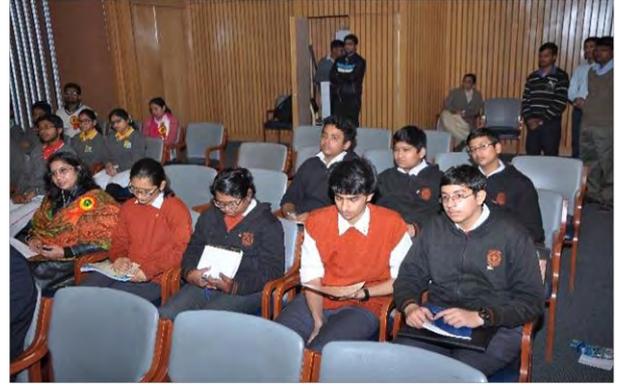




# e - Magazine



## Climate Change Forum for Youth in India

Vol-I, Issue -2, March-April, 2021

e-magazine



**Climate Change Research Institute**

Science & Technology Solutions for Sustainable Energy Future

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# About CCRI and CCFYI

## CCRI

**Climate Change Research Institute (CCRI)** is a not-for-profit organization registered under Registration Society Act 1860. The website is [www.ccri.in](http://www.ccri.in).

The Institute has been founded with a vision to promote understanding of climate change, mentoring and developing human resource capabilities for finding solutions. The ultimate goal of climate change adaptation and mitigation is to reduce accumulation of greenhouse gas (GHG) emissions in the atmosphere and reduce *carbon footprints*.

The Institute has a mission is to inform youth in schools and colleges about the environment, ecosystem changes and consequences of climate change through awareness and capacity building on topics of scientific & societal interest such as Energy, Health, Water and Air pollution among others.

## CCFYI

**Climate Change Forum for Youth in India (CCFYI)** is a platform for open discussions on the climate change related issues for the youth of our nation. We compliment young authors for their expression to climate change and contributions by articles and posters.

Climate change education is under-represented in the formal education system in India. There's an urgent need of introducing an interwoven integration of environmental knowledge with the learning on how an individual reduce emissions by connecting the dots between major factors of lifestyle and major contributors of the carbon emissions.

The CCFYI aims to build a responsible and environmental citizenship amongst the targeted audience using an interwoven integration of environmental and climate change knowledge sharing, a sense of responsibility and self-awareness about scientific solutions to mitigate the ongoing climatic impacts.

*Climate Change Youth Forum has been actively publishing it's e-Magazine issues. This is second of the series. We hope you will enjoy reading it, if you want to share your views or send any article related to climate change, or if you want to apply for the membership, please feel free to reach us out at [info.acbccs@gmail.com](mailto:info.acbccs@gmail.com)*

# About e-Magazine

The e-Magazine is a science outreach initiative by Climate Change Research Institute, since the very beginning of year 2021. Our lives took a drastic shift in year 2020 and there was a big full stop on all the activities, as we were locked inside our houses by a microscopic organism COVID-19!

Everything and anything went digital and we all started working from home. The Climate Change Research Institute (CCRI) also resumed its work from home. On 4th September 2020 on the opportune virtual Teachers' day celebration, we decided to launch [Climate Change Forum for Youth in India](#), with following Aims and Objectives;

- To raise awareness about environment and climate change, liaise with Climate Change Research Institute and interact with other bodies to achieve the goals.
- To provide members with information and to encourage community participation with climate change solutions in their locality.
- To promote welfare and sustainable development goals.

We opened the free membership of the Forum; anyone within the age bandwidth of 15-35 years could apply for it by responding to Google form. A number of applications from teachers and students from different schools of Delhi-NCR have been received.

Focusing on outreach and youth engagement, the e-Magazine is before you. Since the e-Magazine is started as two-way communication between the members and CCFYI, each issue has a unique theme for knowledge sharing, members' contribution related to each theme and e-News Alerts on climate change.

## Editorial Advisory Board

1. [Prof D. P. Agrawal](#), Former Chairman, UPSC
2. [Shri V.S. Verma](#), Former Member, CERC
3. [Shri Suresh Goel](#), Principal Architect, SGA Labs
4. [Prof T Satyanarayana](#), Div. of Biological Sciences & Engineering, NSTI
5. [Shri A. K. Jain](#), Ex-Commissioner, DDA

## Editor-in-Chief

[Dr. \(Mrs\) Malti Goel](#), Former Adviser, DST and Chief Executive, CCRI

# Message from the President

*"The proper use of science is not to conquer nature but to live in it."-Barry Commoner*

Youth right now stands at a crossroad to save their present and future from the changing climate. Youth are not only the victims of climate change, but also will be the most valuable to climate change if no action is taken.

