



Study case

Fires in California Jan 2025

Flood in Valencia Oct 2024

2024/2025

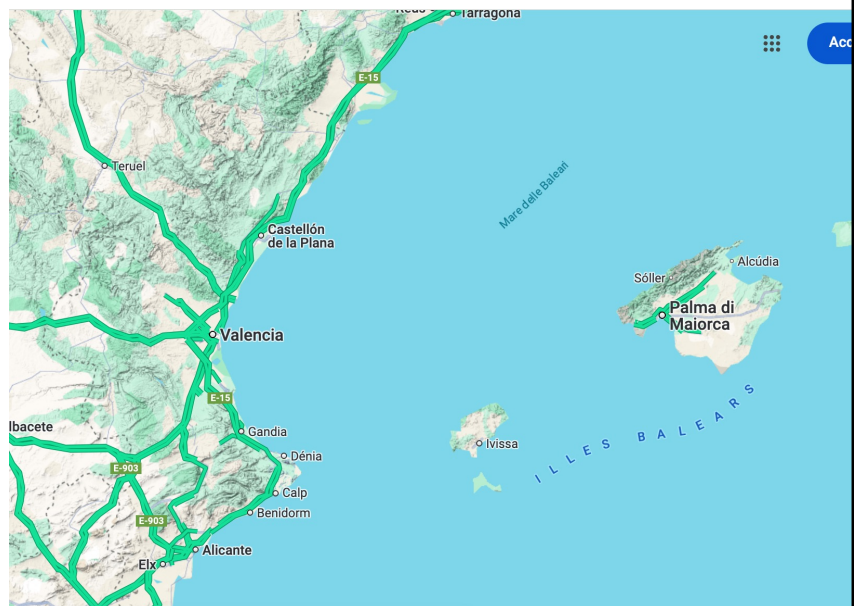
Alessandro Travaglini

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Valencia flood

- 29 october 2024
- More than 200 people dead
- Sierra Javalambre
- 631 mm rain in a day

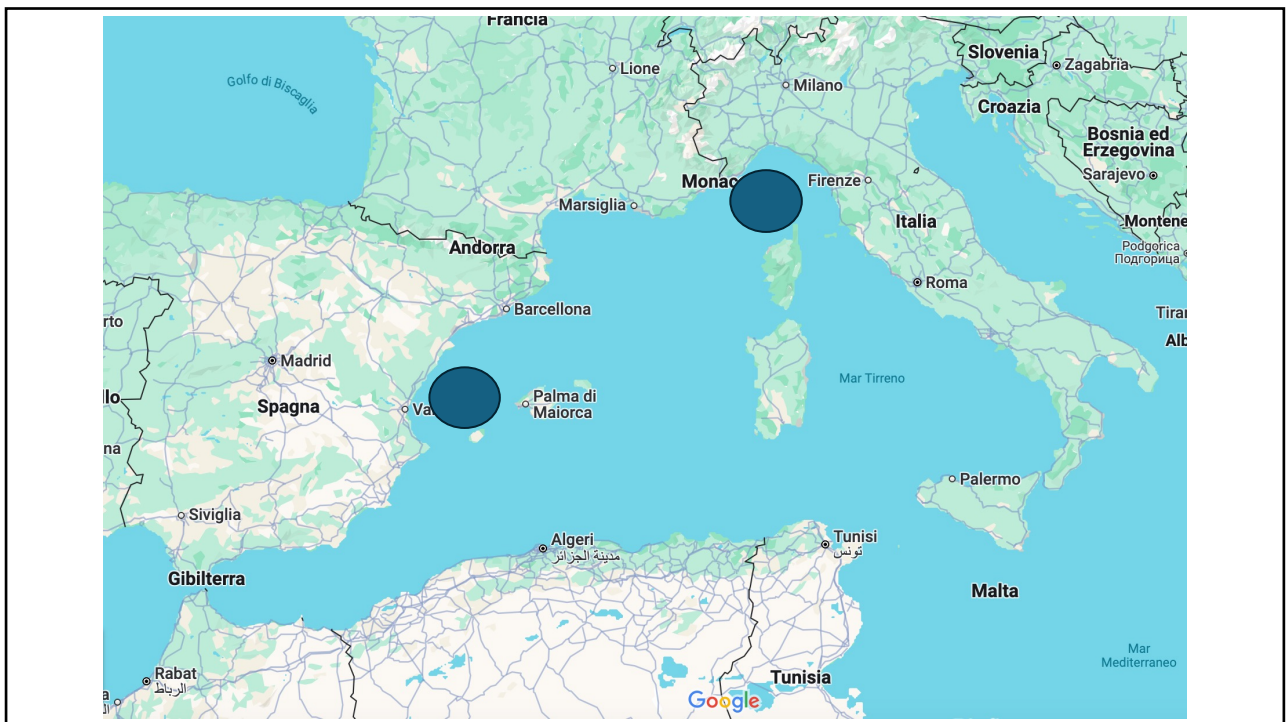
River Turia diverted
Damage out of
Valencia



