

ISSN: 2583-6013

EARTH ROOT

SEPTEMBER, 2023

VOLUME 28

“To leave the world better than you found it, sometimes you have to pick up other people’s trash.” — Bill Nye



About E-magazine

“Earth Root” is an open access e-magazine in the discipline of Environmental sciences published by Earth Root Foundation. The aim of the e-magazine is to provide information and upgradation of knowledge about environmental issues on wider scale and to share ideas and resources to the readers. Using essential knowledge people can lead a healthy life, which is more sustainable and can connect with ongoing efforts for stopping catastrophically the climate change. E-magazine caters to all related environmental aspects ranging from big issues like climate change, renewable energy and pollutants in the atmosphere to the health of human and living beings on Earth. We also take topics of water resources and efforts and measurement to provide optimum use of it; including large scale atmospheric circulation linked with oceans and ecology.

| | |
|-----------------------------|--|
| Title - | Earth Root |
| Frequency - | Monthly |
| ISSN - | 2583-6013 |
| Publisher - | Earth Root Foundation |
| Chief Editor - | Dr. Vivek Panwar |
| Copyright - | Earth Root Foundation |
| Starting Year - | 2021 |
| Subject - | Environment |
| Language - | English |
| Publication Format - | Online |
| Phone No. - | 011 49064364 |
| Email ID - | info@earthrootfoundation.org vivekpanwar@earthrootfoundation.org |
| Mobile No. - | +91 876631774 +91 99990013202 |
| Website - | www.earthrootfoundation.org |
| Address - | 456, pocket B, Sector -13 Dwarka, New Delhi -110078 |

Editorial Board



DR. VIVEK PANWAR

Editor-in-Chief

Assistant Professor, Department of Physics, Sri Venkateshwara College, University of Delhi, Benito Juarez Marg, Dhaula Kuan, New Delhi, Delhi 110021, India

Email: vivek@svc.ac.in

Profile Link: http://www.svc.ac.in/SVC_MAIN/Departments/FacultyPhysics/Vivek.php

PROF. SURENDRA KUMAR DHAKA

Editor

Professor, Department of Physics & Electronics,
Rajdhani College, University of Delhi, Ring Road, Raja Garden, New
Delhi – 110015, India

Email: skdhaka@rajdhani.du.ac.in

Profile Link: <https://www.rajdhanicollege.ac.in/Base/faculty/159>



DR. NARENDRA SINGH

Editor

Aryabhata Research Institute of Observational Sciences (ARIES),
Manora Peak, Nainital – 263001, Uttarakhand, India

Email: narendra@aries.res.in

Profile Link: <https://www.aries.res.in/people/user-profile/sci/76>



DR. DEEKSHA KATYAL

Editor

Associate Professor, University School of Environment Management,
Guru Gobind Singh Indraprastha University, Sec-16C, Dwarka, New
Delhi – 110078, India

Email: deekshakatyal@ipu.ac.in

Profile Link: http://www.ipu.ac.in/usem/Associate_Professors.php



DR. PAWAN KUMAR

Editor

Assistant Professor, Department of Chemistry,
Rajdhani College, University of Delhi, Ring Road, Raja Garden, New
Delhi – 110015, India

Email: drpkumar@rajdhani.du.ac.in

Profile Link: <https://www.rajdhanicollege.ac.in/Base/faculty/248>



TABLE OF CONTENTS

**GLOBAL BOILING: THE SCORCHING SYMPHONY
OF CLIMATE CRISIS
(GEETIKA SINGH)** 04

**HARVESTING THE ENERGY OF SUN: UNLOCKING
RENEWABLE POWER FOR A SUSTAINABLE
FUTURE
(VIBHA SARASWAT)** 06

**BATTLING THE PLASTIC MENACE ON EVEREST:
A CALL FOR RESPONSIBLE CLIMBING
(MANSI TIWARI)** 08

**USING EVIDENCE FROM LAST ICE AGE,
SCIENTISTS PREDICT EFFECTS OF RISING SEAS
ON COASTAL HABITATS** 10

**A FROZEN PANDORA'S BOX: THE ALARMING
THREAT OF MELTING ICE
(JIGYA)** 12

**MOVIE RECOMMENDATION: COWSPIRACY:
THE SUSTAINABILITY SECRET 2014** 15

POEM 16

GLOBAL BOILING: THE SCORCHING SYMPHONY OF CLIMATE CRISIS

Geetika Singh
USEM, Guru Govind Singh
Indraprastha University, New Delhi



The Earth is in the throes of an unprecedented environmental crisis, one that poses an existential threat to life as we know it. The term "Global Boiling" has emerged to describe the alarming rise in global temperatures, signalling the gravity of the situation. This climate emergency, primarily driven by human activities, demands immediate and collective action from all corners of the world. As we navigate through record-breaking temperatures and devastating heatwaves, it is essential to recognize the urgency and adopt sustainable practices to combat this looming catastrophe.