Keeping the above in mind, we sowed the seed of the idea of bringing on table the CCFYI e-Magazine. This magazine is a two way communication between you, who are learning about climate change and we, who disseminate information and scientific solutions to fight climate change through campaigns and workshops.

Some of you participated in the World Earth Day Awareness Webinar on 27th April, 2021. The theme was 'Restoring Earth Resources-Climate Change and Water'. Some of you have given creative posters about what you think of the World Earth Day and these are included here. Based on your responses the **Quiz on Water** analysis is included in this issue.

This e-magazine is your magazine and a platform for the members to express and educate themselves on climate change, making the contents reflect their ideas.

Look forward to interacting with the members of the forum and receiving your feedbacks.

I invite your suggestions, queries, experiences and articles which we can publish for the next issue.

With best wishes

**Dr.(Mrs.) Malti Goel, President, CCRI**



**Dr.(Mrs.) Malti Goel, President, Climate Change Research Institute addressing School Children on the Earth Day Awareness programme.**

Dr.(Mrs.) Malti Goel is Former Adviser, DST and CSIR Emeritus Scientist in the Ministry of Science & Technology, Government of India and is an energy and climate change expert. After her doctorate in Physics from IIT Delhi, she got training in Italy, Japan, Israel and UK in coping with global warming and sustainable development, management of energy utilization and technology change. She was Editor, STAC-SCAN Plus in DST on S&T highlights of socioeconomic ministries. She has also served as Peer Reviewer for Elsevier publications on Energy and Energy Policy and was honorary editor-in-chief for the India's only air pollution journal brought out by the Indian Association for Air Pollution Control. She received in 2016 the PEARL Foundation for Educational Excellence Life Time Achievement Award in recognition of her outstanding contributions and achievements in the field of Climate Change Research in India.

# World Earth Day 2021 Celebrated

The World Earth Day 2021 is celebrated across all the corner of the world each year on 22<sup>nd</sup> April. The last year, marked the “Golden Jubilee’ of the Earth Day. Each year’s Earth Day comes up with a theme, the theme for this year was “**Restore Our Earth**”, which brings attention to natural processes, emerging green technologies, and innovative thinking that can restore the world’s vulnerable ecosystems.

**Climate Change Research Institute (CCRI)** took the opportunity to celebrate the event. Since the whole week is celebrated as Earth Day Week, CCRI organized a Webinar for the occasion on the theme “**Restoring Earth Resources-Climate Change and Water**”. The theme of the event was kept keeping in mind both World Water Day, celebrated on 22<sup>nd</sup> March and World Earth Day which is celebrated on 22<sup>nd</sup> April.

The webinar was organized on the online platform and lasted for two hours. Post that, the Earth Day Quiz was conducted for the students on the water.

Dr.(Mrs.) Malti Goel, President, CCRI welcomed all the participants, the eminent speakers and the experts. She also gave a small presentation highlighting various facts regarding earth day and water. The webinar had expert speakers like **Dr. G.D. Sharma**, *Former Secretary UGC & Ex-Director CEC, India*; **Dr. N. K Goel**, *Professor of Hydrology, IIT Roorkee* and **Dr. Rina Surana**, *Associate Professor, MNIT, Jaipur*.

Different topics were touched from how *boondh boondh* of water was saved in ancient time and was considered an important commodity to how we can save water now using scientific approaches to prevent water scarcity in near future.

[Please click here for the link of the event](#)



Snippets from the webinar on Earth Day celebrated on 27<sup>th</sup> April 2021 on Zoom Calls

# Climatology of a Smart City - Delhi

Climate change has become an emergency for the humanity. To scientifically understand about Climate and Climatology, we present a case study about Delhi, which is one of the 100 cities selected under the Smart City Mission.

## What is climate?

Climate is a long-term average of aggregate weather, typically averaged over a period of 30 years.

**Climate of the Delhi city** is characterized by extreme dryness with an intensely hot summer and cold winter.

## What is climatology?

The study of climate and how it changes over time is called Climatology and this study helps us to understand the atmospheric conditions that cause weather patterns and temperature changes over time.

## How does climate change affect the cities ?

**“Indian cities are particularly vulnerable to water stress, prolonged hot (or cold) days, heat island effect, flash floods, urban water logging, droughts, and deteriorating air quality.”**

The global rising temperature is causing extreme climatic events, and these this will affect the basic services, human livelihood, housing, health and infrastructure.

