Adarsh Shikshan Mandal's
KONARK IDEAL COLLEGE OF SCIENCE & COMMERCE
(Affiliated to University of Mumbai) (Hindi Linguistic Minority College)
CAMPUS : Adarsh Vidya Nagari, At.Wasar (Bhal), Post-Dwarli, Via Kalyan Railway Station,
Haji Malang Road, Dist.Thane(MS) 421306. PH. : (0251) 3204294 / 3204394
E-mail : konarkideal@idealcollege.in
Web-www.idealcollege.in

Ideal Nature Club Presents

"AANGAN BOOKLET"

YEAR 2021-2022

VOL 1

INDEX

- **Ozone layer may be restored in decades, UN report says**

Human action to save the ozone layer has worked as hoped, and it may recover in just decades, the UN says.

An international agreement in 1987 to stop using the harmful chemicals that were damaging the layer has been successful, the major assessment says.

The ozone layer is a thin part of the Earth's atmosphere that absorbs most of the ultraviolet radiation from the Sun. When it is depleted, this radiation can reach the surface - causing potential harm to humans and other living things. Ultraviolet rays can damage DNA and cause sunburn, increasing the long-term risk of problems such as skin cancer. The ozone layer began depleting in the 1970s.Chlorofluorocarbons (CFCs), which were commonly found in spray cans, fridges, foam insulation and air conditioners, were blamed for eating away at the ozone layer. The

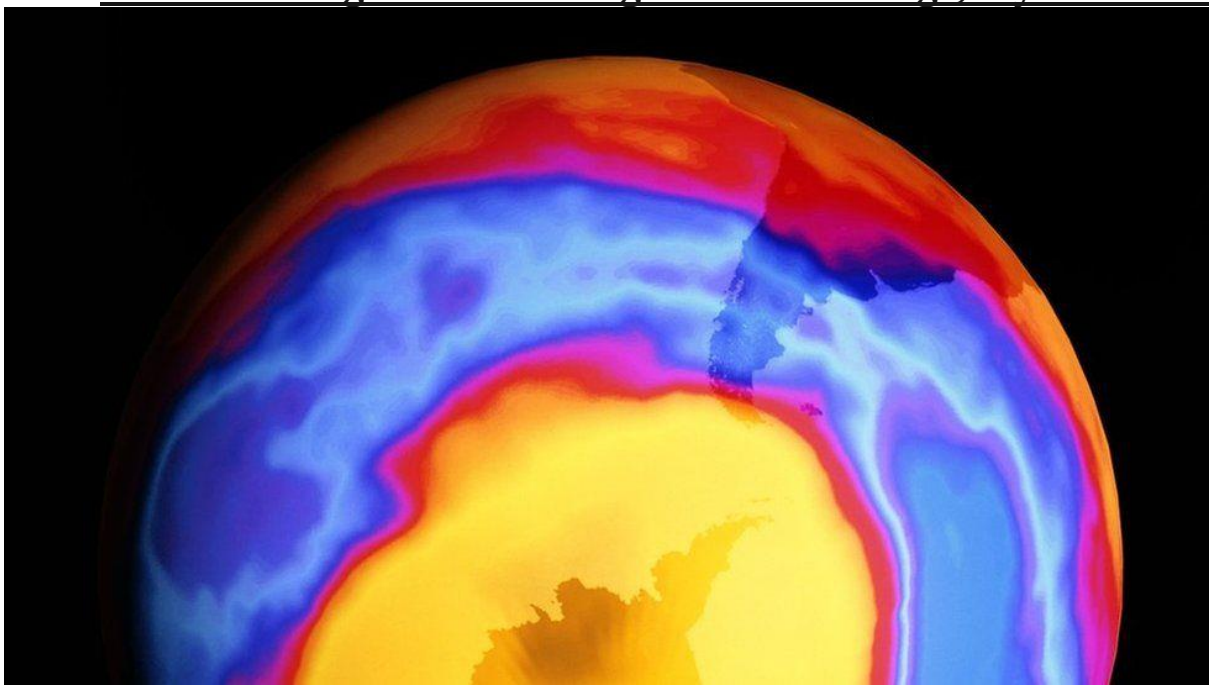
A gaping hole in the layer was discovered by scientists in 1985. Just two years later, the Montreal Protocol was signed - with 46 countries promising to phase out the harmful chemicals. The deal later became the first UN treaty to achieve universal ratification, and almost out. The Antarctic ozone hole continued expanding until 2000, after which its area and depth began improving slowly.

Now, a report co-produced by UN, US and EU agencies says the Montreal Protocol is working as hoped. It says that, if current policies are maintained, the ozone layer will be restored to 1980 values - before the ozone hole appeared - at different points in different places:

- 2066 over the Antarctic, where ozone depletion was the worst
- 2045 over the Arctic
- in about two decades' time everywhere else

While the depletion of ozone is harmful due to solar radiation, it is change. But saving the ozone layer has had a positive knock-on effect on global warming, the report suggests, because some of the harmful chemicals that were phased out are powerful greenhouse gases.
That phase-out will have prevented up to 1C of warming by the middle of the century - if compared to increasing their use by 3% per year, the scientists found.
While the report has been hailed as good news - and evidence that rapid, international action to avert environmental crises can work - it warns that continued progress on the ozone layer is not guaranteed.
For example, proposals to limit global warming by sending millions of tonnes of sulphur dioxide into the upper atmosphere - known as stratospheric aerosol injection - could drastically reverse the ozone layer's recovery.

- **CFC ban bought us time to fight climate change, say scientists**

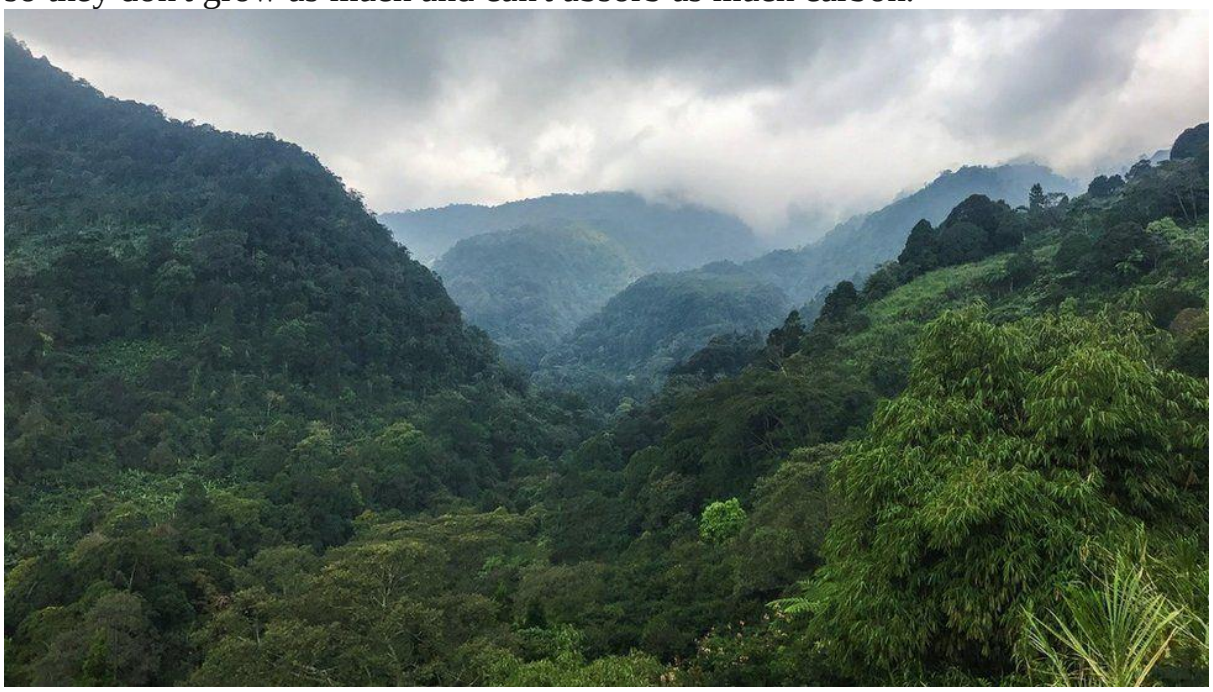


A worldwide ban on ozone-depleting chemicals in 1987 has averted a climate catastrophe today, scientists say. The Montreal Protocol on Substances that Deplete the Ozone Layer, banning chemicals such as chlorofluorocarbons, has now simulated our "world avoided". Without the treaty, Earth and its flora would have been exposed to far more of the Sun's ultraviolet (UV) radiation.
Former UN Secretary General Kofi Annan has called it "perhaps the single most successful international agreement".

Tortured plants

Continued and increased use of chlorofluorocarbons (CFCs) would have contributed to global air temperatures rising by an additional 2.5°C by the end of this century, the international team of scientists found.