The UN's Revelation: A Stark Warning

A recent analysis by the United Nations has revealed that July 2023 stands as the hottest month in at least 120,000 years, surpassing the record set just a month prior in June. The first 23 days of July witnessed a global mean surface air temperature of 16.95°C, breaking the previous record of 16.63°C set in 2019. This unprecedented surge in temperatures has given rise to extreme heatwaves and alarming ocean warming, posing a grave threat to the delicate balance of our ecosystems. Secretary-General António Guterres aptly described the era we now face as the shift from global warming to "global boiling." This transformation signifies a shift from a gradual temperature increase to a rapidly escalating crisis with severe implications.

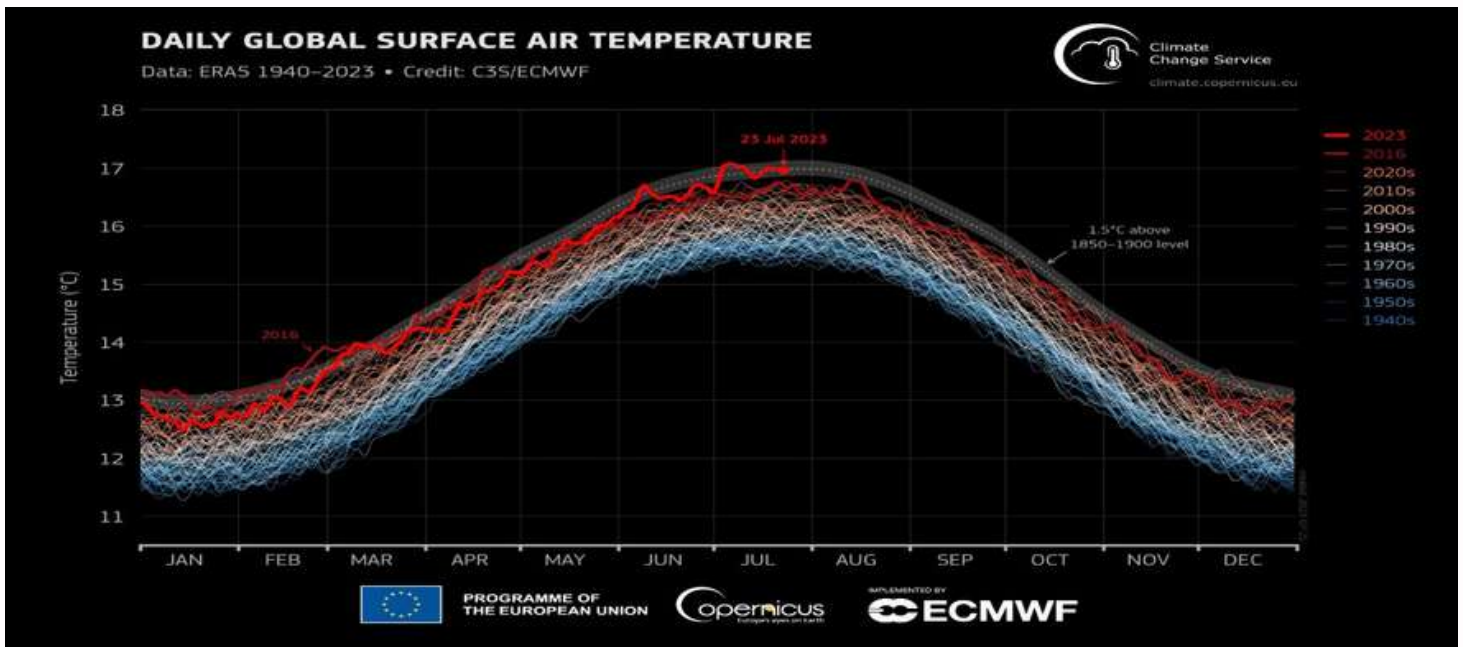
The record-breaking heatwaves witnessed in July resulted in three of the hottest days on record, accompanied by the longest three-week period of extreme heat in history. Alarming ocean temperatures, comparable to a hot tub in some regions, have further deepened the crisis.

Unravelling the Human Role

At the heart of Global Boiling lies the undeniable impact of human activities, primarily the emission of greenhouse gases. These gases, including carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), act as heat-trapping agents, leading to the greenhouse effect. The burning of fossil fuels for energy, deforestation, industrial practices, and unsustainable agricultural methods have contributed to a relentless accumulation of greenhouse gases in the atmosphere, driving this climate crisis.

Scientific Prognosis: A Dire Future Ahead

The scientific community, through the World Meteorological Organization (WMO), warns of a grim future if immediate action is not taken.



With a 98% likelihood of at least one of the next five years becoming the hottest on record, and a 66% chance of temporarily exceeding the 1.5°C threshold above pre-industrial levels, the urgency to curb emissions cannot be overstated. Although temporary surpassing may not indicate a permanent breach, it serves as a stark reminder of the need for immediate climate action.

