

21st Century

TEENS *Senior*²

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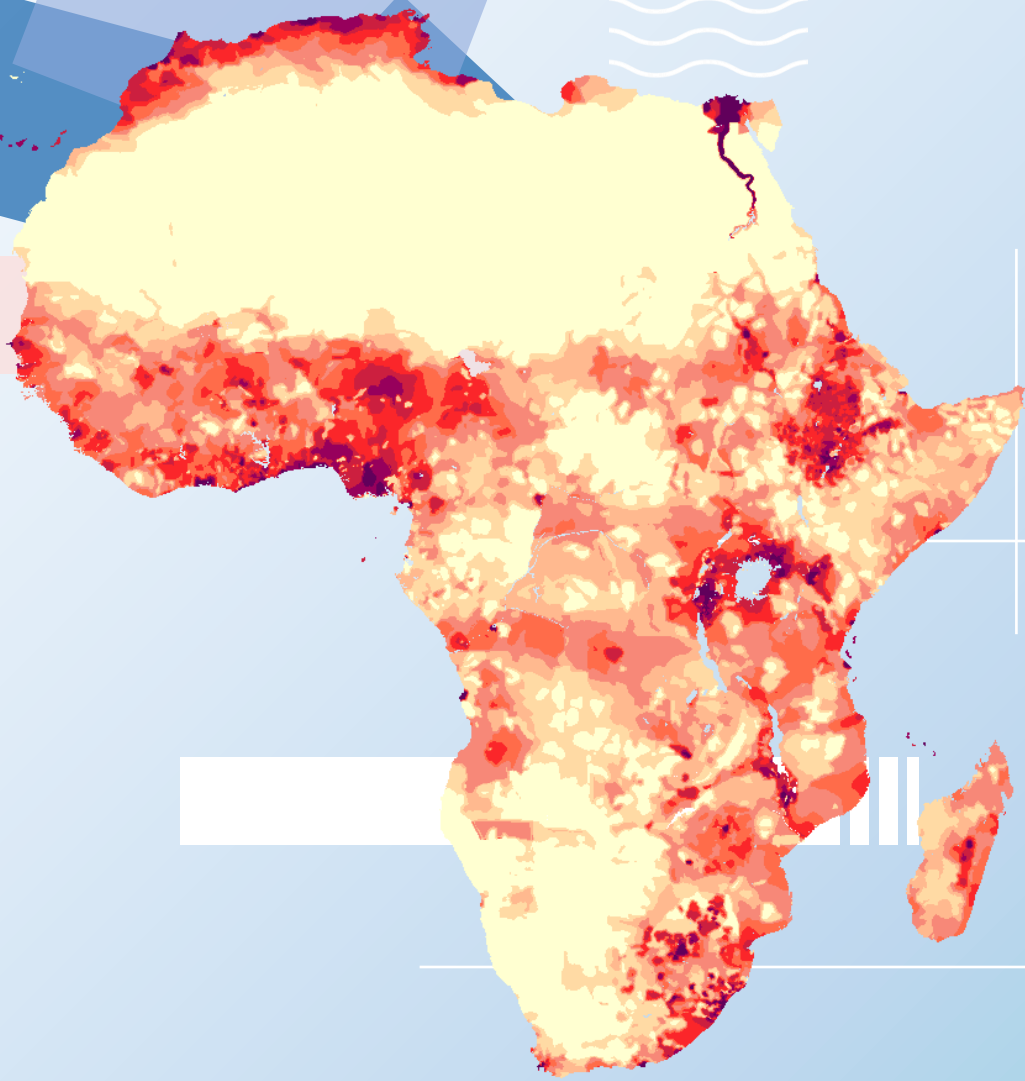
Polar heatwave (P7)

