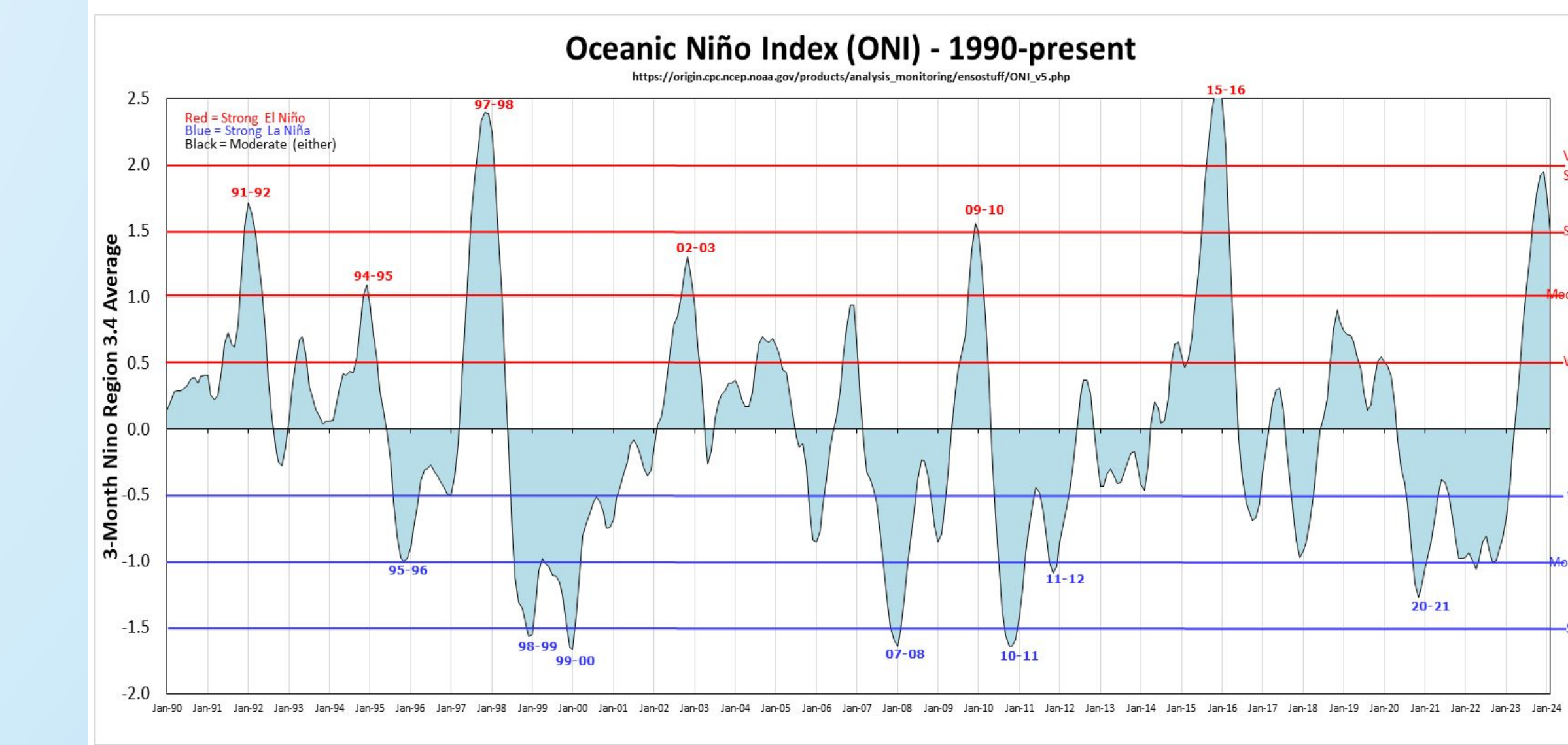
**Imagery from GOES of wildfires igniting in Southwest Canada (2023)**

[Source](#)



## RESULTS and CONCLUSIONS

In our research we utilized ABI bands 1 and 2 to see smoke, allowing us to track wildfires. The Canadian Drought Monitor provided information regarding the severity of droughts during El Nino years, compared to La Nina years. This showed the greater severity of droughts during El Nino years such as 2023-2024, compared to La Nina years like 2020-2021. The drought in 2023-2024 was the worst in the western and central regions of Canada; however, there were almost no drought conditions in the same region during 2020-21, which was a La Nina year. This proves that during El Nino years, there was more area burned due to typically having worse drought conditions which could easily lead to more destructive fires, than La Nina years.



## References

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