Papua's last tropical glaciers are vanishing

LEVEL B2


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I. WARM-UP

1. Have you ever seen snow or glaciers in real life? Where?
2. What places in your country are special for nature or culture?
3. How is your area's weather different from 10–20 years ago?

II. KEY VOCABULARY

glacier
A large, slow-moving mass of ice that forms on land.

retreat
The movement backwards; with glaciers, when they shrink and pull back.

equator
The imaginary line around the middle of the Earth.

precipitation
Water that falls from the sky, such as rain or snow.

Indigenous
Describing the original people of a place.

archive
A collection that keeps records or information for the future.

habitat
The natural home where a plant or animal lives.

excavate
To dig out earth or rock, often for mining or building.

III. READING

Papua's highest mountains sit close to the equator, yet their peaks once carried "eternal snow". Only small patches remain around Puncak Jaya, or Carstensz Pyramid. Scientists say these could disappear within a year or two.

Glacier cover has fallen from nearly 1,900 hectares in the 19th Century to about 16 hectares today. The glaciers' retreat mirrors global warming from human activity, especially burning fossil fuels. As temperatures rise, the freezing level climbs and more precipitation arrives as rain, not snow.

El Niño can speed this up. Marie Šabacká, a glacier ecologist, says Papua holds the last tropical ice between the Andes and Himalayas. Scientists had been taking ice cores there to build a climate archive, but the record is vanishing. For Indigenous Papuans, the range is a spiritual anchor.

Amungme activist Adolfina Kum compares its loss to losing Mecca or the Vatican, and Moni woman Elfrida Natkime links the white peaks with honesty and moral paths. Mining at Freeport's Grasberg site has excavated slopes and reshaped habitats.

Reading text adapted from reporting by **BBC News**: *"The treasured 'eternal snow' on this tropical...". Original article linked at theenglishwire.com.*

IV. COMPREHENSION QUESTIONS

1. Which mountain still has the last patches of snow in Papua?
2. How much has glacier cover near the peak decreased since the 19th Century?
3. What weather change happens as temperatures rise on the mountain?
4. Who is the scientist quoted about Papua's tropical ice, and what did scientists do there?
5. Why is the mountain range important to Indigenous groups like the Amungme and Moni?

V. DISCUSSION

1. Should governments protect cultural landscapes as strongly as wildlife habitats?
2. What evidence in this story most clearly shows climate change?
3. Should mining be allowed in places that are sacred to local people?
4. What could tourists do to reduce harm when visiting fragile mountains?

VI. GRAMMAR FOCUS

Past perfect continuous

Use had been + verb-ing for actions that were happening over time up to a past moment. This tense shows a continuous activity that finished or changed before another past event.

*"Scientists **had been taking** ice cores there to build a climate archive."*

*"The climbers **had been walking** for hours when the storm began."*

VII. GRAMMAR EXERCISE

Complete each sentence with the correct past perfect continuous form.

1. Researchers (study) ___ glaciers for years before then. _____
2. Locals (notice) ___ unusual melt for months by then. _____
3. Villagers (climb) ___ peaks regularly before then. _____
4. Miners (excavate) ___ slopes for decades by then. _____
5. Scientists (measure) ___ ice every season before then. _____

Teacher's Notes

TEACHERS ONLY

These notes are designed to help you get the most out of this lesson. Please do not share this page with students.


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I. LESSON GUIDE

- Timing: 8–10 minutes warm-up, 10 minutes vocabulary, 12–15 minutes reading, 10 minutes comprehension, 10 minutes grammar, 10–12 minutes discussion.
- Pre-teach names and places: Papua, Puncak Jaya/Carstensz Pyramid, Andes, Himalayas; drill pronunciation of Šabacká and Amungme/Moni.
- Run reading as jigsaw: half the class marks scientific details (data, causes), the other half marks cultural points (beliefs, local impacts), then pair to summarise.
- Sensitivity: the story involves Indigenous beliefs and mining impacts; start discussion in pairs and invite students to speak about the news, not personal faith or politics, if they prefer.

II. DISCUSSION FACILITATION TIPS

1. Take a quick show of hands, then pair students with different views to propose one policy.
2. Push for specifics: the 1,900→16 hectares figure or rain-not-snow; don't accept "it's warmer".
3. Set up brief role-pairs (company vs community) and ask each to suggest one concrete fix.
4. Brainstorm a list, then have groups rank a top three low-impact behaviours and justify them.

III. EXTENSION ACTIVITIES

Debate: In teams, argue for or against closing Puncak Jaya to tourism; each side gives a 90-second case.

Writing: Write a 100-word museum label explaining why Papua's ice cores are a "climate archive."

IV. ANSWER KEY OVERVIEW

Comprehension questions: short factual answers from the text.

Grammar exercise: Past perfect continuous

Discussion: open-ended. Accept any reasonable ideas supported by examples and reasoning.

Answer Key

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These answers are for teachers only. Please do not share this page with students.


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IV. COMPREHENSION QUESTIONS

1. Which mountain still has the last patches of snow in Papua?
   Puncak Jaya, also called Carstensz Pyramid.
2. How much has glacier cover near the peak decreased since the 19th Century?
   From nearly 1,900 hectares to about 16 hectares today.
3. What weather change happens as temperatures rise on the mountain?
   More precipitation falls as rain instead of snow.
4. Who is the scientist quoted about Papua's tropical ice, and what did scientists do there?
   Marie Šabacká; they had been taking ice cores to build a climate archive.
5. Why is the mountain range important to Indigenous groups like the Amungme and Moni?
   It is a spiritual centre linked to beliefs and moral guidance.

V. DISCUSSION

Open answers. Accept any reasonable ideas supported by examples and reasoning.

VI. GRAMMAR FOCUS

Key point: Use had been + verb-ing for actions that were happening over time up to a past moment. This tense shows a continuous activity that finished or changed before another past event. (Example 2 constructed.)

"Scientists **had been taking** *ice cores there to build a climate archive."*

"The climbers **had been walking** *for hours when the storm began."*

VII. GRAMMAR EXERCISE

Complete each sentence with the correct past perfect continuous form.

1. Researchers ___ glaciers for years before then. **had been studying**
2. Locals ___ unusual melt for months by then. **had been noticing**
3. Villagers ___ peaks regularly before then. **had been climbing**
4. Miners ___ slopes for decades by then. **had been excavating**
5. Scientists ___ ice every season before then. **had been measuring**