



Ancient Antarctic Ice Reveals Wildfire Increases During Climate Shifts

Description

Scientists found tiny bubbles in old ice from Antarctica. These bubbles showed that wildfires happened when the climate changed quickly.

Usually, we know that temperature changes, rain differences, and methane spikes are signs of climate change. But fires were not part of this story before.

Ben Riddell-Young, a lead scientist, said, "We were not looking for fire signals at first." They wanted to understand why methane levels went up during climate changes in the past.

Their ice core samples go back 67,000 years and show air trapped in the ice. They used special machines to study this methane.

Each sample took four hours to analyze. They found a big change in the methane's isotopes, which told them a lot.

When methane comes from living things, it shows a specific pattern. But if it comes from deep inside the Earth, it looks different.

The team found that when climate changed quickly, wildfires also increased. This was something we didn't know before.

This study helps us understand how climate and fire are connected. It is important as wildfires become more common today.

Vocabulary List:

1. **Methane** /'mɛθ.ɛɪn/ (noun): A colorless odorless gas that is a primary component of natural gas and a potent greenhouse gas.
2. **Isotopes** /'aɪ.sə.təʊps/ (noun): Variants of a particular chemical element that have the same number of protons but different numbers of neutrons.
3. **Analyzed** /'æŋ.ə.laɪzd/ (verb): Examined in detail in order to understand or explain something.
4. **Climate** /'klaɪmət/ (noun): The long-term average of weather patterns in a particular area.
5. **Wildfires** /'waɪld.faɪərz/ (noun): Uncontrolled fires that occur in wildland areas often exacerbated by dry conditions and climate change.
6. **Trapped** /træpt/ (adjective): Caught in a tight or confined space; unable to escape.



Comprehension Questions

Multiple Choice

1. What did scientists find in old ice from Antarctica?
Option: Tiny bubbles
Option: Ancient artifacts
Option: Fossilized remains
Option: Microplastics
2. What signs of climate change were traditionally known before the discovery of wildfires in ice cores?
Option: Temperature changes
Option: Rain differences
Option: Methane spikes
Option: All of the above
3. What did the team initially want to understand when studying methane levels in ice cores?
Option: Wildfire occurrences
Option: Effect of temperature changes
Option: Cause of methane spikes
Option: Rainfall patterns
4. Which type of methane source has a specific pattern?
Option: Living things
Option: Deep Earth sources
Option: Volcanic activity
Option: Oceanic emissions
5. What did the team discover about the relationship between climate change and wildfires?
Option: Wildfires decreased during climate change
Option: Wildfires were unrelated to climate changes
Option: Wildfires increased with rapid climate change
Option: Wildfires were a constant regardless of climate
6. Why is the study on wildfires in ice cores important?
Option: To understand ancient fire history



- Option: To predict future fire occurrences
- Option: To improve ice extraction techniques
- Option: To study ancient civilizations

True-False

- 7. Scientists were initially searching for fire signals in ice cores.
- 8. Methane always shows the same pattern regardless of its source.
- 9. The study shows that wildfires have no correlation with climate change.
- 10. The ice core samples used in the study date back 100,000 years.
- 11. Climate change can cause an increase in wildfires.
- 12. The study's findings are irrelevant to modern times.

Gap-Fill

- 13. The ice core samples go back _____ years.
- 14. Each sample took _____ hours to analyze.
- 15. When methane comes from deep inside the Earth, it looks _____.
- 16. The team studied the isotopes of methane to understand its _____.
- 17. Understanding the connection between climate and fire is crucial as wildfires become _____ today.
- 18. Ben Riddell-Young is a lead _____ on the team.

Answer

Multiple Choice: 1. Tiny bubbles 2. All of the above 3. Cause of methane spikes 4. Living things 5. Wildfires increased with rapid climate change 6. To predict future fire occurrences

True-False: 7. False 8. False 9. False 10. False 11. True 12. False

Gap-Fill: 13. 67,000



14. four 15. different 16. origin 17. more common 18. scientist

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. What is a meteorite?

- Option: A type of comet
- Option: A piece of rock from space that has landed on Earth
- Option: A shooting star
- Option: An artificial satellite

2. What does the field of psychology study in relation to individuals?

- Option: Weather patterns
- Option: Animal habits
- Option: College tuition fees
- Option: Behavior and mental processes

3. What type of beverage is ethanol?

- Option: Milk
- Option: Water
- Option: Alcohol
- Option: Soda

4. What term is used to describe the change in position of an object over time?

- Option: Motion
- Option: Rest
- Option: Stasis
- Option: Inactivity

5. What is the average weather condition in a specific area over a long period of time?

- Option: Temperature
- Option: Season
- Option: Climate
- Option: Forecast

6. What is the natural process of becoming older?



- Option: Growing
- Option: Ageing
- Option: Youthening
- Option: Immortality

7. What is the probability of harm or damage?

- Option: Entropy
- Option: Safety
- Option: Risk
- Option: Risk Diminishment

8. What is the organized provision of medical care to individuals or a community?

- Option: Veterinary care
- Option: Dental care
- Option: Aesthetic care
- Option: Healthcare

9. What are advantages or rewards from a particular action or situation?

- Option: Obstacles
- Option: Drawbacks
- Option: Benefits
- Option: Hindrances

10. Which term best describes someone who is full of energy and enthusiasm?

- Option: Lethargic
- Option: Energetic
- Option: Apathetic
- Option: Torpid

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. After the explosion the area was littered with _____.

12. _____ is a general term for a decline in mental ability severe enough to interfere with daily life.

13. The number of people living in a particular area is known as the _____.

14. The best part of the concert was definitely the _____ of the lead singer's vocal range.



15. It is important to have proper _____ of your emotions in stressful situations.
16. Putting aside some money each month is a good way to build up your _____.
17. Cow flatulence is a significant source of _____ emissions.
18. The data was thoroughly _____ by the research team.
19. The hikers found themselves _____ in the cave due to the sudden rockfall.
20. _____ are a major concern during hot and dry seasons in forested regions.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. The asteroid had a significant impact on the Earth's ecosystem millions of years ago.
22. The large hole in the ground was caused by a meteorite impact and is known as a crater.
23. The sudden appearance of the rare bird species in the city park was quite surprising to the birdwatchers.
24. Overcoming the obstacles in the mountain terrain proved to be a tough challenge for the climbers.
25. The sound of the mouse skittering across the attic floor startled the homeowner.
26. The biologist specialized in studying insect behavior in their natural habitats.
27. The team of researchers conducted experiments to test the new drug's efficacy.
28. Despite his fame he preferred to live an ordinary life away from the spotlight.
29. The chef's special dish was the highlight of the evening at the gourmet festival.
30. Scientists use isotopes to determine the age of ancient artifacts through radiocarbon dating.

Answer

Multiple Choice: 1. A piece of rock from space that has landed on Earth 2. Behavior and mental processes 3. Alcohol 4. Motion 5. Climate 6. Ageing 7. Risk 8. Healthcare 9. Benefits 10. Energetic

Gap-Fill: 11. debris 12. Dementia 13. population 14. highlight 15. control 16. savings 17. methane 18. analyzed 19. trapped 20. Wildfires

Matching sentence: 1. Impact



2. Crater 3. Surprising 4. Challenge 5. Skittering 6. Naturalist 7. Researchers 8. Ordinary 9. Highlight 10. Isotopes

CATEGORY

1. Health - LEVEL1

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