Part of that would have been caused directly by CFCs, which are also potent greenhouse gases. But the damage they cause the ozone layer would also have released additional planet-heating carbon dioxide - currently locked up in vegetation - into the atmosphere. “In past experiments, people have exposed plants - basically tortured plants - with high levels of UV," lead researcher Dr Paul Young, of the Lancaster Environment Centre, said. “They get very stunted - so they don't grow as much and can't absorb as much carbon."

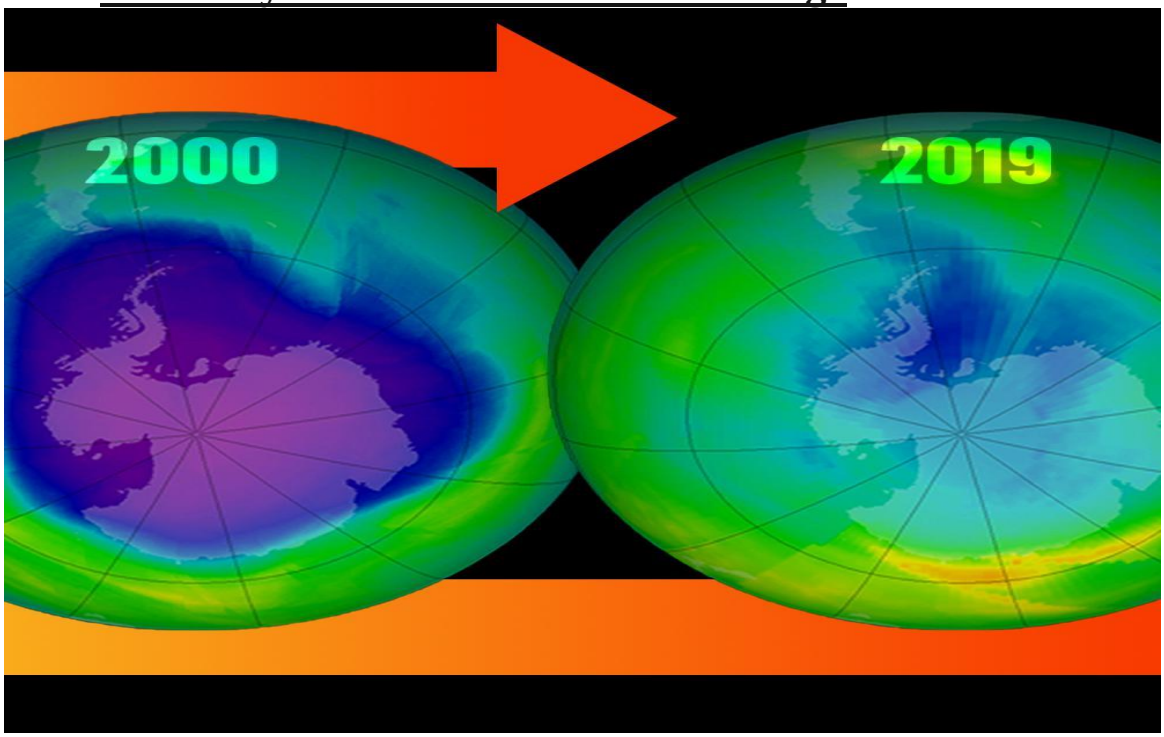


The scientists estimated there would be:

- 580 billion tonnes less carbon stored in forests, other vegetation and soils
- an extra 165-215 parts per million (40-50%) of carbon dioxide in the atmosphere

"What we see in our 'world-avoided experiment' is an additional 2.5C warming above any warming that we would get from greenhouse-gas increases," Dr Young said. But similar collective action to limit greenhouse-gas emissions was likely to be much more challenging. “The science was listened to and acted upon - we have not seen that to the same degree with climate change," he told programme. The experiment could appear to suggest hope for an "alternative future" that had avoided the worst consequences of climate change. “But I would be cautious of using it as a positive example for the climate negotiations," Dr Young said.
"It's not [directly] comparable - but it's nice to have something positive to hold on to and to see that the world can come together."

- **Ozone layer 'rescued' from CFC damage**



A steady decline in the levels of ozone-harming CFC chemicals in the atmosphere has resumed, scientists say. This follows a recent, dangerous pause in that downward trajectory, which could have slowed the healing of Earth's protective ozone layer. Atmospheric measurements published in 2018 pointed to illegal CFC production that was occurring in Eastern China.

Stopping that production appears to have set the ozone layer's healing process back on track. The ozone layer is a thin part of the Earth's atmosphere that absorbs most of the ultraviolet radiation from the Sun. When it is depleted, more of this UV radiation can reach the surface - causing potential harm to humans and other living things. Ultraviolet rays can damage DNA and cause sunburn, increasing the long-term risk of problems such as skin cancer.

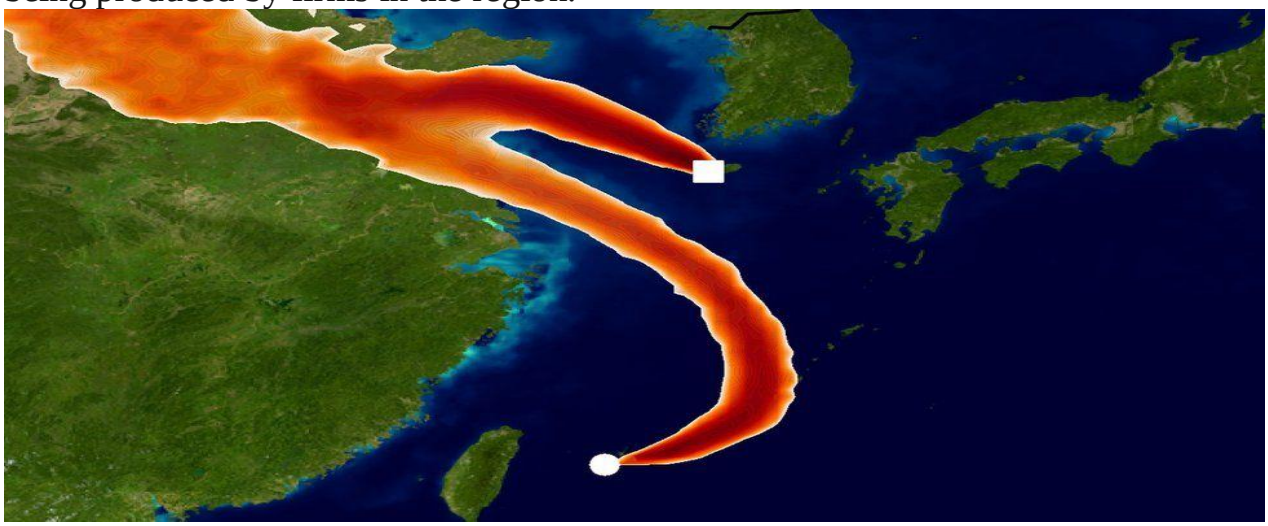
CFCs stand for chlorofluorocarbons. This family of chemicals has seen widespread use in refrigeration and as propellants in aerosol cans. Their role in destroying the ozone layer has been known since the 1980s.

Much of the CFC-11 gas produced in Eastern China has been used in home insulation. The conclusions of a chemistry-based detective story, based on work carried out over several years by an international team of researchers, are published in two papers in the journal Nature.

- Ozone: The Earth's protective shield is repairing
- Covid pandemic has little impact on rise in CO2
- Scientists examine the great 'human pause'

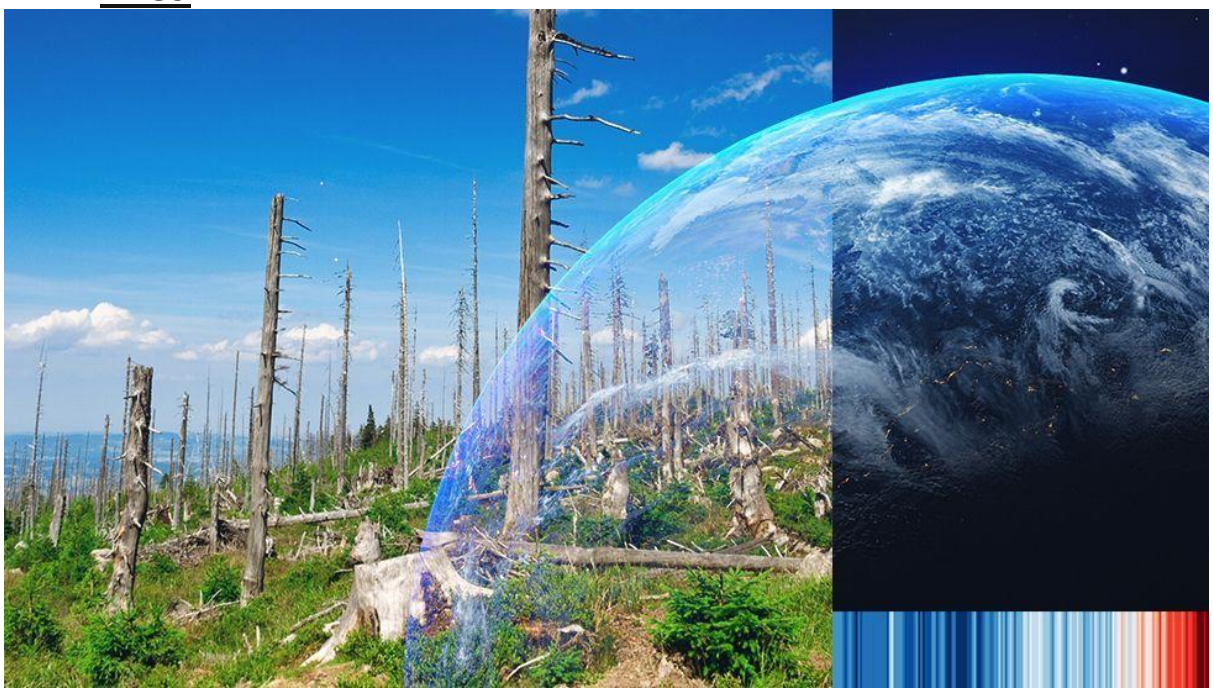
The first paper reveals that global emissions - of one particular type of CFC, trichlorofluoromethane (CFC-11) - decreased in 2019 at a rate that is consistent with the global ban on CFC production. That ban was put in place by the 1987

