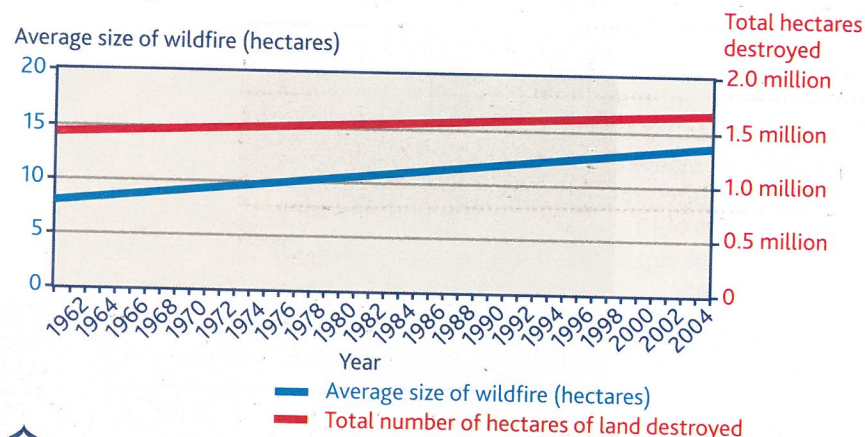


3.13 More wildfires to come?

It is not fully known whether significant changes to the pattern of wildfires are taking place. Long-term global records of the number of wildfires do not exist. However, scientists have identified several changes to **wildfire intensity**, and to the number of wildfires and areas experiencing them. By 2007, the length of the **wildfire season** in the USA had increased by 78 days compared with 1970. Also, the average size of wildfires and total area destroyed has increased steadily between 1960 and 2004 (Graph A). In the USA, detailed records of wildfires do exist. The graph does not show that in some periods the number of wildfires was below average and in other periods they were above average.



A Changes to the number and size of US wildfires, 1960–2004

It is clear that the climate does have a great effect on the number of wildfires. Periods of high numbers of wildfires coincided with periods of above-average temperature and early snowmelt in the mountains. Some scientists think that climate change, due to global warming, will mean that the number of wildfires will continue to increase (see the newspaper articles). They also think that areas in which wildfires are not common, the risk of them happening will increase. In these areas, the fires will be very intense and burn for longer, as large amounts of fuel (dead wood, leaves, etc.) have built up. This will release a lot of stored energy and large amounts of carbon dioxide into the atmosphere, further contributing to global warming.

Experts Say Massive California Wildfires Caused by Climate Change

Experts say the fires sweeping southern California were predicted by climate change models. There may be many more such events in the future as vegetation grows heavier than usual and then ignites during long droughts. They said that

this 'may be another piece of evidence that climate change is a reality'. The models suggest that parts of the United States may be experiencing several wet years in a row followed by several that are drier than normal. If you get a wildfire

during these periods it can spread very quickly. 'In the future, huge fires may simply be a normal part of the landscape.' Droughts or heatwaves, the researchers said, would lead to wildfires larger than ever seen before.

In this section you will learn:

how to make an informed judgement as to whether or not the number and severity of wildfires is changing

about the nature of the changes to the number and severity of wildfires.

Key terms

Wildfire intensity: the severity of burning.

Wildfire season: the period of the year during which wildfires occur.

NASA: National Aeronautics and Space Administration – the US space agency.

Wildland–urban interface: area where houses and other human developments are built on the fringes wilderness areas.

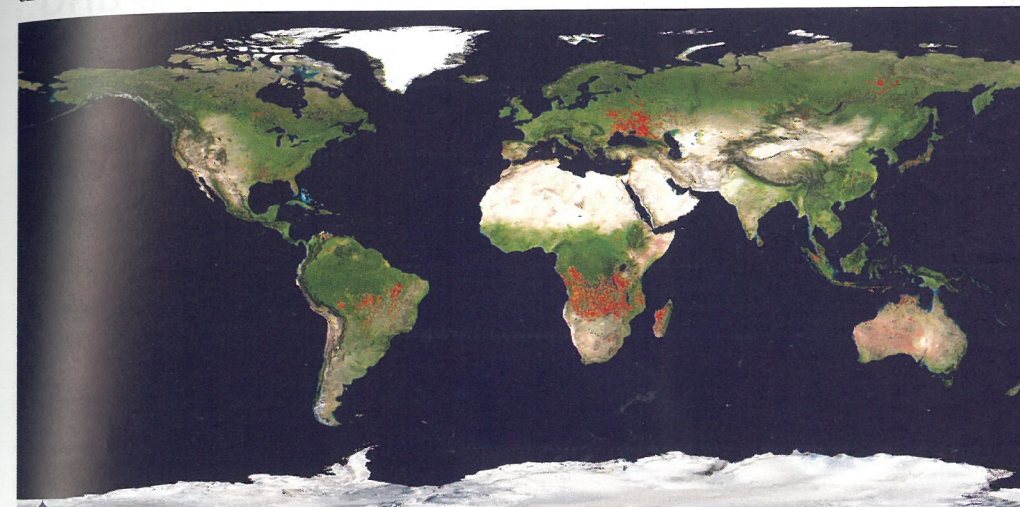
Did you know ??????

Across the world, over 350 million hectares of forest are destroyed by wildfire each year.

AQA Examiner's tip

Be able to explain why the damage caused by wildfires is likely to increase.

Other scientists feel that periods of increased wildfires are part of a natural cycle where there are periods of higher temperatures and lower rainfall, similar to those factors affecting tropical storms (see pages 78–79). Detailed studies of wildfires across the globe are now taking place, to monitor the problem and find out if changes to their numbers are permanent. Satellite images produced by NASA can now show the location and intensity of all wildfires (Photo B).



B NASA satellite image of wildfires during 2002

What is known for certain is that the cost of damage from wildfires is increasing, especially in more developed countries. Photo B shows that the greatest number of wildfires (areas in red) occur in dryland areas of Africa, South America and Australia. However, the wildfires that attract the most media attention are those in the USA and Europe; especially when the multi-million-dollar mansion of a movie-star is at risk (Photo C). In many areas, as people become more affluent, they choose to live or have second homes in remote rural areas. In the USA alone, over 10 million homes have been built in the **wildland–urban interface**. This increases the costs of fire fighting and prevention, insurance claims and the risk to human life.



C A wildfire destroys a Malibu mansion in the USA

Climate Change Could Lead to More and Larger Wildfires

Researchers say that the area burned by wildfires could double by the end of the century if the climate warms. Researchers have seen relationships between climate records and an 85-year record of wildfires during the 20th century and used them in state-of-the-art global climate models. They said:

'Models linking the size of area burned with temperatures during the fire season, predict that global warming will bring a five-fold increase in wildfires.'

links

Learn more about the wildland–urban interface at www.silvis.forest.wisc.edu/projects/WUI_Main.asp

Activities

- 1 Describe the changes to the average size and total damage created by US wildfires since 1960 (Graph A).
- 2 Suggest two reasons why the number and size of wildfires may be increasing.
- 3 Suggest one argument against the idea that the number and size of wildfires will continue to increase.
- 4 Give two reasons why the cost of damage from wildfires may be increasing.

extension Use the internet to research the possible link between climate change and the number of wildfires.