南极大陆出现创纪录高温

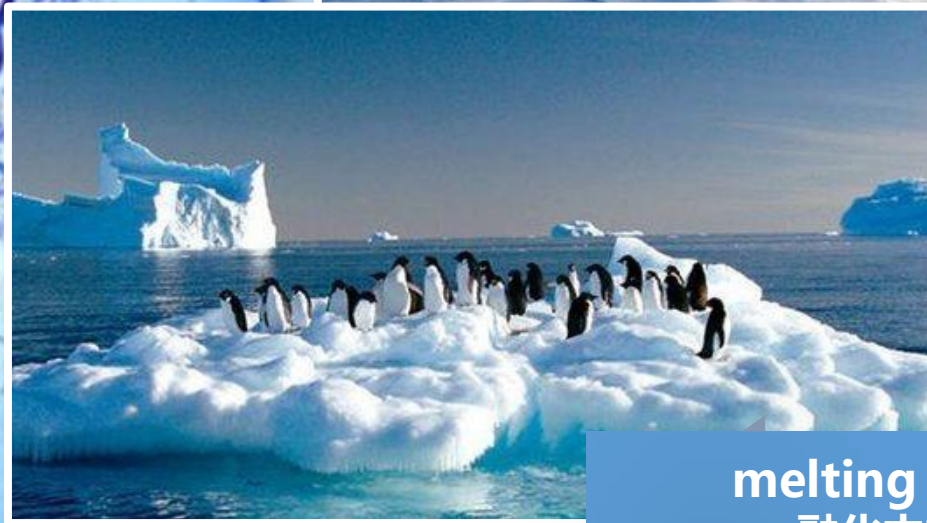
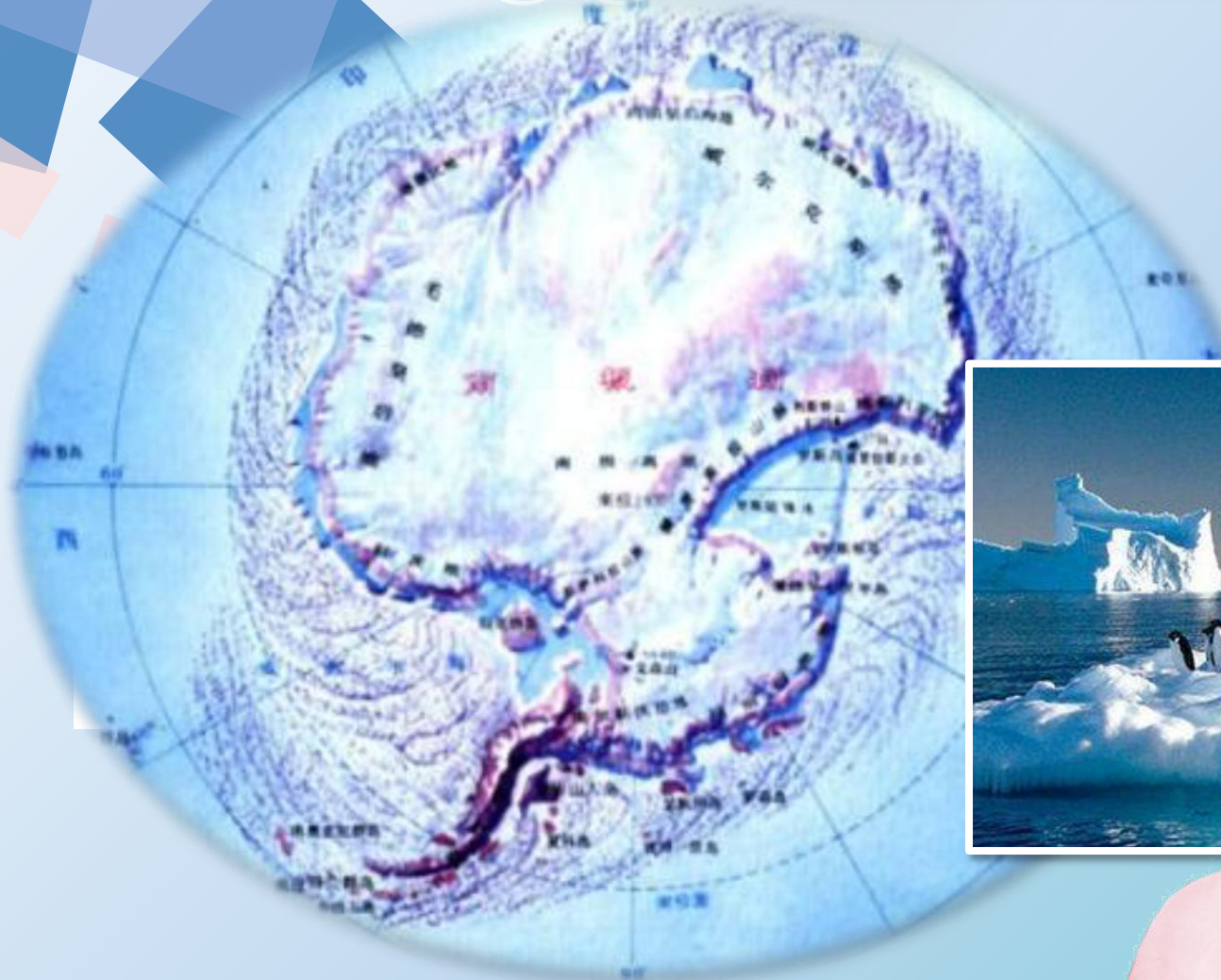
Shen Ai

Xiamen Foreign Language School

heatwave 热浪



Antarctica 南极洲



melting glaciers
融化中的冰川

Read and try to figure out the main idea of this text.