Montreal Protocol - an environmental treaty signed by almost every country that banned the production of these ozone-depleting chemicals from 2010.
"Things seemed to be going to plan," explained Dr Luke Western, an atmospheric scientist from the University of Bristol. But in 2018, a study revealed that "the concentration of CFCs in the atmosphere wasn't falling as quickly as we would expect". "That's where it all started - we wanted to know what was happening," said Dr Western. "The work I was involved in showed that this [extra CFC-11] was primarily coming from East China."
Media caption, the visualisation from 2016 tracked the behaviour of the ozone layer Dr Western and his colleagues used data from air monitoring stations in South Korea and Japan. Further detective work in China by the Environmental Investigation Agency (EIA) - and by environmental journalists - found that the chemical was being used in the majority of polyurethane insulation foam that was being produced by firms in the region.



Monitoring stations in Korea and Japan were key to detecting the mystery sources of CFC-11The scientists stressed that the scale of this illegal production may never be revealed in full. But this combination - of chemistry, investigative journalism and enforcement of the Montreal Protocol, the researchers say, has avoided significant delays to the healing of the ozone layer.
"First we noticed that the pollution spikes in the region were falling, so likely the nearby polluters were stopping, or at least reducing, their emissions.
"And then we saw that, in 2019, emissions had really fallen back to the levels we hadn't seen since before 2013, which is when we first saw this uptick."
Researchers say the recovery of the ozone layer is now "back on track".
"So later this century we should see recovery of the ozone layer back to levels that we saw in 1980," Dr Western added.

- **Climate change: The environmental disasters we've almost fixed**



There are no simple solutions to complex problems like climate change. But there have been times in the past when the world has come together to try to fix an environmental crisis.

How did we deal with acid rain, for example, or the hole in the ozone layer? And are there lessons for tackling the bigger issue of global warming?

1970, '80s and '90s: Acid rain

It's the 1980s, and fish are disappearing in rivers across Scandinavia. Trees in parts of the forests are stripped bare of leaves, and in North America some lakes are so devoid of life their waters turn an eerie translucent blue.

The cause: Clouds of sulphur dioxide from coal-burning power plants are travelling long distances in the air and falling back to Earth in the form of acidic rain.

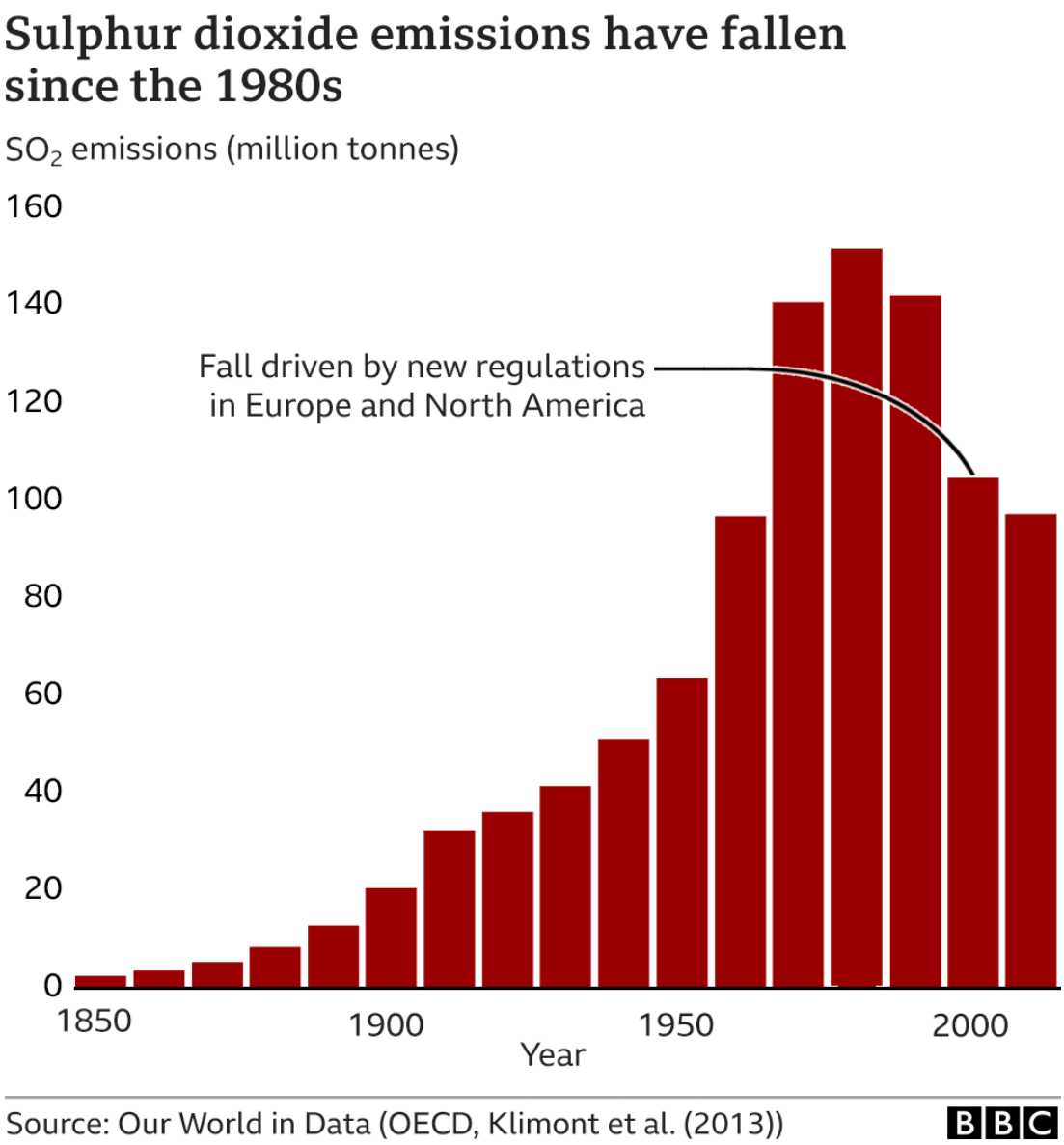
Sulphuric and nitric acid from the burning of fossil fuels fell as acid rain

"In the '80s, essentially the message was that this was the largest environmental problem of all time," says Peringe Grennfelt, a Swedish scientist who played a key role in highlighting the dangers of acid rain.

Headlines warning of the threats of acid rain were commonplace. For years there had been obfuscation, denial and diplomatic stand-offs, but once the science was settled beyond doubt, calls for action quickly gathered momentum. It led to international agreements curbing the pollutants from burning fossil fuels that acidify rain.

- BBC World Service - Witness History, Acid rain

  Amendments to the Clean Air Act in the US saw the development of a cap and trade system, giving companies an incentive to reduce emissions of sulphur and nitrogen, and trade any excess allowances. Each year, the cap was ratcheted down until emissions dropped dramatically.



So did it work? Acid rain is now largely a thing of the past in Europe and North America, although it remains a problem elsewhere, particularly in Asia.
However, Canadian scientist John Smol, a young researcher back in the 1980s, says in many ways acid rain was a "success story", showing that countries can come together and deal with an international problem. "If you don't price pollution, people will pollute. We learned that for sure," he says.
1980s: The ozone hole
In 1985, news of another looming environmental problem hit the headlines. Scientists from the British Antarctic Survey (BAS) alerted the world to a large and expanding hole in the ozone layer above the Antarctic. The damage was caused by the chlorofluorocarbons - greenhouse gases better known as CFCs - then used in aerosols and refrigerants.