**Cities inhabit 3% of the planet’s land but account for 60-80% of all energy consumption, and 75% of the planet’s carbon emission.**

Delhi is one of the most polluted cities in the world and is struggling hard to fight the climatic effects!

**With every month fluctuating and record breaking temperature, how prepared is Delhi to combat the climate change? Have a look into the climate data record of Delhi:**

## Some Important Climatic Data of Delhi

Average Annual Maximum Temperature **31.4°C**

Average Annual Minimum Temperature **19.0°C**

Maximum Recorded Temperature

**47.2°C on 29<sup>th</sup> May 1944**

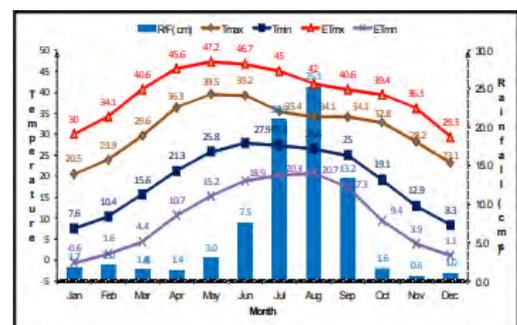
Minimum Recorded Temperature

**-0.6°C on 16<sup>th</sup> January 1935**

Average Annual Rainfall: **79.4 cm**

Recorded Heaviest Rainfall in 24 Hrs

**28.5 cm on 5<sup>th</sup> September 1944**



[One year averaged temperature and rainfall data of Delhi](#)

Source: [India Meteorological Department](#)

## Smart City - Delhi's Climate Features for 2021

### Delhi Breaks Temperature Record (March-April 2021)

**"The all-India average monthly maximum temperature during March 2021 with 32.65 degrees Celsius is the warmest in the last 11 years ,third warmest in 121 years in terms of monthly average maximum temperature and 40.1 degree Celsius on 31<sup>st</sup> March 2021, after 76 years "- [Indian Meteorological Department](#)**

**"After record high temperatures in March, in April, the Capital city recorded lowest maximum temperatures in the last five years"-[Indian Meteorological Department](#)**

One of the major health and environmentally hazardous complex problem that Delhi face is **Air Pollution** which causes climate change.

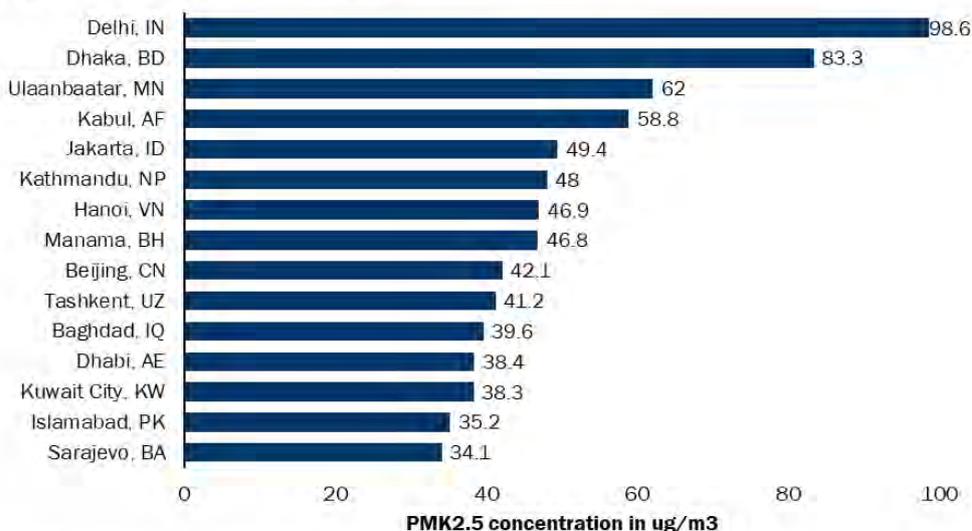
Apart from breaking temperature records, **Delhi has been ranked as the world's most polluted capital** in a new report by Swiss technology company IQAir.

According to a report by Independent Australia, the regional meteorological phenomena like **high winds and dusty conditions in summer emphasized by low relative humidity conditions; episodic dust transport events from nearby areas; background ozone concentrations and long range transport of precursor emissions** might be the reason for the air pollution in Delhi.

Most of the time, the anthropogenic (human-induced) activities like *stubble burning , bursting of crackers, constructional activities and vehicular emissions* when coincide with the weather conditions(natural) of Delhi like *wind direction, dry and still air during winters, temperature inversion*, we face worst case scenario of air pollution in Delhi especially post- Diwali.