Tip: you can underline some key words or draw a mindmap to help you grasp the key information.

Polar heatwave

南极大陆出现创纪录高温。



词数 378 测试见IV版
建议阅读时间 5分钟

Antarctica is known for being a vast land of ice and snow, a place too cold for most life. *Despite* (尽管) this, the continent is slowly starting to turn warm. According to the Guardian, the Antarctic has *registered* (登记) a new high temperature for the first time on record, **prompting** fears of climate **instability** in the world's iciest place.

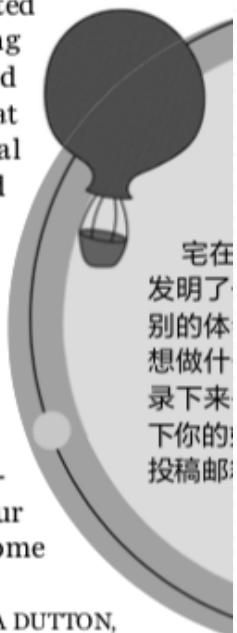
On Feb 9, Brazilian researchers at Seymour Island reported a temperature of 20.75 C on the icy continent of Antarctica. It was almost a full degree higher than the previous record of 19.8 C, taken on Signy Island in January 1982.

This record-breaking reading was taken at a *monitoring* (监测) station in the northern part of Antarctica. According to Brazilian soil scientist Carlos Schaefer, the temperature was documented during a 20-year-long research project. The focus of this project is to study the effect that climate change has on the *permafrost* (永久冻土) within the region. Permafrost is soil that stays frozen for at least two years. Although this is a first record high for Antarctica, Schaefer stressed that "We can't use this to **anticipate** climatic changes in the future. It's simply a signal that something different is happening in that area."

But in fact, the last high temperature reading was in the 19 C range. These higher temperatures can cause ice and *glaciers* (冰川) in Antarctic regions to melt. The Antarctic *peninsula* (半岛) - the long finger of land that *stretches* (延伸) towards Argentina - is most dramatically affected. Scientists saw glaciers that have retreated by more than 100 meters in Discovery Bay where the snow melted in little more than a week, leaving dark **exposed** rock. This melted ice leads to a rise in sea levels that can threaten the safety of coastal areas. It's believed to be behind an alarming decline of more than 50 percent in *chinstrap penguin* (帽带企鹅) colonies, which are dependent on sea ice.

Like American writer Ernest Hemingway once said, "The Earth is a fine place and worth fighting for." We should do everything we can to help save our planet. Otherwise, it may become too hot for us to fix.

BY LAURA DUTTON,
21ST CENTURY TEENS STAFF



宅在
发明了
别的体
想做什
录下来
下你的
投稿邮

(para.1-2)

- ① Antarctica is known for being a vast land of ice and snow, a place too cold for most life. Despite (尽管) this, the continent is slowly starting to turn warm. According to the Guardian, the Antarctic has registered (登记) a new high temperature for the first time on record, prompting fears of climate instability in the world's iciest place.
- ② On Feb 9, Brazilian researchers at Seymour Island reported a temperature of 20.75 C on the icy continent of Antarctica. It was almost a full degree higher than the previous record of 19.8 C, taken on Signy Island in January 1982.

(para.3)