"Suddenly it goes 'boom', and it drops really quickly," says BAS polar scientist Anna Jones, referring to the dramatic thinning of the band of gas that shields the planet from harmful UV rays.

- CFC ban reduced global warming, say scientists
- Ozone layer 'rescued' from CFC damage
- 'Ozone hole vigilance still required'

Ozone over the Antarctic had been diminishing since the 1970s, but news the hole now covered the entire Antarctic continent triggered worldwide alarm. In 1987, world leaders signed the landmark Montreal Protocol, hailed as one of the most successful environmental treaties of all time.
Ozone-depleting chemicals were phased out, with industry switching to "CFC-free" aerosol cans that appealed to green consumers. "It was a global problem, but industry, the scientists, the policymakers came together," says Dr Jones.

PREPARED BY:

1. YADAV VISHAL
2. MHATRE MAYURI
3. GUPTA SONI
4. KADAM DIPAK

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KONARK IDEAL COLLEGE OF SCIENCE & COMMERCE
(Affiliated to University of Mumbai) (Hindi Linguistic Minority College)
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YEAR 2021-2022

VOL 2

INDEX

- **Climate change: Huge toll of extreme weather disasters in 2021**

Weather events, linked to a changing climate, brought misery to millions around the world in 2021 according to a new report. The study, from the charity Christian Aid, identified 10 extreme events that each caused more than $1.5bn of damage. The biggest financial impacts were from Hurricane Ida which hit the US in August and flooding in Europe in July. In many poorer regions, floods and storms caused mass displacements of people and severe suffering.

- Four cheap ways to save energy at home this winter
- Which countries are still cutting down trees?
- Arctic heat record is like Mediterranean, says UN

Not every extreme weather event is caused by or linked to climate change, although scientists have become bolder in exploring the connections.

One leading researcher, Dr Friederike Otto, tweeted earlier this year that every heatwave happening in the world now is "made more likely and more intense" by human induced climate change. In relation to storms and hurricanes, there is growing evidence that climate change is also affecting these events.

In August, the Intergovernmental Panel on Climate Change (IPCC) report. In relation to hurricanes and tropical cyclones, the authors said they had "high confidence" that the evidence of human influence has strengthened." The proportion of intense tropical cyclones, average peak tropical cyclone wind speeds, and peak wind speeds of the most intense tropical cyclones will increase on the global scale with increasing global warming," the study said. Just a few weeks after that report came out, Hurricane Ida hit the US.

According to Christian Aid it was the most financially destructive weather event of the year. The slow-moving hurricane saw thousands of residents in Louisiana

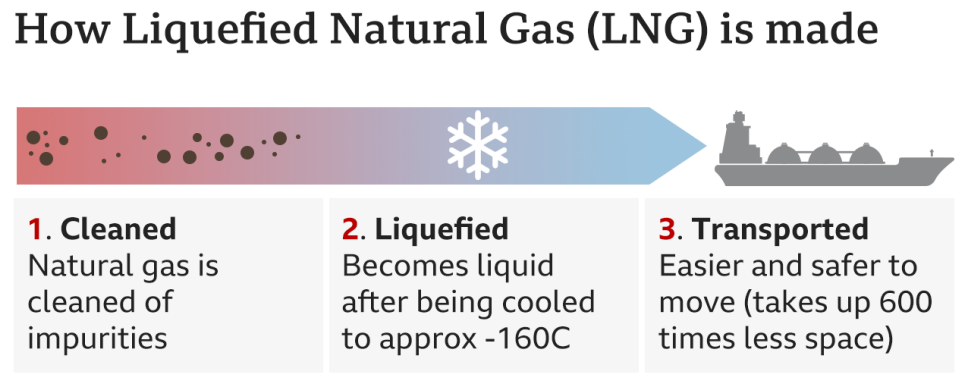
evacuated out of its path. That storm brought massive rainfall across a number of states and cities, with New York issuing a flash-flood emergency alert for the first time. Around 95 people died, with the economic losses estimated at $65bn.
The second most financial costly event was the July. The speed and intensity of the water overwhelmed defences and 240 people lost their lives. Reported damages were around $43bn.In the study, the majority of the weather events in the list occurred in developed countries. That's because it is more feasible to estimate financial losses from insurance claims and these are usually available in richer countries, where people can afford to insure their homes and businesses.
According to insurance company Aon, 2021 is likely to be the fourth time in five years that global natural catastrophes have cost more than $100bn.
The report also documents many other events where the financial impact is harder to ascertain, but where the impact on people is significant. Flooding in South Sudan displaced over 800,000 people while 200,000 had to move to escape Cyclone Tauktae which hit India, Sri Lanka and the Maldives in May. "That's a huge human impact," said report author Dr Kat Kramer from Christian Aid.
"Obviously, losing your home, your livelihoods, and everything, and not having the resources to rebuild that is incredibly tough. Whereas at least if you have insurance, you have some mechanism for building that back. "The report highlights the need for increased efforts on curbing emissions of carbon dioxide to reduce future weather related impacts. It is also calling on global climate diplomats to put their money where their mouth is and help poorer countries that suffer huge economic losses. In the COP26 global climate talks in Glasgow, this issue of finance for loss and damage caused by climate-related events saw major disagreement between countries. Developing nations wanted cash - the richer ones said we need more talks on the question.

- **Climate change: Hidden emissions in liquid gas imports threaten targets**

Europe's growing reliance on liquefied natural gas (LNG) is coming at a high environmental cost, new research shows. LNG imports have soared in the wake of the Ukraine war which has limited piped supplies from Russia.
Analysis, seen by the BBC, shows that the production and transport of LNG causes up to ten times the carbon emissions compared to pipeline gas.
There are worries that the extra carbon could hamper efforts to rein in warming.

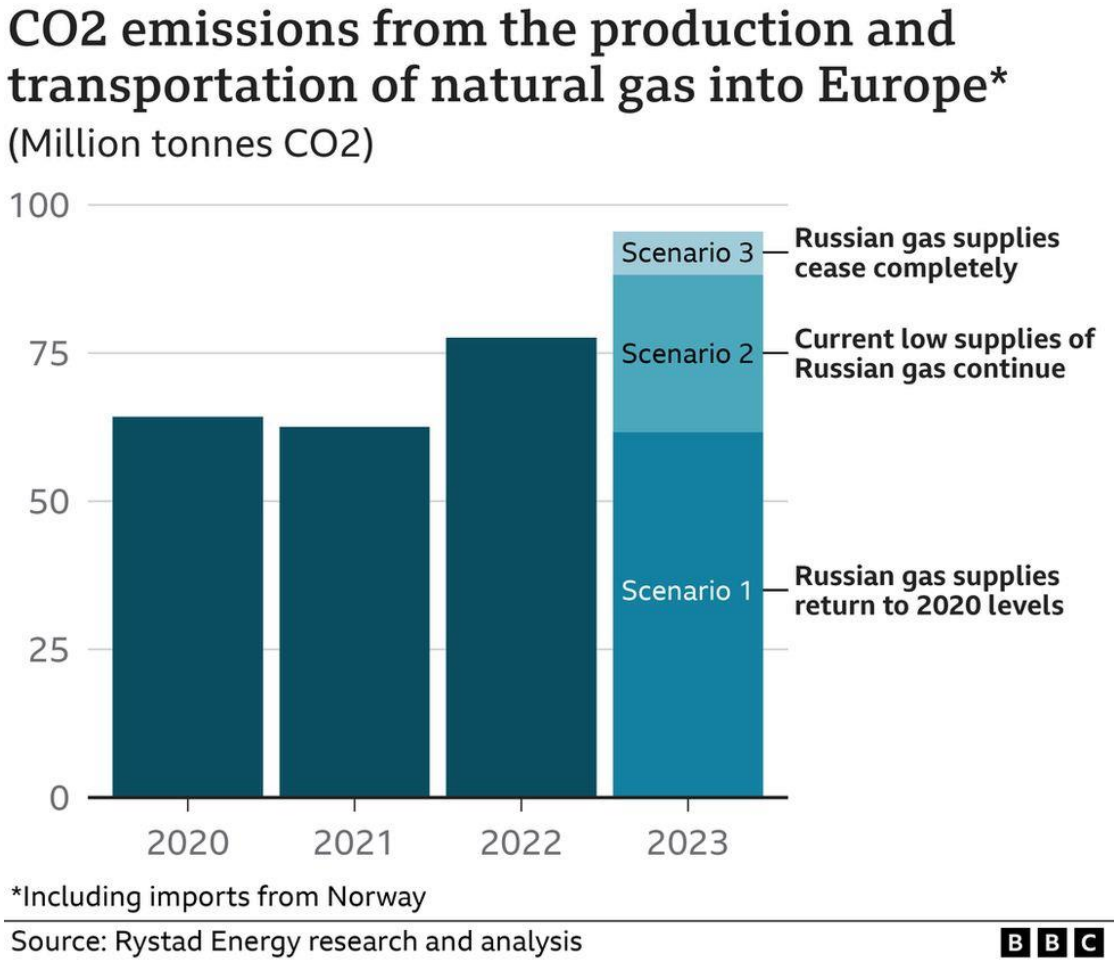
- UN warns key climate threshold slipping from sight
- The woman cleaning up a land soaked in oil
- Prioritise climate or face catastrophe - UN chief

World leaders will meet in Egypt next week for the COP27 climate conference, amid concern that the war in Ukraine has distracted efforts to cut carbon.
In the UK and Europe, worries over energy supplies have seen an unprecedented uptick in imports of LNG, a liquefied version of natural gas.
Data shows that LNG cargo import volumes were up 65% in the first nine months of this year compared to 2021.



