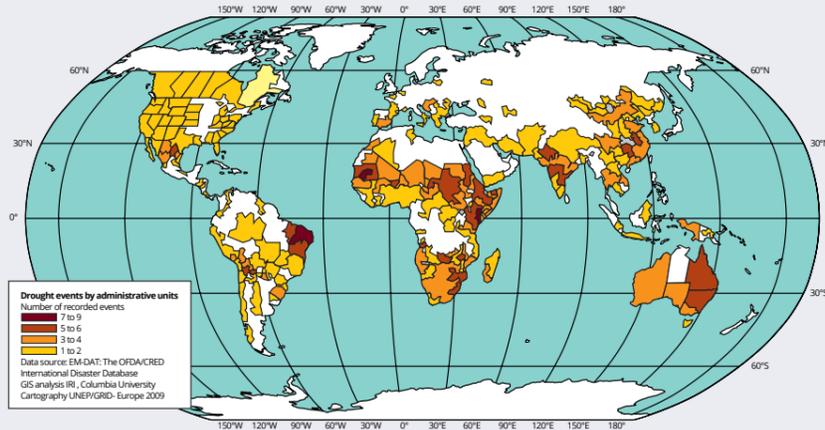


5.2.1b Distribution, changing patterns, causes and consequences of high pressure weather hazards

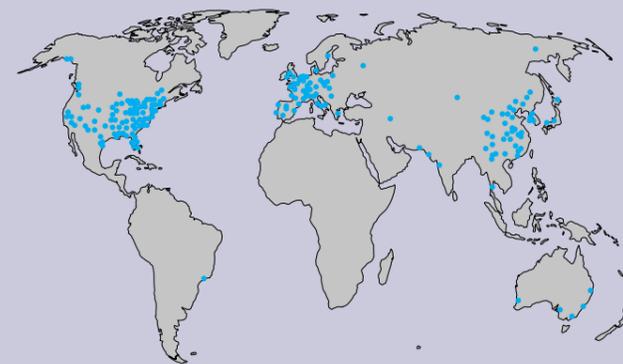
Droughts affect areas where there is:

1. Little rainfall
2. A shortage of water stored in rivers, lakes and **aquifers** or
3. Human impacts such as deforestation and intensive agriculture. Examples include Sub Sahara Africa but also more developed areas such as California and Australia.



The high pressure belt around 30° north and south of the Equator caused by the **Global Atmospheric Circulation Model** produces low rainfall and means that these areas often suffer from droughts.

Heatwaves are often linked with droughts because the high pressure systems that can cause them produce extended periods of clear skies which raise temperatures as well as reducing rainfall.



Although high pressure systems can be linked to heatwaves, in winter the clear skies can bring freezing temperatures at night and affect transport routes, burst water pipes and create fog.

In summer, heatwaves and droughts can lead to **wildfires**. These are a common secondary effect of droughts and heatwaves which often have a greater impact than the drought itself. Wildfires lead to loss of property, crops, resources, animals and people. They disrupt transportation and destroy communications, power and gas services. Ash leads to poor air quality and possible health problems.

Aquifer	An underground layer of permeable rock containing water that can be extracted using a well/pump.
Global Atmospheric Circulation Model	Describes the movement of air around the planet powered by the hot equator.
Indian Ocean Dipole	Effect caused by changing temperatures of the Indian Ocean which affect evaporation rates. A positive dipole 'turns off' vital rain systems to Australia and causes droughts.
Snowpack	Layers of snow that accumulate in high altitudes. Their slow melting feeds streams and rivers.
Jet stream	Areas of high winds caused by the temperature differences in the atmosphere. Global warming reduces these temperature differences and so slows down the jet stream.

Global drought patterns are influenced by global warming. Changing ocean temperatures affect climate phenomenon such as the Indian Ocean Dipole and alter rainfall patterns increasing drought risks in places like Australia. Rising land temperatures increase evaporation rates and reduces **snowpack** which results in lower water stores in rivers and aquifers. Global warming is also thought to be affecting the **jet stream**. When the jet stream slows or stalls, the pressure systems it moves from west to east also slow or stall, blocking other pressure systems. If a high pressure system stalls above you, the one or two dry days it would normally bring may turn into weeks and cause a drought.

In your exam, all these impacts and consequences should be linked together. Try putting them together in sentences using these connectives...

Fill in the specifics for your detailed study of a high pressure hazard (e.g. California 2015)

High pressure hazard case study name and date: _____

Locate your case study on the world map then describe it and its location. Include figures such as temperatures, duration, compass directions and other places.



- Were there any secondary effects such as wildfires?
- What impacts did it have on both the **human** and **physical environment**?
- What consequences did these impacts have on people both in the **short** and **long term**?
- How did these consequences and impacts affect the **economy**?

- ...this caused...
- ...this meant...
- ...consequently...
- ...so...
- ...as a result of...
- ...due to...
- ...therefore...
- ...because...