Path Forward: Embracing Responsibility

The era of Global Boiling demands that we confront this crisis collectively, recognizing our shared responsibility as stewards of the planet. Governments must lead the way by implementing robust policies to incentivize eco-friendly practices, invest in renewable energy sources, and foster sustainable development. Simultaneously, businesses and industries must take an active role in adopting greener technologies and transitioning to low-carbon operations.

Individual Actions Matter

Influencing change requires individual actions as well. We can all contribute by making conscious choices in our daily lives to reduce our carbon footprint. Simple steps, such as opting for public transport or cycling, reducing single-use plastics, and consuming responsibly, can collectively make a significant impact.

The Role of Science and Innovation

Science and innovation will play pivotal roles in overcoming the challenges posed by Global Boiling. Investing in cutting-edge research, developing green technologies, and embracing sustainable practices can pave the way towards a cleaner and greener future.

Conclusion

The era of Global Boiling is a clarion call for immediate and united action to protect our planet from the imminent threats of climate change. The revelation of July 2023 as the hottest month in history serves as a wake-up call, urging us to act responsibly and embrace sustainability on a global scale. We must prioritize renewable energy, reduce greenhouse gas emissions, and embrace innovation and scientific advancements to secure a sustainable and habitable world for generations to come. The time for action is now; the consequences of inaction are far too grave. Let us come together as a global community to address Global Boiling and preserve the delicate balance of our planet. The future of our world is in our hands, and by taking decisive steps today, we can create a better and more sustainable tomorrow.

HARVESTING THE ENERGY OF SUN: UNLOCKING RENEWABLE POWER FOR A SUSTAINABLE FUTURE



VIBHA SARASWAT
USEM, Guru Govind Singh
Indraprastha University, New Delhi

In the pursuit of a sustainable future, the focus of scientists and engineers has shifted to the sun, the most abundant and potent energy source in our solar system. Capturing the radiated energy from our celestial companion offers an unprecedented opportunity to access an almost boundless supply of renewable power. Embracing solar energy has the potential to revolutionise electricity generation, curtail carbon emissions, and lead us towards a cleaner and more environmentally friendly world. This article delves into the methods of harnessing solar energy and converting it into a driving force for a sustainable future.

Photovoltaic (PV) solar cells stand at the core of solar energy technology. These specialised cells are designed to directly convert sunlight into electrical energy through the photovoltaic effect. When sunlight hits the solar cell's surface, it stimulates electrons, resulting in the production of electricity. With continuous progress in material science and engineering, solar cells have become more efficient and affordable over time.

Nowadays, it is a familiar sight to see solar panels installed on rooftops, solar farms, and integrated into urban infrastructure. As the technology advances, the cost of solar power generation has significantly decreased, making it a financially feasible and practical solution for meeting our energy requirements.

Apart from photovoltaic cells (PV), concentrated solar power (CSP) presents an alternative method for harnessing solar energy. CSP systems focus sunlight onto a concentrated area using mirrors or lenses, generating high levels of heat that can be used to power turbines and produce electricity. Unlike PV systems, CSP has the capability to store excess heat, ensuring a consistent power output even during periods without direct sunlight.

CSP facilities are strategically located in regions with abundant solar irradiance, such as deserts, where there is ample open space. These power plants have the potential to provide energy to entire regions and decrease reliance on fossil fuels. By capitalising on solar heat, CSP contributes to a sustainable energy future and reduces our carbon footprint.

Energy storage solutions play a crucial role in overcoming one of the primary challenges of solar energy – its intermittent nature due to variations in sunlight availability. Since the sun does not shine continuously, and energy demand fluctuates throughout the day, effective energy storage becomes essential.

Various technologies, such as batteries, pumped hydro storage, and thermal storage systems, are employed to store the surplus energy generated during peak sunlight hours for later use. By doing so, these energy storage solutions help stabilise the grid and enhance the reliability and feasibility of solar power as a sustainable energy source.

The advancements in solar technology have led to its diverse applications, extending beyond conventional solar panels. Building-integrated photovoltaics (BIPV) integrate solar panels seamlessly into architectural designs, enhancing both aesthetics and energy efficiency simultaneously.

Additionally, portable solar chargers are becoming increasingly popular, allowing individuals to harness solar power for charging electronic devices while on the move. Solar textiles and wearable solar cells are also under development, enabling clothing to serve as personal solar power sources.

Transitioning to solar energy yields numerous benefits. Environmentally, solar power significantly reduces greenhouse gas emissions, thus addressing climate change and air pollution concerns. As the cost of solar technology decreases, the economic advantages become evident, as solar power systems provide energy independence, create employment opportunities in the renewable energy sector, and stimulate local economies. Harnessing the power of the sun marks a significant stride towards achieving a sustainable and environmentally friendly future. The swift evolution of solar energy technologies offers an unmatched potential to revolutionise the global energy scenario.

Embracing solar power not only diminishes our impact on the environment by lowering carbon emissions but also ensures a reliable and renewable energy supply for future generations. Realising the full potential of solar energy requires a collaborative effort from individuals, businesses, and governments, all working together to create a brighter and more sustainable world.