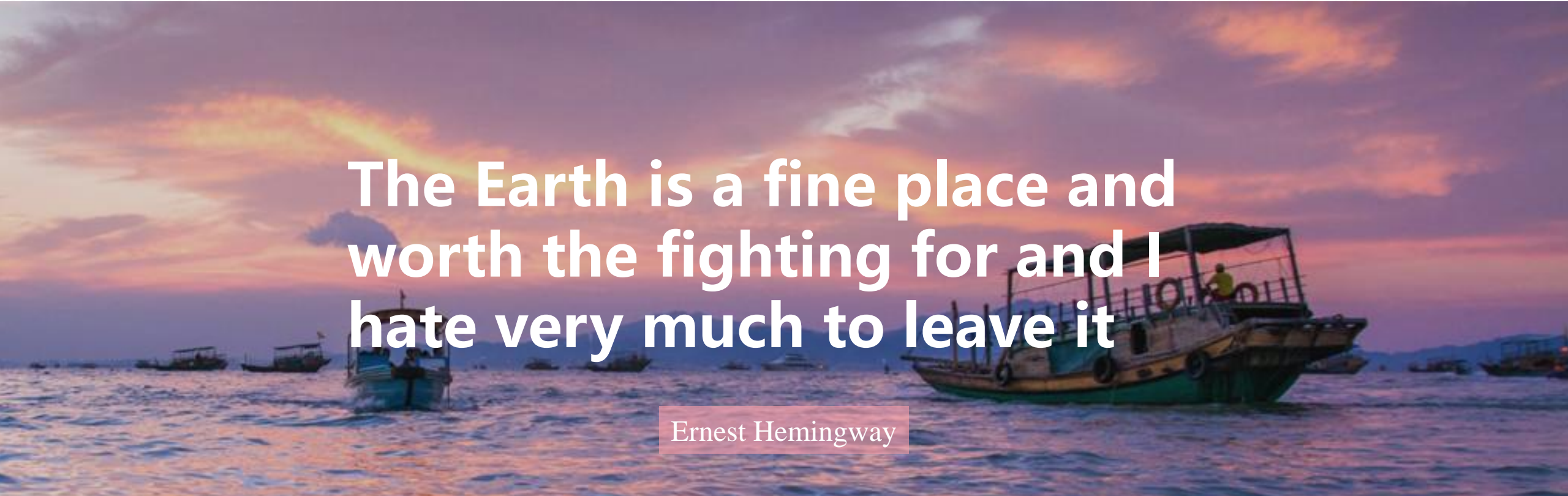
- ③ This record-breaking reading was taken at a monitoring (监测) station in the northern part of Antarctica. According to Brazilian soil scientist Carlos Schaefer, the temperature was documented during a 20-year-long research project. The focus of this project is to study the effect that climate change has on the permafrost (永久冻土) within the region. Permafrost is soil that stays frozen for at least two years. Although this is a first record high for Antarctica, Schaefer stressed that “We can’t use this to anticipate climatic changes in the future. It’s simply a signal that something different is happening in that area.”

(para.4)

- ④ But in fact, the last high temperature reading was in the 19 C range. These higher temperatures can cause ice and glaciers (冰川) in Antarctic regions to melt. The Antarctic peninsula (半島) – the long finger of land that stretches (延伸) towards Argentina – is most dramatically affected. Scientists saw glaciers that have retreated by more than 100 meters in Discovery Bay where the snow melted in little more than a week, leaving dark exposed rock. This melted ice leads to a rise in sea levels that can threaten the safety of coastal areas. It's believed to be behind an alarming decline of more than 50 percent in chinstrap penguin (帽帶企鵝) colonies, which are dependent on sea ice.

(para.5)

- ⑤ Like American writer Ernest Hemingway once said, “The Earth is a fine place and worth fighting for.” We should do everything we can to help save our planet. Otherwise, it may become too hot for us to fix.

A photograph of a sunset over the ocean. The sky is filled with soft, colorful clouds in shades of orange, pink, and purple. Several boats are visible on the water, including a large green and white boat in the foreground on the right. The overall mood is serene and beautiful.

The Earth is a fine place and
worth the fighting for and I
hate very much to leave it

Ernest Hemingway

Polar Heatwave

• (para. 1) registered; a new high temperature
What happened?

• (para. 2) Brazilian researchers
• (para. 3) a project; permafrost (永久冻土)
Who? How?

• (para. 4) ice and glaciers; melt; Argentina; Discovery Bay; costal cities; chinstrap penguin (帽带企鹅) colonies
Effects

• (para. 5) do everything we can; too hot to fix it
Appeal 呼吁

Read and answer the following questions

1. According to the Guardian, what does the new high temperature mean?
2. Where does the new record come from? / How was it recorded?
3. According Carlos Schaefer, what does the new record mean?
4. What are the effects of this phenomenon?

Q1: According to the Guardian, what does the new high temperature mean?