But according to new analysis by Norwegian research firm Rystad Energy, shared with the BBC, the making and shipping of liquid natural gas is extremely energy intensive. To make it, fossil gas is cooled in giant fridges to -160C.

As the gas liquefies, it shrinks, and becomes six hundred times smaller, making it much easier to transport. While the emissions from burning the gas are the same whether it's piped or in liquid form, the extra energy involved in making and transporting the liquid is significant. “For piped gas from Norway, we see around 7kg of CO2 per barrel, but for LNG imports into Europe, we estimate the average is over 70, so around 10 times lower for piped gas versus LNG," said Patrick King from Rystad.



"By the end of next year, if Russia fully turns off the gas taps, and all that additional gas needs to come from LNG sources, we will see an additional 35 million tonnes of imported upstream CO2 emissions compared to 2021."
That extra CO2 is the equivalent of adding around 16 million cars to the UK's roads for two years. For some observers, this rush for LNG is a triumph of short-term thinking. “The real opportunity, out of a bad situation is to put incentives in place to reduce our gas usage," said Dr Paul Balcombe, from Queen Mary University of London. He wasn't involved in this new study, but has researched LNG emissions previously. “We need to increase energy efficiency and our renewables deployment. Rather than just looking at the really, really short-term replacement, which is LNG, we need to look at the slightly longer term, which will have way better cost implications, financial and environmental."
Environmental campaigners are worried that the current embrace of extra LNG may not be a one off. While none are currently planned for the UK, there are plans for the installation of around 20 new LNG terminals on the European continent.

Germany is building pipelines to connect to a number of new LNG terminals
"It's really scary to be honest," said Eilidh Robb, who is with Friends of the Earth Europe. “The challenge is that to make these terminals economically viable, countries have to agree to very long contracts to bring in the gas and the terminals themselves can last up to 40 years, which means a very long lock-in effect for these fossil fuels that we are trying to get out of."
One other problem with these imports is their origin. According to Rystad, around 16% of the liquid is coming from Russia. In buying this gas from Russia, the UK and Europe are not just helping to fund the invasion of Ukraine, but they're also making it more difficult to win the war against climate change.

- **COP27: Sharp rise in fossil fuel industry delegates at climate summit**

The number of delegates with links to fossil fuels at the UN climate summit has jumped 25% from the last meeting, analysis shared with the BBC shows.
Campaign group Global Witness found more than 600 people at the talks in Egypt are linked to fossil fuels.
That's more than the combined delegations from the 10 most climate-impacted countries.
Around 35,000 people are expected to attend the COP27 summit in the Red Sea resort of Sharm el-Sheikh.
These conferences have always attracted significant numbers from the coal, oil and gas industries, who are keen to influence the shape of the debate.

- Time to pay climate bill, insist nations at risk
- Can India really adopt a climate-friendly lifestyle?
- How many private jets were at COP27?

At last year's summit in Glasgow, a similar analysis of official attendance lists found 503 delegates connected to fossil fuels.
This year that figure has gone up to 636."COP27 looks like a fossil fuel industry trade show," said Rachel Rose Jackson, from Corporate Accountability, one of a group of campaigners who released the data along with the Corporate Europe Observatory.

"We're on a carousel of madness here rather than climate action. The fossil fuel industry, their agenda, it's deadly. Their motivation is profit and greed. They're not serious about climate action. They never have been and they never will."
The researchers counted the number of individuals registered who were either directly affiliated with fossil fuel companies or attending as members of national delegations that act on behalf of the fossil fuel industry. The data shows that this year, there are more fossil fuel lobbyists than total delegates from the ten countries most impacted by climate change, including Pakistan, Bangladesh and Mozambique. The biggest single delegation at COP27 is from the United Arab Emirates, who will host COP28 next year. They have 1,070 people on the ground here, up from just 170 last years. The analysis found that 70 of that delegation were connected to fossil fuel extraction. Russia's delegation has 33 lobbyists for oil and gas in their delegation of 150.

- **African lobbyists push to exploit reserves**

"If you are not at the table, you'll be on the menu". That's the view of Dr Omar Farouk Ibrahim, the head of the African Petroleum Producers Organisation, speaking to the BBC at COP27. He said he was here to try and influence negotiators to support the development of oil and gas in Africa. He said there were 600m people across the continent who don't have access to electricity.
He rejects the idea that Africa should forgo its large reserves of oil and gas in exchange for renewable technology and funding from the richer nations.
"We've been failed in the past. And there is no guarantee that they wouldn't fail us again," he told BBC News.
But rather than being a powerful influence, Dr Ibrahim says his group and others struggle to make an impact at the highest levels.

"I guarantee you, even if we are to pay to come here, they will not allow us to come because they don't want the other voice heard."

There is some evidence that the arguments being made by those in favour of oil and gas are having an impact.
There has been a "dash for gas" recently among some African nations, keen to exploit their resources at a time of increased demand in Europe and elsewhere.
Senegal is one of the African countries that wants to exploit its recently discovered reserves of gas.
"What is important for us is how can we use these resources to develop our country and reinforce our economy and to export it to emerging and developed countries," said Idy Niang, from the Senegal delegation.
But others attending were clear that the climate situation was now so serious, there should be no room at any COP for those backing fossil fuels.
"If you want to address malaria, you don't invite the mosquitoes," said Phillip Jakpor, who's from Nigeria and works with Public Participation Africa.
"As long as we have the fossil fuel lobby and machinery in full swing, we will not make progress and we have not made progress," he told BBC News.

PREPARED BY:

1. CHAUDHARY PAYAL
2. GAIKWAD SANDEEP
3. JADHAV RUCHITA

Adarsh Shikshan Mandal's
KONARK IDEAL COLLEGE OF SCIENCE & COMMERCE
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VOL 3

INDEX

- **COP27: Fears of compromise on key 1.5C global temperature issue**

A key target to stop climate change raising global temperatures is under threat at a UN summit.

Climate change talks have been trying to limit the average rise in temperatures to 1.5C. But at talks in the Egyptian resort of Sharm el-Sheik, there are concerns that target will slip. Senior figures here in Egypt are worried about backsliding on efforts to keep the 1.5C goal. There is a sense the Egyptian presidency is struggling to find common ground between rich and poor, and some delegates fear the focus on 1.5C may be softened to find agreement.

The limit is important because climate scientists say temperature rises must slow down if we want to avoid the worst consequences of climate change. They say global warming needs to be kept to 1.5C by 2100.

- Why is the climate target of 1.5C so important?
- Biden issues climate rallying cry to world leaders
- Fossil fuel delegates spike at climate summit

Ministers and their negotiators face an intensive week of talks in Sharm El-Sheikh as pressure grows to conclude this meeting with a strong political message.