TRACKING SOLAR PV

Solar PV generation increased by a record 270 TWh (up 26%) in 2022, reaching almost 1 300 TWh. It demonstrated the largest absolute generation growth of all renewable technologies in 2022, surpassing wind for the first time in history. This generation growth rate matches the level envisaged from 2023 to 2030 in the Net Zero Emissions by 2050 Scenario. Continuous growth in the economic attractiveness of PV, massive development in the supply chain and increasing policy support, especially in China, the United States, the European Union and India, are expected to further accelerate capacity growth in the coming years. The tracking status of solar PV has therefore been upgraded in 2023 from “more effort needed” to “on track”.

Maintaining a generation growth rate aligned with the Net Zero Scenario will require reaching annual capacity additions that are close to three times higher than those of 2022 until 2030. Achieving this will require continuous policy ambition and effort from both public and private stakeholders, especially in the areas of grid integration and in addressing policy, regulation and financing challenges.

BATTLING THE PLASTIC MENACE ON EVEREST: A CALL FOR RESPONSIBLE CLIMBING

Mansi Tiwari
USEM, Guru Govind Singh
Indraprastha University, New Delhi

Perched majestically in the heart of the Himalayas, Mount Everest, the crown jewel of Earth's mountain ranges, stands as the embodiment of human determination and exploration. Towering at an awe-inspiring height of 29,032 feet (8,848 meters) above sea level, this iconic peak has long captured the imagination of adventurers and mountaineers alike.

THE RISE OF EVEREST TOURISM:

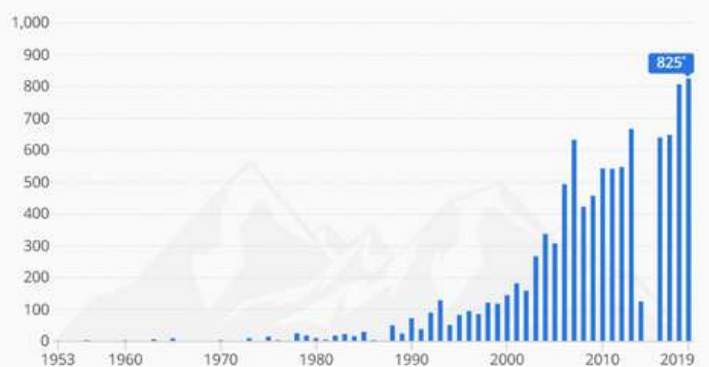
In 1953, 29th of May, Tenzing Norgay and Edmund Hillary made history by climbing the peak. During these early expeditions, climbers used basic equipment and primarily relied on natural materials like cloth, leather, and metal. The environmental impact was relatively minimal as lesser attempts were made, and the numbers were easily managed. Before this historic climb, there were few attempts to summit the peak due to which the environmental impact was relatively minimal.

In the following decades, Everest climbing evolved from a daring adventure into a booming commercial enterprise. The stunning achievements of early climbers captured the public's imagination, driving an increasing

number of adventure seekers to attempt the climb. As Everest tourism flourished, so did the associated waste generation, including plastics. As the snow-capped slopes of Mount Everest beckon intrepid climbers, they now also bear witness to the tragic consequences of human neglect.

Everest's Summit Is Getting Dangerously Crowded

Estimated number of successful Everest ascents per year from 1953 to 2019



* Estimated number up to May 25, 2019.
Sources: E. Jurgalski | 8000ers.com, Washington Post, Daily Telegraph, alanarquette.com

WHAT IS CAUSING IT?

The mountaineers discard so much junk along their treks that the mountain has been called "the highest peak of trash dump in the world." Most of the microplastics found were fibres made of a plastic called polyester which is mostly used in the camping and climbing gears.

The once unblemished landscape now reveals a haunting tapestry of discarded plastic bottles, wrappers, and other non-biodegradable materials, left behind by trekkers and climbers who seek to conquer the peak.

The accumulation of plastic waste on Everest is not only a result of recent expeditions but also a consequence of historical climbing activity. Items left behind by early expeditions have endured for years, creating legacy waste that persists on the mountains.

The presence of plastic waste on Mount Everest has sparked a pressing concern among environmentalists and local communities who hold a deep reverence for these sacred mountains. Beyond the visible eyesore, plastic pollution poses a severe threat to the fragile ecosystem and the lives that depend on it. As glaciers recede and snow melts, these discarded plastics find their way into rivers and streams, eventually reaching the lowlands and impacting downstream communities. The total waste across the expedition groups from in a season included the following:

1. Burnable garbage - 25,866 kg (approx. 57,024 pounds)
2. Human waste - 22,803 kg (approx. 50,272 pounds)
3. Kitchen waste - 6,079 kg (approx. 13,401 pounds)
4. Non-burnable garbage - 5,291 kg (approx. 11,664 pounds)

The warming global climate has melted frozen garbage left by climbers over so many years, environmental concern in Nepal, India, and China is taking tough measures to clean up air, water and soil contaminated after decades of breakneck growth.