### Post-Covid19 rise in pollution levels - Delhi tops the graph

**Figure Air pollution in capital cities**



**Source:** "Average PM2.5 concentration of the most polluted capital cities in the world in 2019 (in micrograms per cubic meter of air)." Statista.

**Note:** Average PM2.5 levels in the most polluted capital cities worldwide 2019 (in micrograms per cubic meter of air).

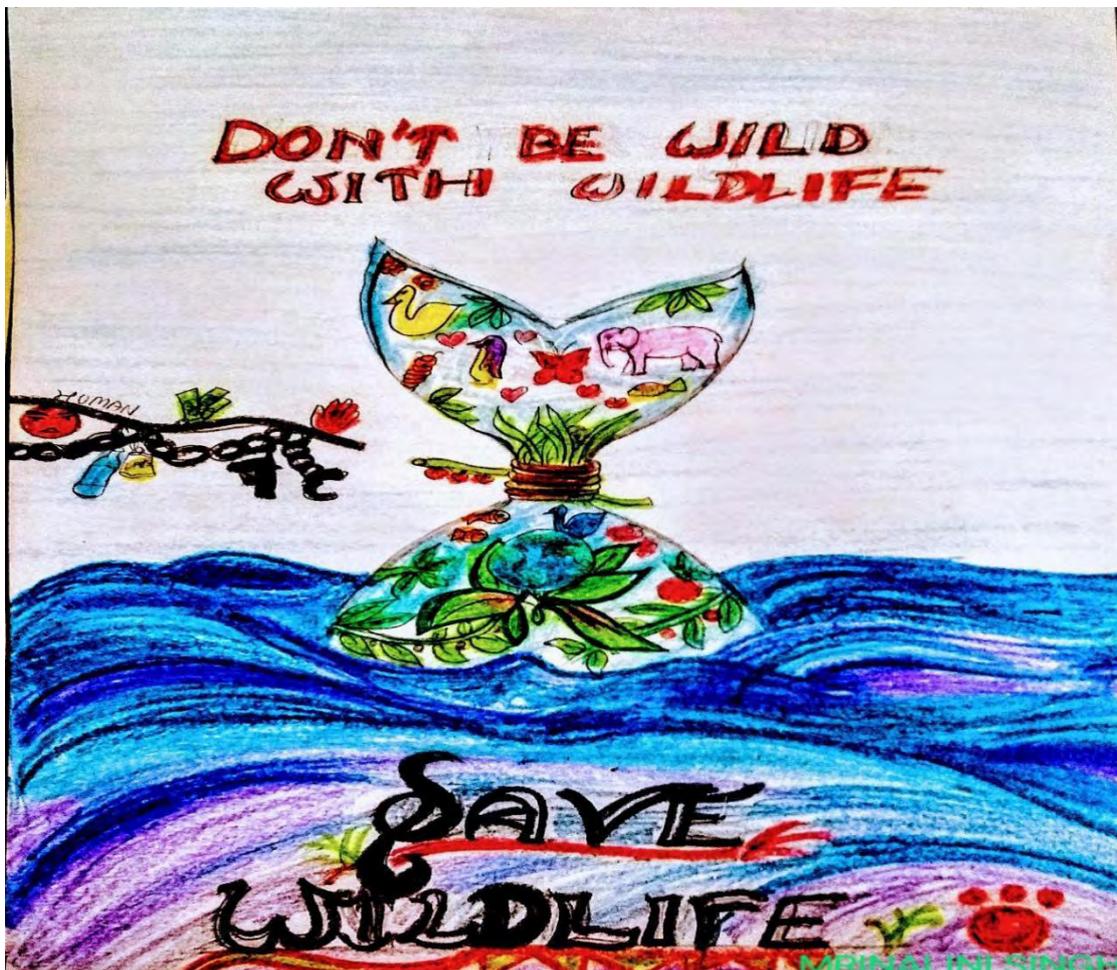
BROOKINGS

# Member's Contribution

## Poster "Save Wildlife" on Climate Change by Mrinalini Singh

### About Mrinalini Singh

She is 10th standard class student and her area of interest is Social Science. She strongly believes that young people need to be much more actively involved in shaping the global environment.



### Meaning of my painting

- During the times of lockdown nature gets free from the trap of humans.
- It again replenish itself.