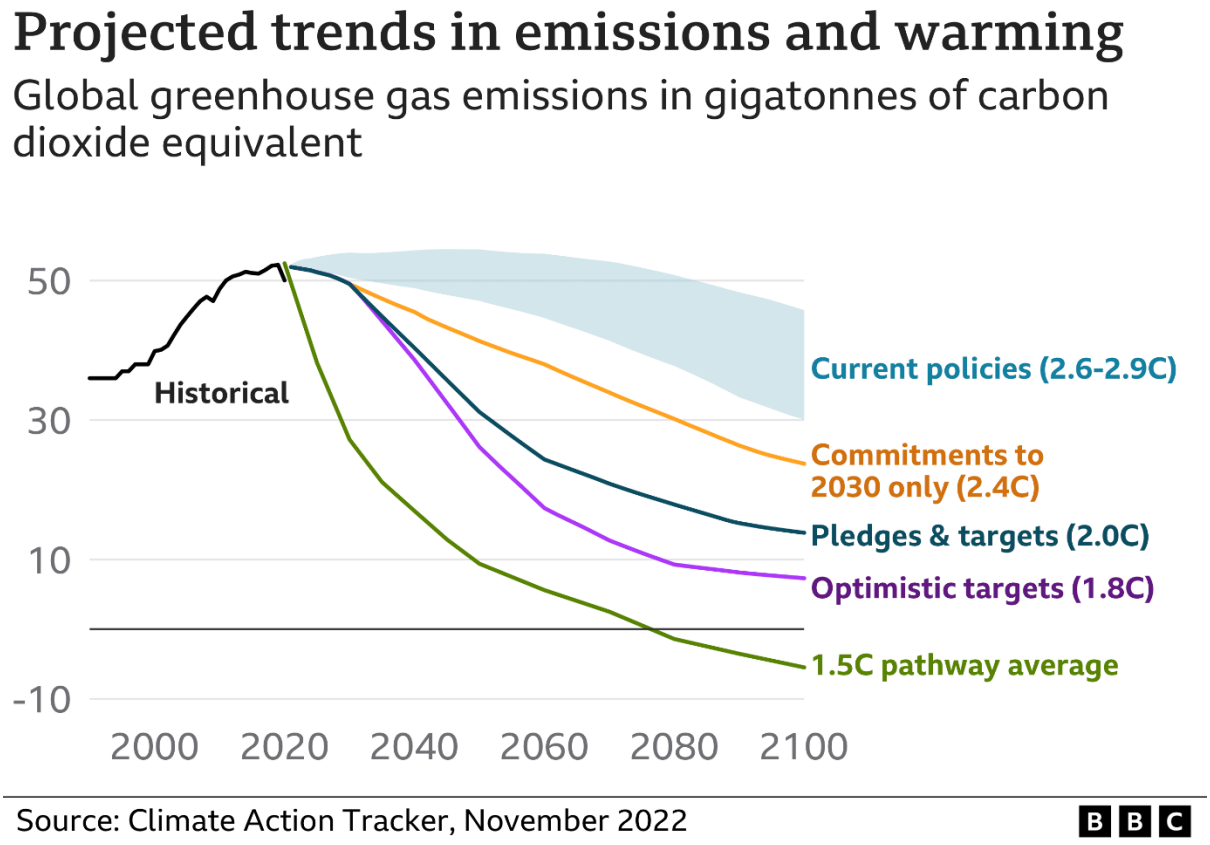
According to the UN's climate chief, not enough progress has been made so far.

"My observations are that there are too many unresolved issues," Simon Stiell said to the meeting over the weekend.

"If we create a log-jam in the process, we will not deliver an outcome that is deserving of the crisis. “An analysis on the state of the negotiations by the Carbon Brief website shows widespread disagreement between parties.

One of the big concerns though is that as the organisers struggle to find a way forward, a clear statement on the commitment to 1.5C figure might be fudged.

In last year's Glasgow climate pact, all countries agreed to "keep 1.5C alive" by undertaking "rapid, deep and sustained" cuts in greenhouse gases.
But at a G20 meeting in Indonesia in August, ministers were unable to agree a communique on climate change, as China and India were reported to have questioned the scientific feasibility of the 1.5C threshold.
Such are the differences between countries here, there are fears that the final document being drafted by the Egyptians may dilute or exclude the 1.5C goal.
"I have been worried that there seems to some kind of attempt to say maybe 1.5C is not achievable anymore," the former President of Ireland, Mary Robinson, told the Irish Times on the side-lines of this summit. “That is not acceptable," she said.
Mrs Robinson, who is chair of the Elders group of former political leaders, has released a statement with around 200 of the world's largest businesses and civil society groups urging governments to align their national targets with 1.5C.



- **Climate change: Five key takeaways from COP27**

1: The biggest win on climate since Paris...?

A new funding arrangement on loss and damage - a pooled fund for countries most affected by climate change - has been hailed as a "historic moment". It can be seen as the most important climate advance since the Paris Agreement at COP 2015.For decades the victims of a changing climate were the ghosts the richer world just couldn't see. Money has long been available to cut carbon or help countries adapt to rising temperatures - but there was nothing for those who had lost everything. “For someone who has seen his home disappear in the floods in Pakistan, a solar panel or a sea wall isn't much use," explained Harjeet Singh from the Climate Action Network. The COP27 decision on loss and damage won't fix that immediately. The fund comes with many unknowns. What will be the criteria to trigger a pay out? Where will the money come from, and will it be enough?
Compare the EU's €60m contribution against the $30bn costs that Pakistan faces.

- Climate costs deal struck but no fossil fuel progress
- Will richer nations pay for climate change?

But establishing the loss and damage fund is about more than money or compensation or reparations - it is really about solidarity and rebuilding trust.
Despite the dramatic impacts the rising temperatures will inflict on the world, this fund signals that no one will be left behind.
It is a concrete demonstration that we really are all in this together.

2: ...Or the biggest loss on climate change since Paris?

For many countries, the last hours of the negotiation represent a real step backwards in the fight against rising temperatures. While the loss and damage

text represented a big win, the overall cover decision is being seen as a missed opportunity in the fight against climate change.
The man who ran the COP26 negotiations in Glasgow put it bluntly.
"Emissions peaking before 2025, as the science tells us is necessary. Not in this text," said Alok Sharma. “Clear follow-through on the phase down of coal. Not in this text. “As well as all these limitations there was also a sharp U-turn on the language around fossil fuels. The text now includes a reference to "low emission and renewable energy”. This is being seen as a significant loophole that could allow for the development of further gas resources, as gas produces less emissions than coal.

3: The spirit of 1.5C is strong, even if the text is weak
There's a fifty-fifty chance over the next five years that we'll go over this important marker of temperature increases, compared to pre-industrial times. We're likely to pass it permanently by 2031.But at COP27, the EU and other developed countries were willing to die on the hill of strengthening the promise to keep 1.5C alive. Their efforts were ultimately in vain as the cover text failed to include a reference to the phasing *out* of all fossil fuels, seen as a necessary advance on last year's decision to phase *down* the use of coal. “I wish we got fossil fuel phase out," said Kathy Jetnil-Kijiner, the Climate Envoy of the Marshall Islands, who along with other island states fear annihilation if temperatures rise above 1.5C."The current text is not enough. But we've shown with the loss and damage fund that we can do the impossible. So we know we can come back next year and get rid of fossil fuels once and for all. “There’s a deep sense of solidarity by the richer nations with the island states on this issue of keeping below 1.5C
Faith in the threshold has also become a key differential between the US, EU and other richer countries and China, which is markedly less concerned about the goal. While the world will undoubtedly be a better place the closer we stay to the 1.5C guiderail, belief in the ideal is also a political and economic bridge to the developing world. So even as the science and the COP process falter on 1.5C, expect the diplomatic attachment to grow stronger in the coming years.

4: The fossil fuel industry has finally come out of the shadows
One key takeaway from COP27 was the presence and power of fossil fuel - be they delegates or countries. Attendees connected to the oil and gas industry were everywhere. Some 636 were part of country delegations and trade teams.
The crammed pavilions felt at times like a fossil fuel trade fair. This influence was clearly reflected in the final text. Demands from India and others for all fossil fuels to be phased down didn't survive, despite the backing of the EU and many other countries rich and poor. Many African countries were also keen to use the COP as a platform to promote new oil and gas initiatives in their countries.

"The fact that the outcome only talks about 'phase-down of unabated coal power' is a disaster for Africa and for the climate," said Babawale Obayanju, from Friends of the Earth Africa. “We don't need more gas extraction in Africa, devastating our communities for the benefit of rich countries and corporations. What we needed from COP27 was agreement to a rapid, equitable phase out of all fossil fuels. “That battle will resume at COP28 in Dubai.

5: Democracy really matters for the climate

The undoubted darling of the COP was Brazil's president-elect Luiz Ignacio Lula Da Silva.Just as he did in Copenhagen in 2009, Lula electrified the conference with his promise of zero deforestation by 2030.More than his commitment to the Amazon, Lula restored people's faith in the power of the ballot box to solve the climate problem. So too, in his un-showy way did President Biden. The retention of the Senate by the Democrats most likely ensures that his Inflation Reduction Act will not be overturned or watered down. At a stroke it puts the United States' carbon cutting goal for 2030 within reach. The affirmation that democracy is an effective weapon against climate change was also demonstrated in the actions of the host country. With security and surveillance everywhere, the conference took place in an atmosphere best described as barely restrained intolerance.

As well as the ongoing troubles over human rights, the Egyptian hosts paid scant attention to basic functional needs of a conference such as food, drink and decent Wi-Fi. When push came to shove, there was a distinct lack of empathy from negotiators for the presidency. This really mattered in the final showdown.

COP27 could have been a major advance against climate change. That it ultimately didn't hit that mark is at least partly down to the hosts.

- **Climate change: Four things you can do about your carbon footprint**

1. Insulate your home

From installing a heat pump to turning down the heating, there is planet. “Switching from a gas or oil-powered heating system to an electric heat pump makes a considerable difference," according to Dr Neil Jennings, an academic from Imperial College London.

"On a day-to-day basis, switching off lights and appliances when not in use can help us to save money while reducing our impact on climate change."