INITIATIVES TOWARDS THE CHANGE

Both the Nepalese and Chinese governments, who oversee climbing expeditions to Mount Everest from their respective sides, have implemented rules and regulations to address the plastic waste accumulation on the mountain.

These regulations are primarily aimed at minimizing the environmental impact of climbing activities and promoting responsible waste management. Here are some of the rules and regulations that were in place.

Nepal's Initiatives:

Mandatory Waste Deposit: Nepal's government required all climbers to make a refundable deposit before their ascent. Climbers would get their deposit back only if they brought back a certain amount of their waste, including plastic, from the mountain.

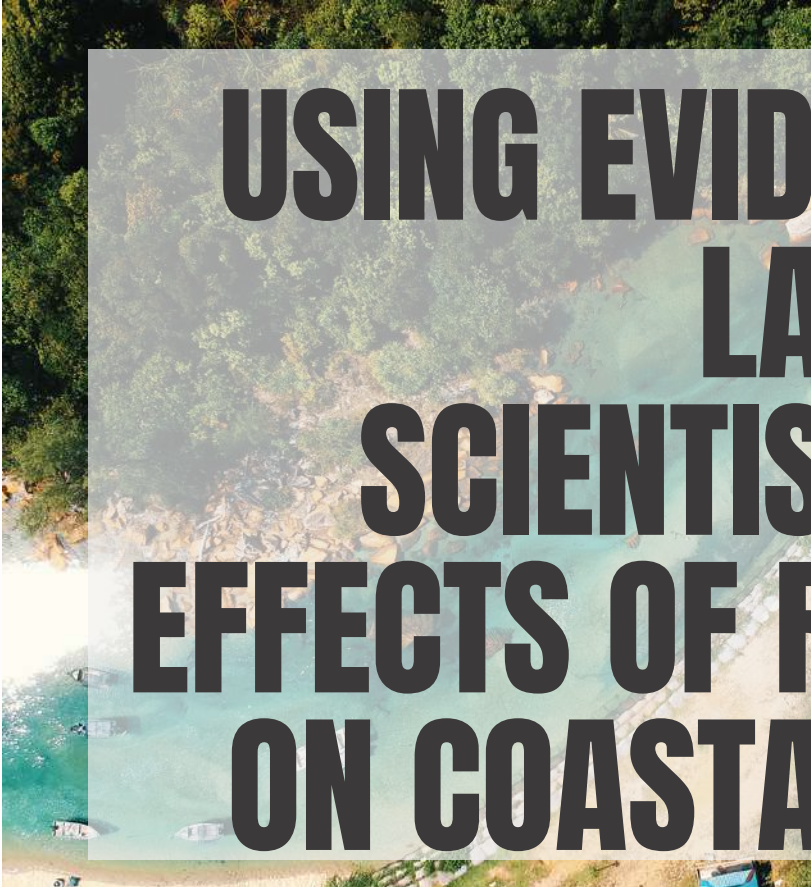
In 2022, the Nepal Army collected around 34 metric tons (around 74,957 pounds) of waste from Everest and other mountains as part of the Clean Mountain campaign. The total collected waste increased from 10 metric tons (around 22,046 pounds) in 2019 and 27.6 metric tons (around 60,847 pounds) in 2021, according to the reports.

The Mountain Clean-up Campaign 2023, an initiative led by Nepali Army jointly in collaboration with Unilever Nepal to clean up and remove waste and plastics from peaks like Mt. Everest, Mt. Lhotse, Mt. Annapurna, and Mt. Baruntse has concluded for this year. The campaign with a goal of removing 35,000 Kg of waste and plastics from the peaks this year as "An Endeavor to Save the Himalayas."

Through this campaign, a total of 35,708 Kg of waste was collected from the peaks this year.

China's Regulations:

China has been making efforts to address the plastic waste issue on the northern side of Mount Everest as well. In the upcoming future, China also plans to build environmentally friendly toilet and waste collection sites at Mount Everest which is a great initiative.



USING EVIDENCE FROM LAST ICE AGE, SCIENTISTS PREDICT EFFECTS OF RISING SEAS ON COASTAL HABITATS

Date: August 31, 2023

Source: Rutgers University

Summary: The rapid sea level rise and resulting retreat of coastal habitat seen at the end of the last Ice Age could repeat itself if global average temperatures rise beyond certain levels, according to an analysis by an international team of scientists.

The rapid sea level rise and resulting retreat of coastal habitat seen at the end of the last Ice Age could repeat itself if global average temperatures rise beyond certain levels, according to an analysis by an international team of scientists from more than a dozen institutions, including Rutgers.

In a study published in *Nature*, scientists reported how ancient coastal habitats adapted as the last glacial period ended more than 10,000 years ago and projected how they are likely to change with this century's predicted sea level rise. They conducted their analysis by examining the ocean sediments of ancient shorelines from a time when oceans rose rapidly, mainly because of melting ice sheets in the Northern Hemisphere. This examination allowed them to infer how ancient coastal habitats changed and formed the basis of improved predictions about the present.