### Symbols

- **Water** - Vast universe in which life exists
- **Whale**- Nature (Breaking free from the cruelty of the humans)
- **Love symbols on Whale's tail** - Nature is asking us to stop destruction and all the evils. And come back to nature for a new beginning.
- **Animals** - They are all broken free from cruel human beings by nature via virus

# Member's Contribution

## Poster on Earth Day by Tisya Dewan

### About Tisya Dewan

Tisya is a student and an active participant of school's Ecoclub. Her area of interest is sustainability and she is quite passionate about the environment



### Description:

*"Every Day is Earth Day if we want it to be. If we as individuals change our lifestyles to adopt more sustainable lifestyle then that would positively have an impact on the environment. Every action no matter how big or small it is they all count."*

Tisya Dewan  
The Shri Ram School  
Gurugram



# Earth Day Quiz on Water

Theme : “Restoring Earth Resources- Climate Change and Water”



Everyday should be celebrated as the Earth Day



# “Earth Day Quiz on Water”

“Water is the driving force of all nature.” — Leonardo da Vinci

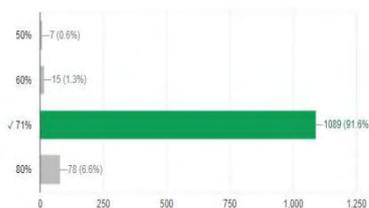
On the occasion of the Earth Day Celebration, the Climate Change Research Institute (CCRI) organized the Awareness and Capacity Building Workshop on “Restoring Earth Resources- Climate Change and Water”. An Earth Day quiz on WATER was designed so that all the aspects related to water of major human concern were touched upon with a set of 15 questions divided under three subheads; Water on Earth, Water We Use and Water Pollution was circulated to the participants. To reach out schools in these tough times of COVID-19 when the whole country is fighting from the virus, we sent mails to the schools asking them to spread the link amongst the students.

We received an overwhelming response from 1189 participants from different schools of Delhi-NCR which includes *Queen Mary's School Northend, Titiksha Public School, Jaypee Public School Noida, Universal Public School, Preet Vihar, Mayur Public School, Brain International School, Rukmini Devi Public School, Billabong High International School, Indraprastha World School, New Era School, Maharaja Agarsain Public School, Lilawati Vidya Mandir Sr Sec School*. Highest responses were received from the students of Indraprastha World School followed by the students Maharaja Agarsain Public School. The analysis of responses has been carried out by Ms Komal Bora, Research Assistant, CCRI.

## Responses to the Quiz

1.

What percentage of the earth is water?  
1,089 / 1,189 correct responses

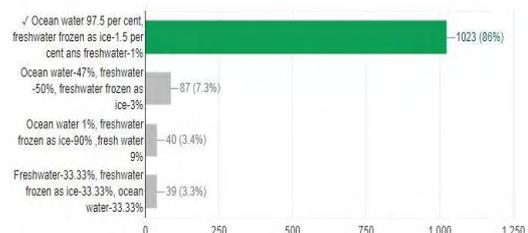


**What percentage of the earth is water?** was the first question, and we got 91.6% correct responses. As we all know, water is one of the most precious natural resource on this planet Earth. The Earth is known as “the Blue Planet” because of 71% of its surface is covered with water. It is one of the finite source!

2.

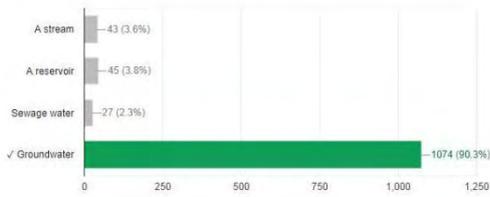
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What is the share of fresh water, frozen water and ocean water on earth  
023 / 1,189 correct responses



3.

Water that is stored in layers of rock and soil beneath the Earth's surface is called?  
1,074 / 1,189 correct responses



**Water that is stored in layers of rock and soil beneath the Earth's surface is called?**

90.3% correct responses.

**Groundwater** is a part of the natural water cycle and plays a significant role in the economy. For us groundwater plays a very important role in maintaining the water level and flows into rivers, lakes and wetlands.

4.

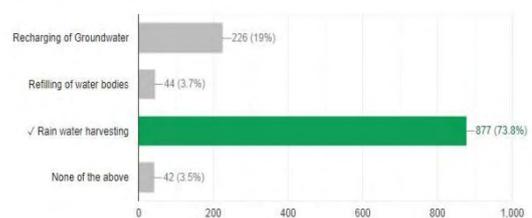
**Which is best way to store water on earth\_?**

73% correct responses.