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- Mediterranean sea is warmer
- Cool air coming from Arctic zone is less cool
- the 1970 Genoa flood (in the Polcevera basin it rained over 900 mm in a single day, the rainfall of 1 year)
- Nicolosi flood in Sicily (15-18 October 1951 - 1366 mm in 4 days, the rainfall of 3 years)
- Sicca d'Erba flood in Sardinia (14-18 October 1951 - 1536 mm in 5 days, again the rainfall of 3 years) or the Calabria flood (16-18 October 1951 - over 1500 mm in 3 days)

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- Presence of mountains (Alps or Apennine, Pirenei etc)
- Cool air masses coming from Siberia North Atlantic or Arctic
- From Atlantic ocean arrive great low pressure systems
- mid-latitudes of the northern hemisphere most favourable to the genesis of blocking systems, i.e. weather structures that are large and persist for a long time over the same territory, making them responsible for floods, droughts, large cold and heat waves.

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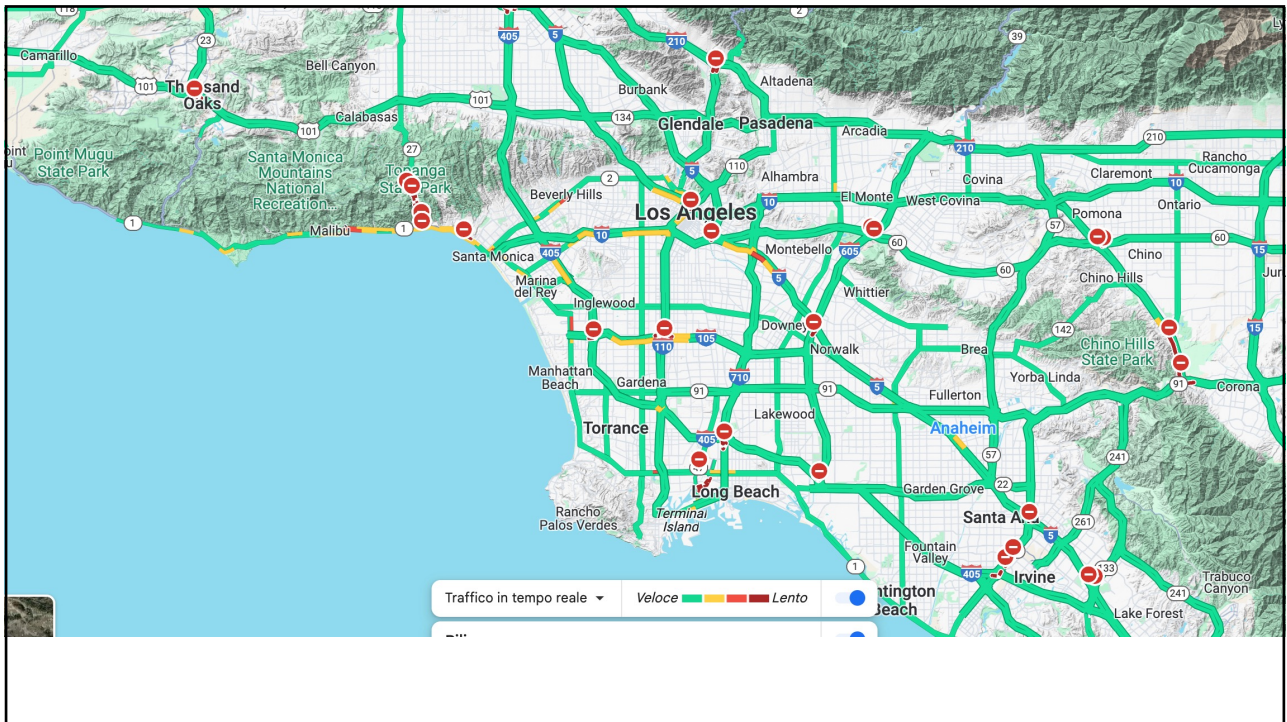
Los Angeles fires