"Every ton of carbon dioxide humankind emits turns up the global thermostat, which in turn increases the pace of global sea level rise," said Robert Kopp, a Distinguished Professor in the Department of Earth and Planetary Sciences in the Rutgers School of Arts and Sciences and an author of the study. "The faster the oceans rise, the greater the threat to tidal marshes, mangroves and coral reefs around the world. For example, in our analysis, most tidal marshes are likely to be able to keep up with sea level rise under 1.5 degrees Celsius [2.7 degrees Fahrenheit] of warming, but two-thirds are unlikely to be able to keep up with 2 degrees Celsius [3.6 degrees Fahrenheit] of warming."

The temperature ranges mentioned in the study are significant because they relate directly to the Paris Agreement, an international treaty on climate change adopted in 2015, said Kopp, who is also the director of the Megalopolitan Coastal Transformation Hub and co-director of the University Office of Climate Action. The goal of the Paris treaty is to substantially reduce carbon emissions worldwide to limit the global temperature increase in this century to 2 degrees Celsius above preindustrial levels while pursuing efforts to limit the increase even further to 1.5 degrees Celsius.

The study predicted higher global temperatures will provoke sea level rises that will lead to instability and profound changes to coastal ecosystems, including tidal marshes, mangrove forests, coral reefs and coral islands.

Tidal marshes -- low-lying areas flooded and drained by tidal salt water -- protect many of the world's coastlines. They sequester pollutants, absorb carbon dioxide and protect nearby communities from storm surge and flooding. They are common along the Atlantic shores of North America. Large expanses of tidal marshes line New Jersey's coast.

"This new paper provides evidence from geological history that, without mitigation and under current projections, tidal marshes will not have the capacity to adjust," said Judith Weis, a Professor Emerita of Biological Sciences at Rutgers-Newark who isn't an author of the study but is an expert on tidal marshes. "For many tidal marshes in New Jersey, this is not a prediction but a description of the present situation, in which sea level is rising faster than the marshes can increase their elevation. This makes it even more vital to reduce climate change as rapidly as possible." "Tidal marshes and mangrove forests adapt to rising seas by accumulating sediment and moving slowly inland." "Mangroves and tidal marshes act as a buffer between the ocean and the land -- they absorb the impact of wave action, prevent erosion and are crucial for biodiversity of fisheries and coastal plants," said Neil Saintilan, the paper's lead author and a professor at Macquarie University in Sydney, Australia. "When the plants become water-logged due to higher sea levels, they start to flounder."

Under worst-case scenarios, these coastal habitats, buffeted by rising sea levels, will shrink and, in some cases, wash away, as they have in the distant past, according to the study.

A FROZEN PANDORA'S BOX: THE ALARMING THREAT OF MELTING ICE

Jigyaa
Daulat Ram College
University of Delhi



In recent years, climate change has significantly accelerated the melting of polar ice caps and glaciers, leading to unprecedented consequences for the planet and all life forms that call it home. As the ice retreats, scientists have uncovered a concerning revelation - the release of pathogens that have been dormant for millennia. This article explores the potential ramifications of these ancient pathogens being reintroduced into the world and the urgent need for comprehensive action to address this imminent threat to mankind.

The Lurking Danger Beneath the Ice

The vast expanses of ice and permafrost in polar regions have acted as natural time capsules, preserving various microorganisms and pathogens for thousands, and in some cases, millions of years. However, as global temperatures continue to rise, these frozen tombs are slowly unlocking their secrets and with them, a treasure trove of ancient diseases is being unearthed. Scientists have already discovered and revived viruses and bacteria from melted ice cores, leading to concerns about the potential reemergence of deadly diseases

that modern humans have little to no immunity against. The possibility of these pathogens escaping the confines of the polar regions and spreading globally presents an ominous reality that demands immediate attention.

Understanding the Implications: From Frozen Tombs to Global Threats

While it is true that only a small percentage (just 1%) of the pathogens buried in the ice are sufficient to cause widespread outbreaks, the consequences could be catastrophic. The human population, with limited defences against these ancient diseases, could be vulnerable to pandemics of unprecedented scale and severity.

In the absence of historical exposure, human immune systems are ill-equipped to combat these resurgent pathogens effectively. The challenges in developing targeted treatments and vaccines for these ancient diseases could exacerbate the impact of such outbreaks, leading to higher mortality rates and extended periods of distress.



Learning from Past Encounters

History provides us with valuable lessons on the dangers of previously dormant pathogens making a resurgence. For instance, the 1918 Spanish flu pandemic, one of the deadliest in human history, resulted from the H1N1 influenza virus, a strain that had been circulating in birds for decades before adapting to infect humans.

With melting ice, scientists are now grappling with the potential release of pathogens such as anthrax, smallpox, and even ancient strains of influenza, some of which have been extinct for thousands of years. This raises the spectre of history repeating itself on a global scale, necessitating a focused approach to pre-emptive measures.