**Rain water harvesting (RWH)** Technique is the best way to store water.

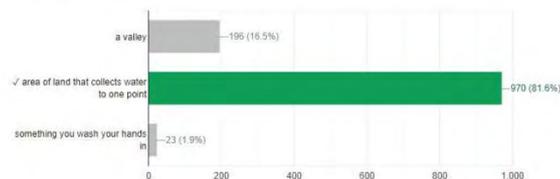
Rainwater harvesting technique goes back to 9<sup>th</sup> or 10<sup>th</sup> century. The modern India needs to learn a lot from the traditional water conservation, like Bandhi, Jhalara, Bawari etc, not only these are ecologically safe but cost-effective alternatives to rejuvenate the water levels.

Which is best way to store water on earth  
877 / 1,189 correct responses



5.

A river basin is \_\_\_\_\_  
970 / 1,189 correct responses



**A river basin is\_\_\_\_\_**

81.6% correct responses.

**A river basin** is an area of land that collects water. The river basin helps in sending the water falling into the surrounding land into the central river and to estuary or sea. **India has 20 river basins, the Ganga basin is the largest.** River basins provide a range of ecosystem services. They help in the management of wetlands and water resources.

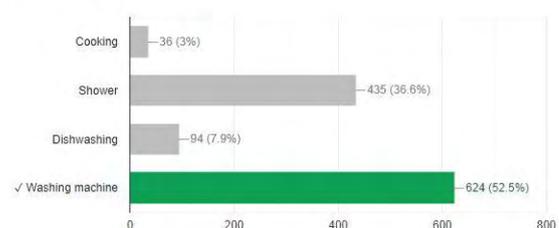
6.

**In households, which activity consumes most water?**

52.5% correct responses.

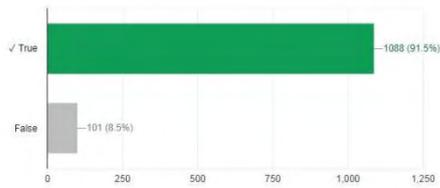
**Washing Machine** consumes the most of water in the households more than a shower. A **fully automatic front load washing machine consumes 60L of water per wash!**

In households, which activity consumes most water  
624 / 1,189 correct responses



7.

Leaks are responsible for great amounts of hidden water loss in the home  
1,088 / 1,189 correct responses



**Leaks are responsible for great amounts of hidden water loss in the home**

91.5% correct responses.

The **leaks** are responsible for high amount of wastage of water as drop by drop, a lot of water can be wasted.

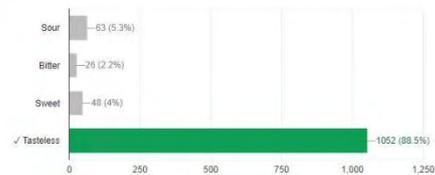
8.

**Taste of water is \_\_\_\_\_**

88.5% correct responses.

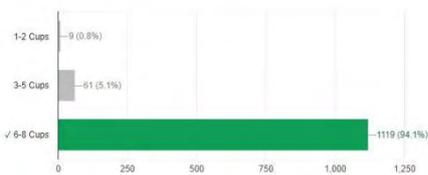
Water is tasteless. Water is a transparent, inorganic, odourless substance. It is neither sweet nor sour.

Taste of water is \_\_\_\_\_  
1,052 / 1,189 correct responses



9.

To stay healthy how much water should you drink in day?  
1,119 / 1,189 correct responses



**To stay healthy how much water should you drink in day?**

94.1% correct responses.

***We need to consume 6-8 cups of water in a day!***

Water is a vital fluid which helps in maintaining the body temperature and it is suggested to consume at least 2-3 L of water on daily basis.

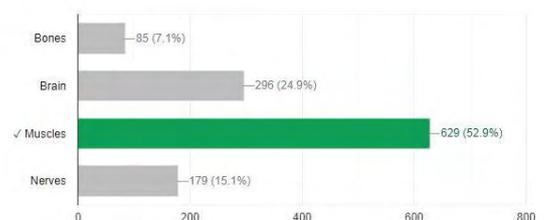
10.

**Which of these contains the most water in our body?**

52.9% correct responses.

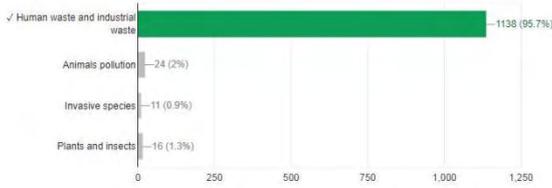
***An adult human body has up to 60% of the water.*** The muscles in a human body contains most of the water followed by brain nerves and bones.

Which of these contains the most water in our body?  
629 / 1,189 correct responses



11.

