

UNDERSTANDING SANTA ANA WINDS

ANZA ELECTRIC COOPERATIVE, Inc.



A Touchstone Energy® Cooperative 



WHAT ARE SANTA ANA WINDS?

Santa Ana winds occur when there is high pressure to the east, in the Great Basin, and a low-pressure system off the coast.

Air masses move from high pressure to low pressure, and the more extreme the difference in the pressure, the faster the winds blow.



HOW SANTA ANA WINDS FORM

- In cooler months — typically September to May — cold air in the Great Basin is forced downhill and westward toward low-pressure areas along the Southern California coast.
- As the air travels, it's squeezed through mountain passes and canyons, picking up speed and becoming hotter and drier along the way.



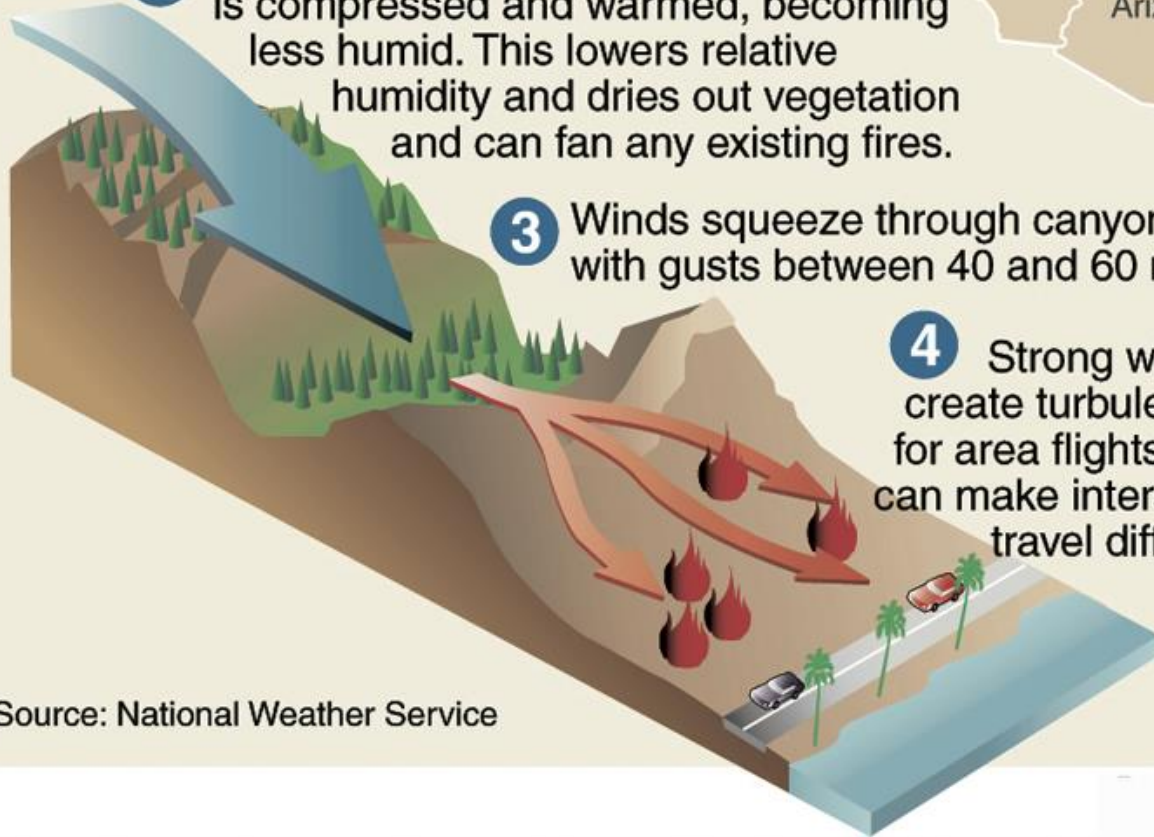
Santa Ana winds

In addition to increasing the threat of wildfires, Santa Ana winds can cause trouble for drivers and pilots in Southern California.

1 Desert winds originate from a clockwise flow of air around a high-pressure system east of the Sierras.



2 Air extends from the mountains, and is compressed and warmed, becoming less humid. This lowers relative humidity and dries out vegetation and can fan any existing fires.



3 Winds squeeze through canyons with gusts between 40 and 60 m.p.h.

4 Strong winds create turbulence for area flights and can make interstate travel difficult.

Source: National Weather Service

WHAT DO WE NEED TO KNOW?

1. Typically, about 10 to 25 Santa Ana wind events occur annually.
2. A Santa Ana wind can blow from one to seven days, with an average wind event lasting three days.
3. The longest recorded Santa Ana event was a 14-day wind in November 1957.
4. Santa Ana winds are called 'Katabatic'; essentially wind flowing downhill.
5. Santa Ana winds tend to have extremely low relative humidity, drying out vegetation and increasing fire risk.



RESOURCES

1. National Weather Service:
<https://www.weather.gov/safety/wind-mountain-valley#:~:text=Santa%20Ana%20Winds%20occur%20when,mountain%20passages%20in%20Southern%20California>.
2. USGS: <https://www.usgs.gov/news/earthword-katabatic-winds#:~:text=Definition%3A,downslope%20to%20lower%20density%20air>.
3. Robert Fovell, Professor of Atmospheric and Oceanic Sciences, UCLA:
https://people.atmos.ucla.edu/fovell/ASother/mm5/SantaAna/santa_ana_faq.html



THANK YOU!

Anza Electric Cooperative, Inc.

(951)763-4333

www.anzaelectric.org

Anza Electric Cooperative, Inc.

A Touchstone Energy® Cooperative 