Unfreezing the Unknown: Melting Ice's Impact on Ecosystems

The repercussions of melting ice extend beyond humanity's doorstep. Polar regions are home to unique ecosystems that have thrived in frozen conditions for centuries. As ice retreats, entire ecosystems face disruption, putting plants, animals, and microorganisms at risk. The release of pathogens can trigger cascading

effects, altering food webs and species interactions, jeopardizing biodiversity, and the resilience of these delicate ecosystems.

Addressing the Menace: A Global Call to Action

Understanding the urgency of this matter, nations must unite and take concrete actions to address the growing threat posed by the release of ancient pathogens from melting ice. The following steps can be considered:

1. Collaborative Research: International collaboration between scientists, environmentalists, and public health experts is vital to study the pathogens and develop comprehensive risk assessments.
2. Monitoring and Surveillance: Establishing robust monitoring and surveillance systems in polar regions can help detect changes in pathogen concentrations, enabling timely responses.
3. Pre-emptive Vaccination and Preparedness: Developing vaccines and preparedness plans for potential outbreaks of ancient diseases can be crucial in minimizing their impact on human populations.

4. **Climate Change Mitigation:** The root cause of this threat lies in climate change, driven by greenhouse gas emissions. Reducing our carbon footprint is essential to slowing down ice melting and mitigating the release of pathogens.

5. **Responsible Tourism and Resource Extraction:** Implementing sustainable practices in polar tourism and resource extraction can minimize disturbances to ice-rich areas.

The situation requires collective responsibility, foresight, and commitment from governments, industries, and individuals worldwide. By taking proactive steps to address this issue, we can hope to safeguard the health of future generations and protect the delicate balance of life on our planet. Only through concerted efforts can we ensure a sustainable and secure future for humanity in the face of this unprecedented challenge.

Conclusion

The threat posed by just 1% of pathogens from melting ice has the potential to endanger mankind profoundly. The study of these ancient diseases serves as a stark reminder of the consequences of unchecked climate change and highlights the urgent need for global cooperation and swift action.

Questions

1. *What is the main consequence of accelerated climate change on polar ice caps and glaciers?*

Answer: Melting of ice caps and glaciers.

2. *What have scientists discovered from the melting ice in polar regions?*

Answer: Dormant pathogens and microorganisms.

3. *How might the release of ancient pathogens from melting ice affect human populations?*

Answer: This leads to potential pandemics with severe consequences.

4. *How can the 1918 Spanish flu pandemic serve as a cautionary example?*

Answer: It showcases the global impact of pathogen outbreaks.

5. *What is the impact of melting ice on polar ecosystems?*

Answer: Disruption of ecosystems, endangering plant, animal, and microbial life.

6. *Why is international collaboration necessary to address the threat of ancient pathogens?*

Answer: To study pathogens and develop risk assessments.

7. *How can monitoring and surveillance systems help in polar regions?*

Answer: Detecting changes in pathogen concentrations for timely response.

8. *What can pre-emptive vaccination and preparedness plans help achieve?*

Answer: Minimize the impact of outbreaks caused by ancient diseases.

9. *What is the significance of mitigating greenhouse gas emissions?*

Answer: Slowing down ice melting and limiting the release of pathogens.

10. *Why is responsible tourism and resource extraction crucial in polar regions?*

Answer: To minimize disturbances to ice-rich areas and protect the environment.

MOVIE RECOMMENDATION

COWSPIRACY: THE SUSTAINABILITY SECRET 2014

Release date: 26 June 2014 (Los Angeles)
Directors: Kip Andersen, Keegan Kuhn
Producers: Kip Andersen, Keegan Kuhn
Production companies: A.U.M. Films, First Spark Media, Appian Way Productions
Screenplay: Kip Andersen, Keegan Kuhn
Distributed by: Netflix