What is the main cause of water pollution?  
1,138 / 1,189 correct responses



### What is the main cause of water pollution?

95.7% correct responses

**Water pollution** is the contamination of water bodies. Human waste and industrial waste is the main cause of water pollution. *In 2018, the Central Pollution Control Board (CPCB), India's nodal pollution monitoring agency, had identified over 351 polluted river stretches across India.*

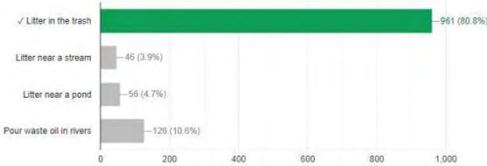
12.

### Water pollution can be reduced if we throw

80.8% correct responses.

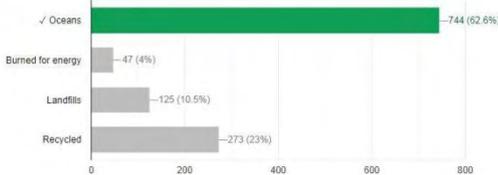
There is a mind-set if the waste is thrown into the water bodies, one can easily get rid of the waste. This misconception has caused the water pollution in almost all the water bodies. The correct option that litter should be thrown in the trash to reduce water pollution.

Water pollution can be reduced if we throw  
/ 1,189 correct responses



13.

Where does the majority of plastic waste end up?  
744 / 1,189 correct responses



### Where does the majority of plastic waste end up?

62.6% correct responses

**Oceans** are where majority of the plastic ends up. At least 8 million tons of plastic end up in our oceans every year, and make up 80% of all marine debris from surface waters to deep-sea sediments. While 23% responded the plastic is recycled. *Only 8.7% of plastic waste is recycled in a year.*

14.

### Why is plastic pollution in water dangerous for marine life?

81% correct responses.

The **plastic pollution** causes a number of nuisances for the marine animals like they consume the plastic which they are unable to digest and end up their lives. Also, at times the plastic gets tangled in it which hinders their ability to swim and they die.

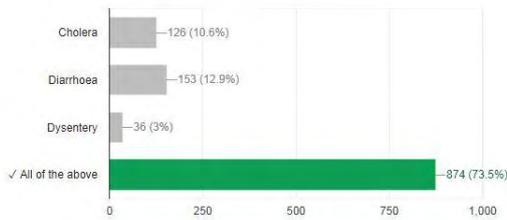
Why is plastic pollution in water dangerous for marine life?  
964 / 1,189 correct responses



15.

Name a disease caused by drinking contaminated water

874 / 1,189 correct responses



**Name a disease caused by drinking contaminated water.**

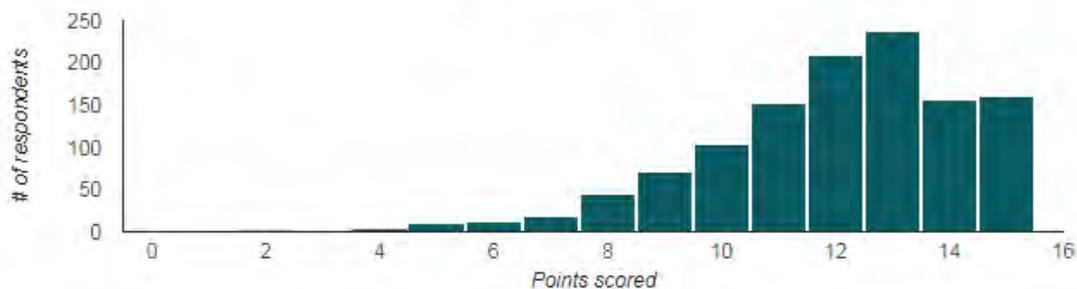
73.5% correct responses.

**Contaminated water** can transmit diseases such as diarrhoea, cholera, dysentery, typhoid, and polio. **Contaminated drinking water is estimated to cause 485 000 diarrhoeal deaths each year.**

## Quiz Result

On the whole 160 respondents scored 15/15, while 157 scored 14/15, 238 participants scored 13/15, 210 scored 12/15. The average score is 11.6/15 which clearly shows that the participants took lot of interest and awareness about water conservation and water pollution is growing.

Score Distribution



***“You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty.”***

**- Mahatma Gandhi**

***On this note, we all should pledge to save the water and not pollute the water bodies!***

# From the Archive

## World Earth Day Celebrations 2020

Year 2020, was a very special year for all the environment enthusiasts across the globe as all the country were to come together to discuss on their Paris Agreement achievements and 22<sup>nd</sup> April 2020, marked the 50<sup>th</sup> Anniversary of the World Earth Day.