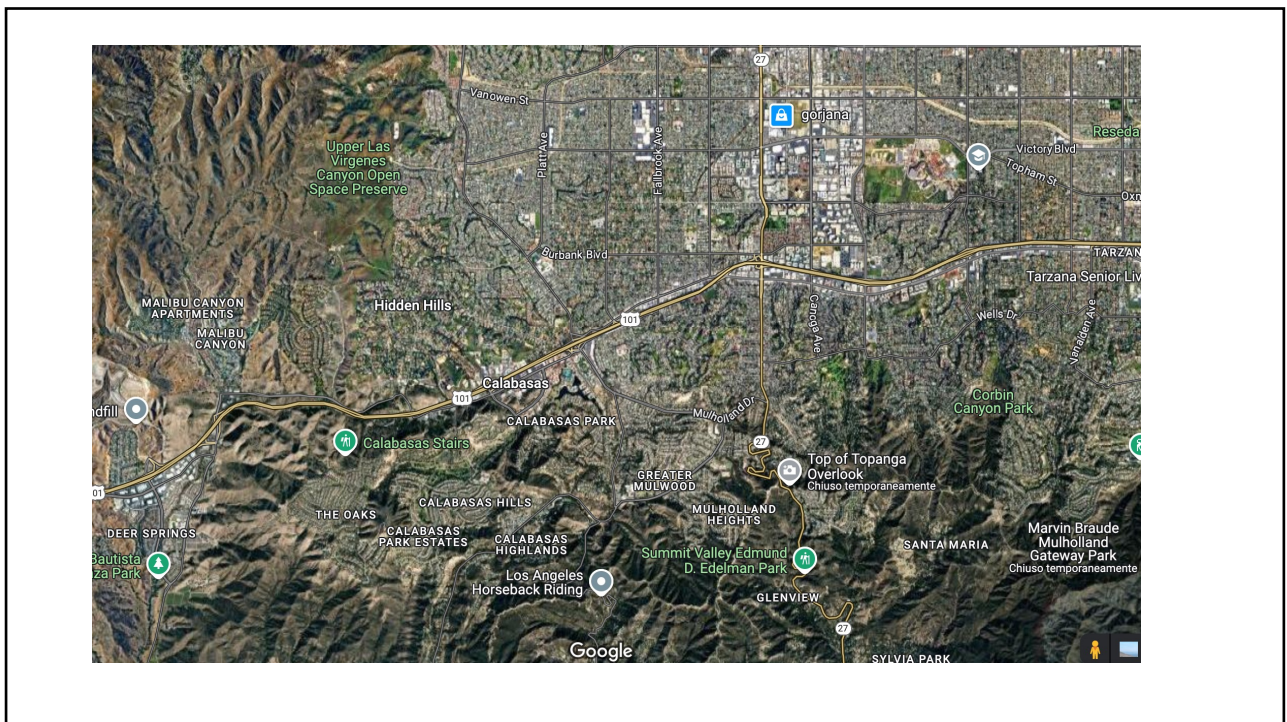
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- The current fires are fuelled by unusually strong winds and a particularly dry winter,
- the lack of selective deforestation policies, which could reduce the risk of fires. Indeed, fires are part of the natural cycle of forests, and targeted interventions can prevent greater damage
- uncontrolled urbanisation has led to increasing proximity between homes and forests, increasing the risk of devastating fires

