Fire danger weather

Climate

South Australia's environmental trend and condition report cards 2023

Trend
Getting worse

Condition
Fair

Reliability
Good

STATE

Trend

Fire danger weather conditions have increased in both occurrence and severity since the late 1970s, with the highest rates of increase in the east of the state.

The Forest Fire Danger Index (FFDI) is a measure of fire weather conditions and fuel availability which is influenced by recent rainfall. Daily FFDI values can be summed over longer periods of time to determine the accumulated FFDI. The increase in FFDI has been variable across the state (top figure). The far north-west has seen the lowest increases. The highest rates of increase in FFDI are observed in the mid north, south-east and far north-east.

This assessment uses FFDI values calculated from observed weather data from Bureau of Meteorology monitoring stations distributed across South Australia.

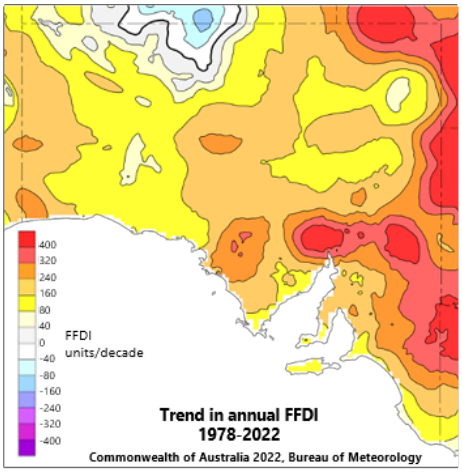
In 2022, the use of FFDI for fire danger ratings was replaced by the Australian Fire Danger Rating System (AFDRS). Future reporting will assess trends using the AFDRS Fire Behaviour Index when a sufficient time series length of data is available.

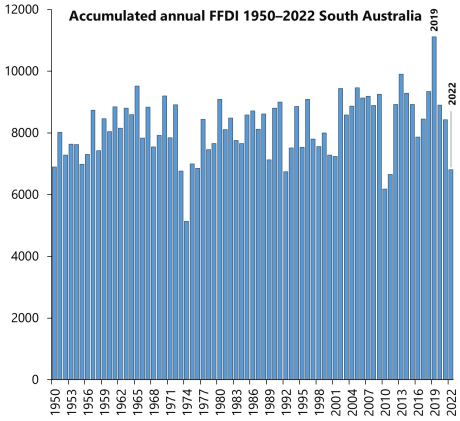
Condition

The condition is rated as fair. Higher rainfall and less extreme temperatures since 2020 have resulted in a return to more typical fire danger ratings over the past 3 years.

After the exceptionally high fire danger weather conditions experienced in 2019, the relatively wet and cool conditions of 2021 and 2022 (bottom figure) resulted in higher moisture content in soils and vegetation, somewhat reducing bushfire risks in many areas. However, in view of observed longer-term trends in temperatures and rainfall, the long-term trend in the accumulated FFDI is expected to continue to increase with increasing temperature and decreasing rainfall.

Fire danger weather has increased in occurrence and severity across most of the state since the 1970s.





Why is fire danger weather important?

The observed changes in the occurrence of severe and extreme fire weather increase the likelihood of bushfires impacting lives, property and the environment in South Australia.

This trend of increase in the occurrence of dangerous fire weather conditions is projected to continue in southern and eastern Australia. Changes in climate will also likely result in changes to bushfire fuel amount, structure and type, and the opportunities for fuel reduction burning.

What are the drivers?

The overall risk from bushfires and grass fires is driven by a range of factors, including the vulnerability of people and assets, weather, fuel availability and dryness, ignition sources, and the viability of fire suppression measures.

The likelihood of fires starting and spreading is strongly affected by weather conditions. Climate model projections indicate increasing temperatures and declining rainfall in parts of South Australia due to higher concentrations of atmospheric greenhouse gases.

What is being done?

The Country Fire Service leads bushfire hazard risk reduction and bushfire suppression in South Australia and works alongside other state agencies and local government in doing this. Risk management strategies include the management of fuel loads, planning regulations for high risk areas, suppression activities and community education.

For further information see: technical information

Government of South Australia