2. Cut out food waste and cut down on red meat

Livestock creates 14% of all greenhouse gases globally, with cattle being by far the largest contributor. The simplest and most effective way to limit your impact is to reduce meat and dairy in your diet, beef. Good news for vegans, obviously - but there are other considerations to take into account.

3. Drive less, fly less

Transport is responsible for almost a quarter of carbon dioxide global emissions. Living car-free might be "the most impactful thing we can do to reduce our transport emissions," according to Dr Jennings. However, ditching the car is not possible for everyone, particularly if you live in an area without good public transport or are disabled. Small steps still have an impact, like walking and cycling to the local shops or sharing car journeys with friends or neighbours. Electric cars are becoming more widespread, but they are still prohibitively expensive for some people and charging infrastructure is limited in places.

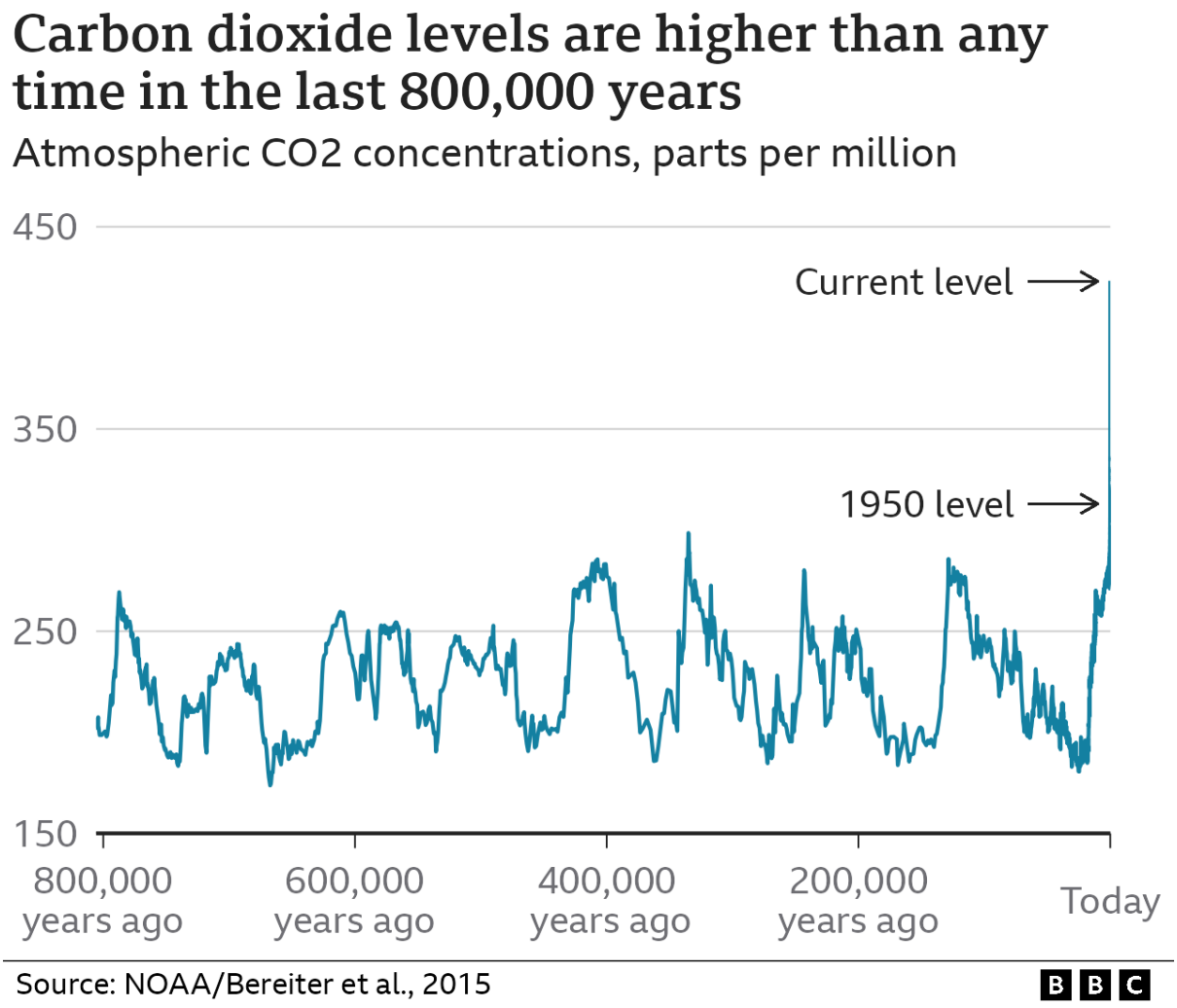
4. Think before you buy

It takes 3,781 litres of water to make one pair of jeans, according to the UN's Environment Programme, taking into account cotton production, manufacture, transport and washing. You can limit your impact by repairing minor faults in clothing rather than replacing them, donating rather than throwing away and choosing higher-quality items that you think will last longer. An increasing number of companies are offering clothes to rent, which helps reduce waste in the fashion industry. You could also try buying second-hand. Choosing the right household appliances can also have a positive effect on your carbon footprint. Dr Jennings suggests making sure you are buying the most energy-efficient products, such as washing machines, when they need replacing.

- **What is climate change? A really simple guide**

Global temperatures are rising as a result of human activity.
People around the world are already experiencing the consequences, from more intense heatwaves to rising sea levels. Things are likely to worsen in the coming decades, but scientists argue that urgent action can still avoid the most dangerous effects of climate change.

What is climate change?
Climate is the average weather in a place over many years. Climate change is a shift in those average conditions. The climate has fluctuated naturally throughout the world's history. But scientists say that there is no doubt that the particularly rapid climate change seen over the past century is caused by humans.
In particular, they say it is due to the widespread use of fossil fuels - coal, oil and gas - in homes, factories and transport. When fossil fuels burn, they release greenhouse gases - mostly carbon dioxide (CO2). These gases trap the Sun's heat in the atmosphere, causing the planet's temperature to rise. Since the start of the Industrial Revolution - when humans started burning large amounts of these fuels - the amount of CO2 in the atmosphere has risen by over 50%, and is still growing. As a result of the increase in CO2 and other greenhouse gases like methane, the world is now about 1.1C warmer than it was in the late 19th century.



What are the effects of climate change so far?

A global average temperature increase of 1.1C might not sound much, but it has already had a huge effect on the environment. Impacts so far include:

- more frequent and intense extreme weather, such as heatwaves, drought and floods
- rapid melting of glaciers and ice sheets, contributing to sea level rise
- huge declines in Arctic sea ice
- ocean warming and marine heatwaves.

People's lives are already changing as a result. For example, the ongoing East African drought has put more than 20 million people at risk of severe hunger. The 2022 European heatwaves led to an abnormal increase in deaths.

Extreme weather events have caused trillions of dollars of economic damage in recent decades, but the death toll has actually fallen as early warning systems have improved, according to the World Meteorological Organisation.

How will future climate change affect the world?

Scientists say limiting temperature rise to 1.5C is crucial to avoid the most dangerous impacts of climate change - although these increase with every extra

increment of warming. The 1.5C warming limit was partly designed to avoid crossing so-called "points". These are thresholds beyond which changes could accelerate and become irreversible in different parts of the Earth's climate system, such as the collapse of the Greenland Ice Sheet. But it's not clear precisely where these thresholds sit. Some may have already been crossed; some may be further away than first thought.

PREPARED BY:

1. DHOBALE SIMRAN
2. CHAUHAN VINOD
3. GUPTA POOJA
4. KATKAR SAKSHI

Adarsh Shikshan Mandal's
KONARK IDEAL COLLEGE OF SCIENCE & COMMERCE
(Affiliated to University of Mumbai) (Hindi Linguistic Minority College)
IDEAL COLLEGE
CAMPUS : Adarsh Vidya Nagari, At.Wasar (Bhal), Post-Dwarli, Via Kalyan Railway Station,
Haji Malang Road, Dist.Thane(MS) 421306. PH. : (0251) 3204294 / 3204394
E-mail : konarkideal@idealcollege.in
Web-www.idealcollege.in

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INDEX

- **Climate change: Record tree losses in 2021 in northern regions**

Tree cover losses in northern regions of the world were the highest on record in 2021, according to new analysis from Global Forest Watch.
Figures for these boreal forests were up 30% on 2020, with wildfires causing massive losses in Russia. Elsewhere, around ten football pitches per minute of tropical primary forest were lost across the year. Brazil, once again, led the way with a significant uptick in tree loss associated with agricultural expansion.

- Lab-grown meat 'good for planet and health'
- Climate change and farming driving insect decline
- Attenborough named 'Champion of the Earth' by UN

This new data records the losses of tree cover in 2021, and is not the overall net picture when new plantings are taken into account.
Much of the focus for researchers is on the world's tropical regions because this is where more than 96% of deforestation takes place.
When it comes to tropical primary forests, Brazil and the Democratic Republic of Congo top the table as they have for many years' now but one of the big concerns in the new figures is the loss of boreal forests which are found in northern parts of Russia, Canada and Alaska.

