The Guardian

one stop english

In the most untouched, pristine parts of the Amazon, birds are dying. Scientists may finally know why

Level 3: Advanced

1 Warmer

a. Discuss the following questions in pairs.

- Why do you think bird populations are declining, even in areas without human activity?
- What challenges do scientists face when trying to understand why certain species are disappearing?
- If creating protected areas is not enough to save wildlife, what other solutions do you think might help?

2 Key words

a. Find the words from the wordpool in the article. Read the definitions and match them to a word from the wordpool.

reservoir	expanses	intrinsically	pinpoint
weave	fluctuations	halved	pristine
conceded	forage	tracts	precipitation
the dawn chorus	seeped	ornithologist	pesticides
encroaching	harsher	out of step with	wilderness

1. large areas with an indefinite extent _____
2. a scientist who studies birds _____
3. material (like thread) that are interconnected together _____
4. to search widely for food _____
5. in very good condition, not spoiled _____
6. more difficult or extreme and hard to tolerate _____
7. to reduce or divide something into two equal parts _____
8. to exactly identify or locate something _____
9. flowed slowly through something (e.g. through the ground) _____
10. rain, snow, sleet or hail falling to the ground _____

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11. chemicals used to kill insects that damage plants _____
12. the collective singing of birds when the sun rises _____
13. controlling or possessing something gradually without being noticed _____
14. in an essential or natural way _____
15. an area of land where animals and plants are left to grow naturally _____
16. large open areas of land, sea or sky _____
17. variations or changes in level, strength or number _____
18. admitted that something is true, often reluctantly _____
19. not in agreement with or happening at a different speed than something else _____
20. a large supply of something that could be used later on if needed _____

b. Complete the sentences with words from the previous activity in the correct form.

1. The river was so clean and _____ that people use the water for drinking.
2. Farmers use _____ to protect their crops, but they can also harm insects and birds.
3. After months of research, scientists were finally able to _____ the exact cause of the disease outbreak.
4. A number of soldiers were completely _____ the local culture, behaving in a way that upset the locals.
5. The newly released economic report showed significant _____ in global markets over the past year.
6. During her lecture, the professor stressed that some human traits are _____ linked to genetics rather than environment.
7. The morning air was filled with _____ of birds welcoming the first light of the day.

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8. Despite her obvious talent, Patsy _____ that she had made some serious mistakes in the dance competition.

9. We should protect the birds and their habitat by leaving them to grow naturally in the _____.

10. As temperatures rise, the dry season is becoming even _____, making it difficult for farmers to grow crops.

11. German archaeologists were amazed by the vast _____ of ancient ruins discovered beneath the African desert.

12. Several _____ of rainforests and grasslands were destroyed to construct the new railway project.

13. My parents always plant enough crops, so we have a(n) _____ of food for winter.

14. The land was _____, so there will be enough space for both the garden and the barn for the animals.

15. The real estate developers were _____ the sugarcane fields over the years until all the lands were finally turned into residential developments.

16. An experienced _____ can identify hundreds of species just by listening to their song.

17. She slowly inserted the new fibre into the _____ to finish off the basket she was making.

18. Villagers in remote regions of the country were forced to _____ for food after the earthquake.

19. After a hot and dry month, it finally rained, and the rainwater _____ fast into the hot and dry soil.

20. Unusually low _____ levels this year have led to severe droughts across the region.

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Populations have been falling for decades, even in tracts of forest undamaged by humans. Experts have spent two decades trying to understand what is going on

Tess McClure

30 January, 2025

1 Something was happening to the birds at Tiputini. The biodiversity research centre, buried deep in the Ecuadorian Amazon, has always been special. It is astonishingly remote. For scientists, it comes about as close as you can to observing rainforest wildlife in a world untouched by human industry.

2 Almost every year since his arrival in 2000, ecologist John G Blake had been there to count the birds. Rising before the sun, he would record the density and variety of the dawn chorus. He noted every species he saw. He and other researchers would set huge "mist" nets that caught flying birds in their weave, where they would be counted, untangled and freed.

3 For years, these counts captured birds' annual fluctuations; they had good and bad years. But by about 2012, Blake and his collaborators could see something was shifting. The birds were dying, not in masses at once, but generation by generation. By 2022, their numbers had almost halved. Blake did not need the graph to tell him something was wrong; when he rose to listen to the dawn chorus, he could hear that it was muted. Songs were missing. Some species simply vanished.

4 "A number of them I have not heard for quite a few years now," he says. "There are definitely some species that, for whatever reason, do not seem to be here any more."

5 In North America and Europe, scientists have long warned bird numbers are falling, but mostly that has been explained by their contact with humans. As cities and farms expand, forests around them become fragments, animal habitats shrink, pollution contaminates rivers, pesticides and fertilisers kill off insects. Tiputini, however, is one of the few patches of the planet not directly feeling those pressures: no nearby farms, no polluting factories, no encroaching loggers, no roads in. Yet, their birds were dying.

6 In Brazil, the Biological Dynamics of Forest Fragments Project (BDFFP) is an ecological study located deep in primary Amazon forest, unreachable by road. These regions hold some of the oldest living forests on the planet. "In the Amazon, we've had pockets of stable forests over millions of years," says ecologist Jared Wolfe, one of the project's research scientists.