- ✓ According to the Guardian, the Antarctic has registered(登记) a new high temperature for the first time on record, **prompting** fears of climate instability in the world's iciest place.

to cause sth. to happen
促使; 导致
= **provoke**

Q2: Where does the new record come from? / How was it recorded?

reading n. the amount or number shown on an instrument used for measuring sth (仪表的) 读数

- ✓ This record-breaking **reading** was taken at a monitoring (检测) station in the northern part of Antarctica.
- ✓ the temperature **was documented** during a 20-year-long research project, whose focus is to study the effect that climate change has on the **permafrost** (永久冻土)

soil that stays frozen for at least two years.
permanent+frost



Q3: According Carlos Schaefer, what does the new record mean?

to expect; to see what might happen in the future and take action to prepare for it

- ✓ “We can’t use this to **anticipate** climatic changes in the future. It’s simply a signal that something different is happening in that area.”
- ✓ This new high record is not necessarily related to climatic changes.

objective & rigorous 严谨的

Q4: What are the effects of this phenomenon?

higher temperatures



melt



dram atically affected



**leaving dark
exposed rock**

Q4: What are the effects of this phenomenon?

higher temperatures



**rise in sea levels
threaten the safety of coastal areas**



**decline in chinstrap
(are dependent on sea ice)**

Are there any other effects of melting glaciers?

Shortage of freshwater

97% of earth's water is seawater with only 3% being freshwater which is supposed to cater (迎合) to more than 7 billion people on the planet. About 75% of the freshwater is trapped in glaciers with 90% of this freshwater bearing glaciers being located in the Antarctic. With an accelerated (加速的) melting rate that is higher than the replacement of the ice, more of the freshwater is lost into oceans where they mix with sea waters.



Are there any other effects of melting glaciers?

Electricity shortage



Hydro-electric (水力发电) power depends on rivers which get their water from highlands. These highlands and mountains have ice which melts during the warm months to produce streams which join up to form rivers which power hydro-electric turbines (涡轮). As the ice disappears rivers are shrinking (=decreasing), and eventually they will dry up and effectively lead to the end of hydro-electric power which a considerable percentage of the human population depend. With no electricity, a lot of things like industries that power most economies will come to stay.

Are there any other effects of melting glaciers?

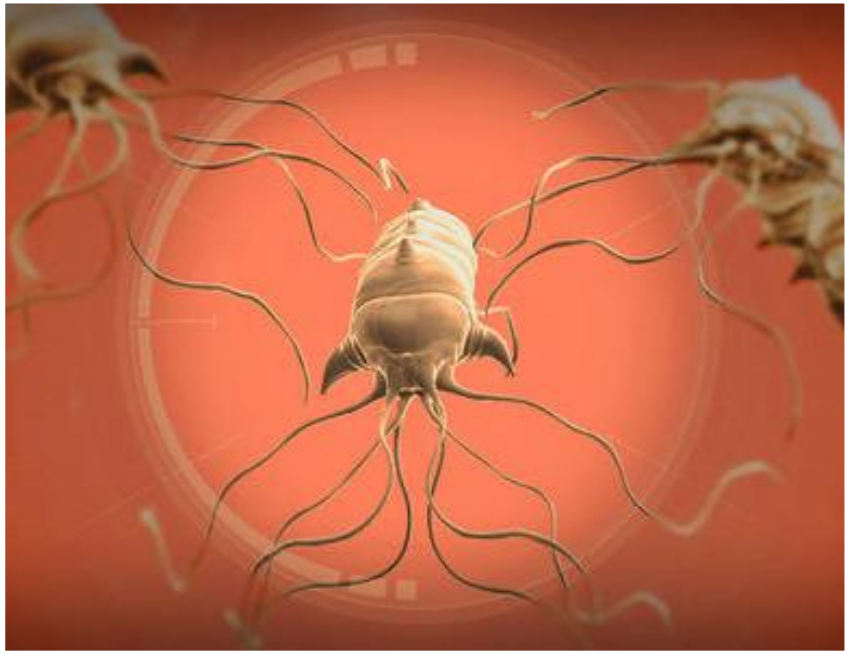
Extinction of animals

Polar bear numbers have been declining over the years due to the disappearance of ice in North and South Pole. Bears have adapted to the cold conditions of these regions, but as the climate gets warmer and the ice sheets melt away, they are left exposed to the unfamiliar environment. This loss of habitat has also impacted their source of food, and as a result, they are now an endangered species.



Are there any other effects of melting glaciers?

A return of deadly diseases



Ice is a purifier, and for ages, the cold glaciers of the earth have been absorbing harmful chemicals, banned pesticides that went airborne, as well as trapping ancient viruses and bacteria which become inactive in cold conditions.