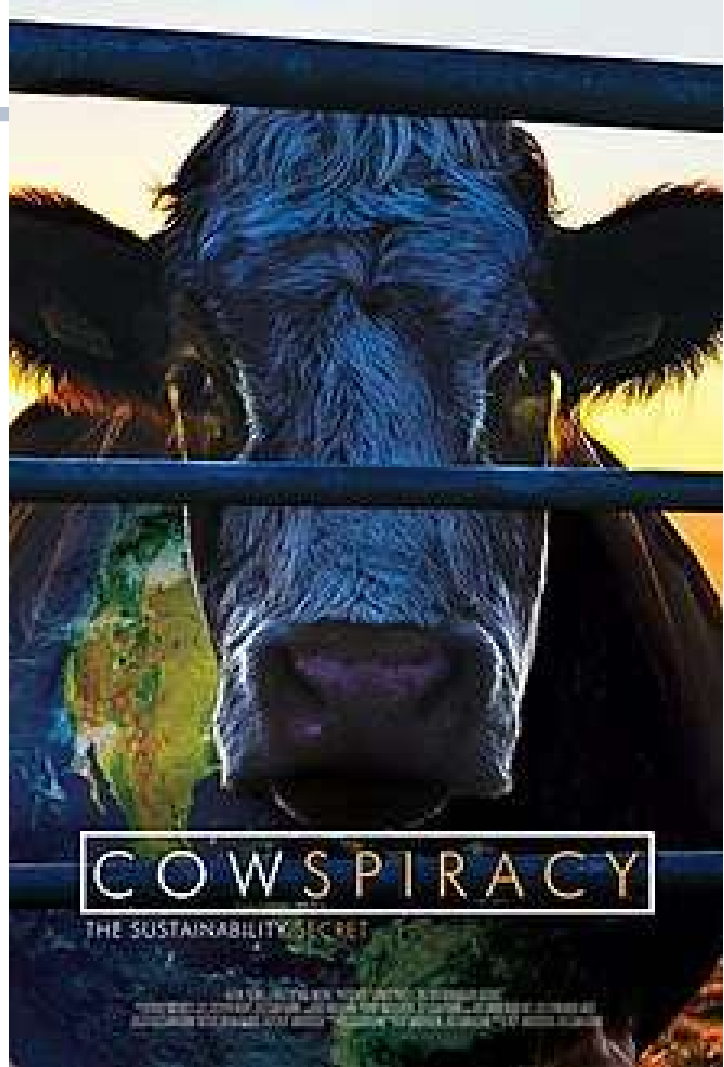
Synopsis

Cowspiracy: The Sustainability Secret is a groundbreaking feature-length environmental documentary following intrepid filmmaker Kip Andersen as he uncovers the most destructive industry facing the planet today – and investigates why the world’s leading environmental organizations are too afraid to talk about it.

Animal agriculture is the leading cause of deforestation, water consumption and pollution, is responsible for more greenhouse gases than the transportation industry, and is a primary driver of rainforest destruction, species extinction, habitat loss, topsoil erosion, ocean “dead zones,” and virtually every other environmental ill. Yet it goes on, almost entirely unchallenged.

As Andersen approaches leaders in the environmental movement, he increasingly uncovers what appears to be an intentional refusal to discuss the issue of animal agriculture, while industry whistleblowers and watchdogs warn him of the risks to his freedom and even his life if he dares to persist.

As eye-opening as Blackfish and as inspiring as An Inconvenient Truth, this shocking yet humorous documentary reveals the absolutely devastating environmental impact large-scale factory farming has on our planet, and offers a path to global sustainability for a growing population.



"Heed the Earth's Cry: Global Warming's Wake-Up"

In whispers faint, the Earth does cry,
A global warming's mournful sigh,
A tale of change, of burning skies,
Awakening us to the planet's cries.

Beneath the sun's relentless beams,
We see the cost in wilting dreams.
Glaciers vanish, oceans swell,
In this perilous path, we must excel.

Polar bears, in icy realms they roam,
Their Arctic homes now threatened, gone.
In Amazon's heart, the green does fade,
Forests fall to a reckless blade.

Seasons shift in disarray,
As we hasten the world's decay.
The air grows thick with carbon's kiss,
A warming world, we must not dismiss.

But within the darkness, hope remains,
A chance to mend our Earth's great pains.
Reducing footprints, day by day,
We'll find a more sustainable way.

As guardians true, we take our stand,
Protecting Earth, our precious land.
Facing global warming's stark demand,
Together, we'll heal, hand in hand.

Let's heed the Earth's cry, take action now,
To change the course, to make our vow.
In twenty-eight lines, the message rings clear,
The time for change is drawing near.

Aims and Objectives of the EPA

The chief aims and objectives of the Environment Protection Act, 1986 are listed below.

1. Implementing the decisions made at the United Nations Conference on Human Environment held in Stockholm.
2. Creation of a government authority to regulate industry that can issue direct orders including closure orders.
3. Coordinating activities of different agencies that are operating under the existing laws.
4. Enacting regular laws for the protection of the environment.
5. Imposing punishments and penalties on those who endanger the environment, safety and health. For each failure or contravention, the punishment includes a prison term of up to five years or a fine of up to Rs. 1 lakh, or both. This can also be extended for up to seven years in cases.
6. Engaging in the sustainable development of the environment.
7. Attaining protection of the right to life under Article 21 of the Constitution.

Main Provisions of Environment Protection Act

The EPA empowers the Centre to “take all such measures as it deems necessary” in the domain of environmental protection.

1. Under the law, it can coordinate and execute nationwide programmes and plans to further environmental protection.
2. It can mandate environmental quality standards, particularly those concerning the emission or discharge of environmental pollutants.
3. This law can impose restrictions on the location of industries.
4. The law gives the government the power of entry for examination, testing of equipment and other purposes and power to analyse the sample of air, water, soil or any other substance from any place.
5. The EPA explicitly bars the discharge of environmental pollutants in excess of prescribed regulatory standards.

MAGAZINE TEAM

Associate Editor : Kamaldeep
: Jagriti Hinduja

Publisher

Earth Root Foundation

456, Pocket B, Sector-13, Dwarka, New Delhi-110078

www.earthrootfoundation.org | info@earthrootfoundation.org | +91 8766317774