7 But in 2020, when researchers there compared bird numbers with the 1980s, they found a number of species in deep decline. In Panama, scientists working in a stretch of intact forest had been gathering bird data since the mid-1970s. By 2020, 70 per cent of species had declined, most of them severely; 88 per cent had lost more than half their population. At some sites, scientists are beginning to observe "almost complete community collapse", says Wolfe. "This is occurring in pristine environments, which is really unsettling."

8 Blake and collaborator ornithologist Bette A Loiselle published their first paper documenting the declines in 2015, but could not definitively say what was causing them. They tested birds for disease and parasites, and found no clear links. They considered the possibility that an unknown toxin or pollutant had seeped in – but there was no evidence of that. "I suspect whatever is causing these declines is something much more widespread," The most likely answer, they concluded, was the climate crisis.

9 A decade later, their instincts are proving correct. This week, Wolfe and collaborators published new work directly linking rising temperatures to bird declines. They found that harsher dry seasons significantly reduced the survival of 83 per cent of species. A 1°C increase in dry season temperature would reduce the average survival of birds by 63 per cent.

10 Exactly how the heat is causing bird numbers to decline is tricky to pinpoint, Wolfe says, but "these birds are intrinsically linked to small, small changes in temperature and precipitation". One of the most immediate ways a heating planet hurts wildlife is by putting them out of step with their food sources: when fewer insects survive dry seasons, or leaves bloom and fruit ripens at different times, birds find themselves unable to forage and feed their young. Within a few generations, their numbers fall.

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11 The losses documented in these remote stations have implications far beyond birds. “The idea has always been that if you have huge expanses of forest, then that’s going to protect everything,” Blake says. “And, well, it does protect a lot of things. But apparently not everything.”

12 Most western conservation works by sectioning off wilderness, as national parks or reserves. These places are reservoirs of wildlife that we hope will be saved, even as people transform the land around them.

13 But realising what is happening is necessary to developing solutions, Wolfe says. “One thing I am becoming particularly tired of as a professional researcher, is writing these obituaries for birds,” he says. The research on pristine regions can also reveal potential solutions. Identifying why – and protecting them – is crucial.

14 For the scientists who are seeing birds disappear, there is grief in watching some of the most beautiful, ecologically rich places in the world fall into decline. “It is depressing,” Blake says. “When we first got here and started looking, we were just totally amazed at how many birds there were, and their diversity. We keep doing the work – but it’s harder to get excited about doing it because there’s so little.”

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3 Comprehension check

a. Choose the correct answer (a, b, c or d).

1. According to the text, what distinguishes the bird population decline at Tiputini from similar situations in North America and Europe?

   a. The rate of decline was much faster.

   b. The decline affected more species.

   c. The usual causes of decline were absent.

   d. The decline was more recent.

2. How did John G. Blake initially detect the change in bird populations?

   a. through satellite monitoring data

   b. by comparing photographs

   c. through statistical analysis

   d. through auditory observation of dawn choruses

3. The research at the Biological Dynamics of Forest Fragments Project revealed that:

   a. a 1°C rise in temperature had minimal impact.

   b. 83 per cent of species showed reduced survival in hotter dry seasons.

   c. birds were adapting well to temperature changes.

   d. only rare species were affected by climate change.

4. Which statement best reflects the researchers' findings about protected forests?

   a. They are completely ineffective at preserving wildlife.

   b. They still protect many species despite not being a complete solution.

   c. They only protect larger bird species.

   d. They need to be significantly expanded to be effective.

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5. The research at the Panama site indicated that:

   a. all bird species had completely disappeared.

   b. 70 per cent of species had declined, with 88 per cent losing over half their population.

   c. only 30 per cent of species showed any decline.

   d. the forest remained largely unaffected by changes.

6. The text suggests that climate change affects bird populations primarily by:

   a. disrupting the timing of food availability.

   b. increasing competition between species.

   c. directly causing heat-related deaths.

   d. causing immediate habitat destruction.

4 Key language

a. Find forms of the following words in the article.

imply	pollute	ripe	settle
diverse	collaborate	science	spread

b. Complete the sentences with the forms of the words the previous activity that you found in the article.

1. They know the risks and _____ of their decisions before they signed the contract.

2. The increase in the number of destructive natural disasters this year is very _____. I'm worried there will be more to come.

3. Mobile banking has led to _____ changes in how people manage their money.

4. _____ and environmentalists are working hard together to find ways to slow down the destruction of our natural resources.

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5. The fruit _____ 30-45 days after the plant's flower blooms.
6. Many _____ contributed to make the construction of the research facility possible.
7. The coral reefs' incredibly rich _____ makes it a crucial habitat for marine research.
8. The factory was fined for releasing harmful _____ into the nearby river system.

5 Discussion

a. Discuss these questions.

- Think about the birds in your local area. Have you noticed any changes in their presence or behaviour over the years? How does this connect to the changes described at Tiputini?
- Are there protected forest areas or sections of wilderness where you live? How are they similar to the wildlife reservoirs mentioned in the article? How do they help conserve animals, especially birds?
- The scientists in the article express emotional responses to their findings. How might these emotional responses affect scientific research? Do you think they might be beneficial, detrimental or both? How?

6 In your own words

a. In pairs or small groups, research online to find evidence of bird population decline in a different location in your area or country. Then:

- list possible causes (both human-related and climate-related).
- predict what evidence supports each potential cause.
- propose one realistic solution based on your findings.

b. Share the information you found with your class.