As the ice continues to melt, more of these trapped viruses, bacteria, and chemicals are at risk of being released back into circulation, if this were to occur humanity could be faced with diseases that could wipe life off the earth.

What causes the “polar heatwave” ?



- Watch a video clip about **global warming.**
- Take notes about the **causes, effects** and **resolutions.**



What causes global warming?

—— [Natural Causes](#) of Global Warming

Forest Fires

Natural forest fires are usually televised on the news. While this loss is tragic, the effects of these natural occurring forest fires pose a problem for the earth's air. Forest fires emit carbon-filled smoke into the atmosphere, and new forests' growth is slow and not stable enough to produce the much-needed oxygen into the newly, suffocating (窒息) carbon air. Natural forest fires will eventually **run their course** (自然发展), but left in the ashes are polluting gases that **get trapped in** the atmosphere.



What causes global warming?

—— [Natural Causes](#) of Global Warming

Permafrost



When frozen soil, constituting about 25% of the Northern Hemisphere, increases, it keeps in the carbon and methane (甲烷) gases. So, while you may be thinking about how it can be global warming when you're still freezing in Tibet, the permafrost is actually leaking carbon into the earth's atmosphere. While scientists cannot stop permafrost from emitting these gases, the earth's melting icecaps (冰盖) at incredibly fast rates, are cause for concern.

What causes global warming? — Man-made Causes of Global Warming

Man-induced Deforestation

Deforestation is the cutting down of trees and plants to make way for any development activity. Mother nature taking out an entire forest is one thing, but the man doing it for the use of crop cultivation, fuel, and other consumption, is another. Each day our forests are bulldozed (用推土机清除) for the prospect of farms and factories. Fuel used for wood and charcoal only adds to the polluted gases in the atmosphere.



What causes global warming? — Man-made Causes of Global Warming

Fossil Fuels



Pollution, whether it is vehicular, electrical or industrial, is the main contributor to global warming. Every day billions of vehicles release various gases into the atmosphere. This causes the Earth to warm up and increase its average temperature. Electricity causes pollution in many ways. Over 75% of electricity worldwide is produced by the burning of fossil fuels. Many gases are sent into the air when fossil fuels are burnt of which main is the carbon dioxide gas.

What causes global warming? — Man-made Causes of Global Warming

Overpopulation

Since carbon dioxide contributes to global warming, the increase in population makes the problem worse because we breathe out more carbon dioxide in the atmosphere. More people means more demand for food, more carbon dioxide in the atmosphere, more demand for cars and more demand for homes.



What causes global warming? — Man-made Causes of Global Warming

Fertilizer Use



Think of the countless farmlands across the heartland of America. The unique thing about fertilizer is that it produces nitrous oxide (氧化亚氮) once it absorbs the soil. Nitrous oxide is 300 times more dangerous than carbon dioxide. The EPA strongly warns that the farming industry's use of fertilizer is one of the leading causes of global warming.

What can we do to help?

Reduce, Reuse, Recycle

Reduce your need to buy new products resulting in a smaller amount of waste. Even if you need to buy, consider buying eco-friendly products. It is most effective of the three R's. It simply says cut back from where are you now.



What can we do to help?

Drive Less or Carpool (拼车)



By driving less you are not only saving fuel but also helping in reducing global warming. Also, look out for other possibilities, e.g. carpooling. If you have colleagues who live in the same area then you can combine trips. If you need to go to a local market then either walk or go by cycle. Both of them are a great form of exercise. The biggest pollution emitting fumes are caused by oil and gasoline. Cutting down consumption is a huge step to reducing energy wastes.

What can we do to help?

Buy Energy-Efficient Appliances

Always buy products that are energy efficient as they can help you save a good amount of money on your energy bill. Energy-efficient products can help you to save energy, save money and reduce your carbon footprint.



What can we do to help?

Plant a Tree



Planting trees can help much in reducing global warming than any other method. They not only give oxygen but also take in carbon dioxide, during the process of photosynthesis, which is the main source of global warming.

Join the Ant Forest project raised by Alipay.

What can we do to help?

Spread the Awareness

Always try your best to educate people about global warming and its causes and after effects. Tell them how they can contribute their part by saving energy that will be good for the environment. Gather opportunities and establish programs that will help you to share information with friends, relatives, and neighbors.



*A Small Change Can
Make a Big Difference*





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