While the cutting or burning of trees in these regions rarely results in permanent deforestation, the number of trees destroyed in 2021 was up 30% on 2020, to the highest level yet recorded, Climate change is seen as a key driver of tree loss in these areas, with hotter drier conditions leading to more wildfires and greater damage from insects. Russia saw its worst fire season since records began in 2001, losing more than 6.5 million hectares. “It’s hugely worrying," said Rod Taylor from the World Resources Institute, part of the team behind the new analysis.

"Global warming is generally happening faster as you get closer to the poles, so it's like having a changing climate and an ecosystem that's not coping, so we're seeing fires that burn more frequently more intensively and more broadly than they ever would under normal conditions. “Outside of northern regions, tree losses continued at very high levels in tropical areas - in terms of carbon, the destruction of these trees was equal to the annual fossil fuel emissions of India.

Over 40% of this primary forest loss occurred in Brazil, with the non-fire related destruction increasing by 9% overall - researchers say that is normally associated with the expansion of agriculture. In some key states in the western Amazon region, these losses were as high as 25%.

- **COP15: Five key takeaways from the UN biodiversity summit**

The world's nations have reached a historic agreement to protect the world's biodiversity. After two weeks of negotiations, what is officially known as the Kunming-Montreal Global biodiversity framework was passed early on Monday. Here are five key takeaways and memorable moments from the conference.

1. 30% and rising

The 30 x 30 pledge is the central pillar to this agreement - countries agreeing to protecting 30% of land and water by 2030.

Not securing agreement on this key ambition would have been a deal breaker for the whole agreement. Even before the meeting started in Montreal more than 100 countries had signed up. So during the talks when there were suggestions the pledge might be watered down, the nation's championing 30 x 30 were quick to push back. "We cannot afford to leave Montreal without banking this commitment," said UK environment minister Zac Goldsmith during a press conference. And protecting 30% of lands and seas for nature, could just be the start. "Extinction doesn't negotiate — the science is clear that we need to protect at least half the Earth by 2030," says Oscar Soria, campaign director for the non-profit, Avaaz "This text is a step forward from where we are, but nature needs a giant leap."

2. A match for Paris

"It is truly a moment that will mark history as Paris did for climate," Canada's environment minister Steven Guilbeault told reporters on Monday. In 2015 the world's nations agreed for the first time on a common goal to cut greenhouse gas emissions. It was called the Paris Climate Agreement after the city it was signed in, and was considered a landmark moment for tackling climate change.

Some, such as the activist-turned-politician Mr Guilbeault, now consider this new agreement in Montreal to be equally landmark moment for protecting nature.
But not everyone is convinced. Lawyers for the environmental law charity, Client Earth, said the final agreement was "noteworthy" but stopped short of a Paris moment. And Dr Abigail Entwistle of Fauna & Flora international evoked a more pedestrian image, she said: "I don't believe we've had a Paris moment, but now more than ever we're circling the Paris ring road. “We need to give the framework a chance, hoping it is enough to pull everyone - governments, businesses and citizens - in the same direction to halt and reverse biodiversity loss by 2030," she added.

3. China takes control
China presided over the meeting alongside host country, Canada, which stepped in at the last minute due to Covid restrictions in China. The conference president, Huang Runqiu, caused some controversy when sealing the final deal, by bringing down the official gavel despite the Democratic Republic of Congo (DRC) refusing to support it.The DRC protested and called the final deal illegal and against the rules of the negotiations, though the UN dismissed the complaint.
Despite this unusual turn of events, China won recognition for its role during the meeting.

- **COP15: Nations reach 'historic' deal to protect nature**

Nations have agreed to protect a third of the planet for nature by 2030 in a landmark deal aimed at safeguarding biodiversity. There will also be targets for protecting vital ecosystems such as rainforests and wetlands and the rights of indigenous peoples. The agreement at the COP15 UN biodiversity summit in

Montreal, Canada, came early on Monday morning. The summit had been moved from China and postponed due to Covid.China, which was in charge of the meeting, brought down the gavel on the deal despite a last minute objection from the Democratic Republic of Congo.UN Secretary General Antonio Guterres hailed the deal and said: "We are finally starting to forge a peace pact with nature."

The main points include:

- Maintaining, enhancing and restoring ecosystems, including halting species extinction and maintaining genetic diversity
- "Sustainable use" of biodiversity - essentially ensuring that species and habitats can provide the services they provide for humanity, such as food and clean water
- Ensuring that the benefits of resources from nature, like medicines that come from plants, are shared fairly and equally and that indigenous peoples' rights are protected
- Paying for and putting resources into biodiversity: Ensuring that money and conservation efforts get to where they are needed.

"It is truly a moment that will mark history as Paris did for climate," Canada's Minister for the Environment and Climate Change Steven Guilbeault told reporters. The Paris climate deal saw nations agreeing in 2015 to keep world temperature rise below 2C. The summit in Montreal had been regarded as a "last chance" to put nature on a path to recovery. Throughout the talks there was division over the strength of ambition and how to finance the plans.
One big sticking point was over how to fund conservation efforts in the parts of the globe that harbour some of the world's most outstanding biodiversity.
Biodiversity refers to all the Earth's living things and the way they are connected in a complex web of life that sustains the planet.

- Five key takeaways from the UN biodiversity summit
- COP15: Call for biodiversity 'peace pact with nature'
- Can we set aside a third of our planet for nature?

Biodiversity includes all living things, big and small, and the way they fit together in a web of life new text of the agreement was released by China on Sunday.
Delegates convened a full session of the summit early on Monday morning after hours of delays, but then agreed to the text quickly. The president of COP 15, Minister Huang Runqui, declared the deal approved despite objections from the Democratic Republic of Congo, which said it couldn't back the deal.
Georgina Chandler, senior international policy advisor for the Royal Society for the Protection of Birds said people and nature should both be better off thanks to the deal struck in Montreal. “Now it's done, governments, companies and communities need to figure out how they'll help make these commitments a reality. “Sue Lieberman of the Wildlife Conservation Society said the agreement was a compromise, and although it had several good and hard-fought elements, it could have gone further "to truly transform our relationship with nature and stop our destruction of ecosystems, habitats and species”. The agreement follows days of intense negotiations. On Saturday, ministers made impassioned speeches about the need to agree on clear goals to put nature on a path to recovery by the end of the decade. The UN Development Programme said the "historic agreement" meant people around the world could hope for real progress to halt biodiversity loss.

- Reverse nature's decline or there is no future - UN
- 'Magical marine species' pushed toward extinction
- Environment targets job half-done, say charities

Scientists have warned that with forests and grasslands being lost at unprecedented rates and oceans under pressure from pollution, humans are pushing the Earth beyond safe limits.
This includes increasing the risk of diseases, like SARs CoV-2, Ebola and HIV, spilling over from wild animals into human populations.
A key sticking point has been finance. In echoes of the climate summit, COP 27, in Egypt, some countries have been calling for a new fund to be set up to help preserve biodiversity, but this was rejected by others.

- **Bid to revoke peninsula theme park planning status**

Conservation groups are calling for the removal of a planning designation that could allow a theme park to be built on the Swans combe Peninsula in Kent - a site described as a "haven for wildlife". Various wildlife organisations have written to Michael Gove, the secretary of state for levelling up, housing and communities, asking him to axe a direction for the London Resort theme park to be classed as a Nationally Significant Infrastructure Project (NSIP). NSIPs - usually assigned to large scale projects such as airports and major roads - bypass normal local planning requirements. In the letter, external, the coalition of wildlife charities said revoking the NSIP direction was essential "to secure the future of this nationally important wildlife site". The government said the environmental impact would be considered once an application had been submitted. In 2021, Swans combe Peninsula was given protection as a Site of Special Scientific Interest (SSSI) due to the national importance of its geology, plant life and wildlife. It is home to over 2,000 invertebrate breeds, 82 species of birds including nightingales, as well as water voles and otters. A but, in April, London Resort said they would submit a revised application, external "in due course". Sally Smith from Kent Wildlife Trust said losing the site would be "devastating for the species that are here, but also for the local community". "It is our lifeblood; it sustains us," she added. "We need this for our health and our wellbeing, so this development cannot go ahead. "The coalition of nature organisations - which includes Kent Wildlife Trust and The Royal Society for the Protection of Birds (RSPB) - said they have developed a "vision" to keep the peninsula as a publicly accessible green space.

However, the letter said the group cannot proceed with the NSIP direction "hanging over it".

London Resort and the department for levelling up, housing and communities have been approached for comment. A spokesman for the Department for Levelling Up, Housing and Communities said: “We were recently provided with an update on the status of the project which remains of national significance due to its size and importance for driving economic growth. “The environmental impact of the project will be considered once an application is submitted.”

PREPARED BY:

1. KANADE HITESH
2. RAI AYUSH