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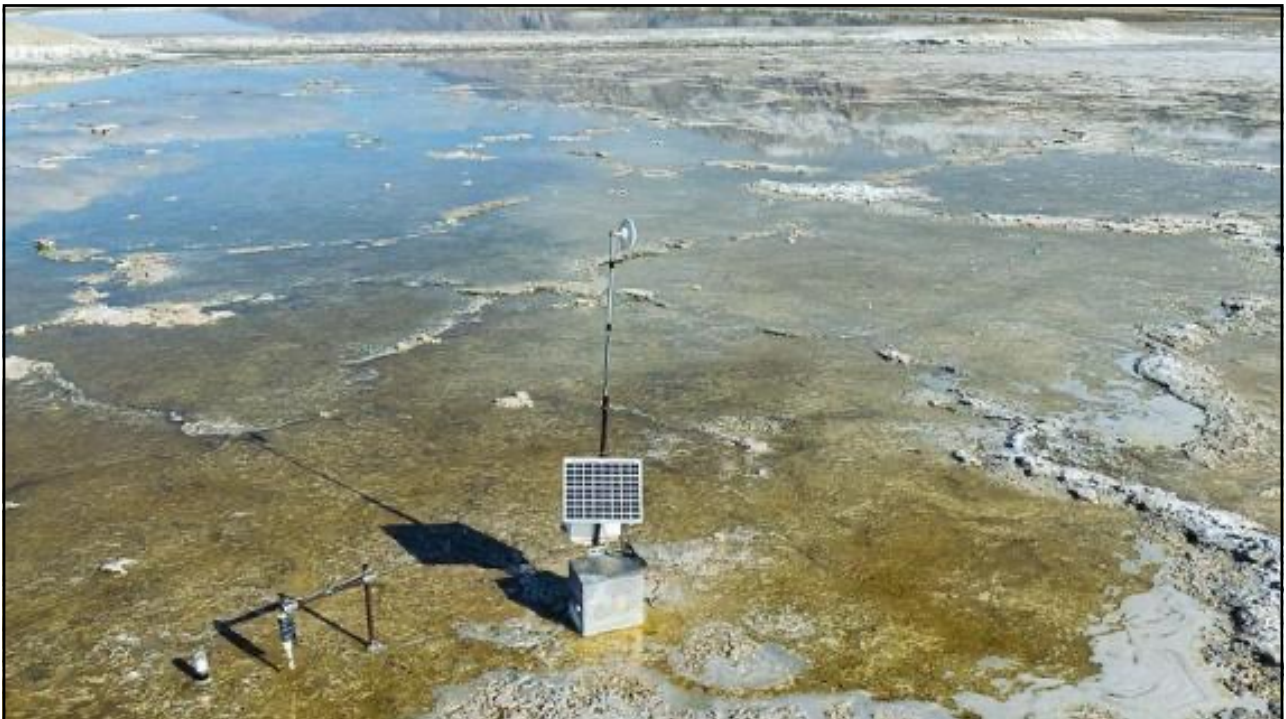


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Several causes

- presence of a lot of vegetation
- lack of land management
- Firebreaks
- fireworks
- very strong winds
- arsonists
- lack of water
- reduced fire brigades
- house construction material
- fire-fighting systems designed for small fires
- water shortage
- inability for helicopters and aircraft to fly

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- 1,343,000 swimming pools of which one in four in Los Angeles County: one for every 29 inhabitants
- Agriculture
- 1907 first aqueduct
- Despite constituting just 1.6% of the 630,000 square kilometres of the Colorado basin, California uses a quarter of its water
- Cash for Grass' (money for grass)
- give up the English lawn (huge amounts of water) by putting in succulents \$21 per square metre of grass removed,

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- The snowpack in the Sierra Nevada has decreased by about 20% since 1950 and is expected to decrease by more than 60% by the end of the century.