At Climate Change Research Institute (CCRI), had planned to organize the three most important environment day, The World Earth Day, the World Environment Day and the International Ozone Day in collaboration with **India International Centre (IIC)**

Unfortunately, the whole world was under worldwide lockdown because of a microscopic virus, Corona Virus! Mobility of people wasn't allowed; the world was now connected virtually through different platforms. So, did our plans for celebrating the Earth Day was set back, but we didn't stop, we too connected to the people through virtual platform. We came up with a small video and shared it on the YouTube. The theme for the Earth Day 2020 was **"Climate Action"**.

We prepared a video for the World Earth Day on how to the waste at home.

Here are the snippets from the video:



[Click here for the video](#)

# COVID-19 and Warm Weather

LiveMint quoted Dr.(Mrs.) Malti Goel, President and CEO, CCRI on the article published on their website on 17<sup>th</sup> March 2020. The article talks about if the changing weather towards a warmer weather will make the SAR-CoV-2 less contagious.

## About LiveMint

Representative of an integrated newsroom, [www.livemint.com](http://www.livemint.com) is Mint's online portal and is among the fastest growing news website in India. mint provides daily national, international and business news, tracks market movements and detailed coverage of significant events.

## The Article:

**mint**

Home > News > India > COVID-19: Will summers make the virus less contagious?

### COVID-19: Will summers make the virus less contagious?



High temperature and relative humidity can reduce the transmission of COVID-19, as was the case during SARS outbreak in 2002-03, according to a new study. (PTI)

**mint**

...temperatures, the situation may worsen for countries like Australia and South Africa in southern hemisphere, it added.

The argument is based on a few assertions. Firstly, influenza virus is more stable in cold temperature since respiratory droplets tend to remain airborne longer in cold and dry air. Secondly, cold and dry weather tends to weaken immunity and make people more susceptible to attack from viruses.

There is no denying that transmission of viruses is affected by climatic conditions. "Cold weather is generally favored by viruses and as temperature rises to 25-26°C, they starts becoming less effective," said Malti Goel, former adviser, Ministry of Science and Technology.

[Read the full article here.](#)

## Simple Steps to Protect the Planet!

Since in 2020, we couldn't physically connect to each other for any sort of the events, **Dr. (Mrs.) Malti Goel, President and CEO Climate Change Reserach Institute**, wrote a special note for the youth. In which, she told them about few simple yet effective steps to be followed amid COVID-19 by staying at home. The following are the steps:

- **Plant a sapling at your house:** Even a small indoor plant can do wonders, giving positive vibes. We all are working from home these days; it may affect our mental health by being indoors for long. Since the spring has hit, we can grow any native plant to celebrate the Earth Day.
- **Learn more about the native plants, shrubs and birds** or attend webinars online. Holy Basil (*Tulsi*) is found in almost all household across India and there are many plants both indoor and outdoor grown in the household.
- **Involve with Greenery** it can be a fun activity and getting closer to nature by knowing and involving with the plants, their flowering time etc.
- **Utilise your Lockdown time.** Read a book. Take up courses being offered online to learn new skills. Refresh your skills and utilize time.
- **Look for more sustainable options** and learn how to live more sustainable. For example: Buy things, the fruits and vegetables that are being sourced locally and are seasonal.
- **Stay at home and prevent wasting food and water.** Since COVID-19 has put on halt most of the economic activities and as per predications, this is leading to a recession worst then that hit in 2008-09. Start saving for yourself and save environment.
- **Reusing and recycling at home.** Experiment with reuse and recycle. For example, the polybags or plastics can be used to grow herbs (mint, coriander, basil etc.).
- **Have Fun.** Play games like Chess and Carom, of course Ludo. Read stories, do painting, record your video, experiment with the things around you.

She ended the note with an Indian Proverb with a deep meaning, apt for environment protection

*“Only When the Last Tree Has Died, And the Last River Been Poisoned and the Last Fish Been Caught, Will We Realize We Cannot Eat Money!”*

Read the second line as

*And the Last Fish Been Caught, Will We Realize We Could be Attacked by Covid-19!*

# Plastic Pollution and Control

*“Plastic is pretty fantastic—we just need to be smarter and more sensible about how we make it, use it, and recycle it when we're done”.*

Dr (Mrs) Malti Goel, Chief Executive, CCRI as a mentor took a lecture session on PLASTIC POLLUTION AND CONTROL in '100 Schools-100 Hours' project of Network of Organizations for Science and Technology Communication (NOSTC) supported by DST. The NOSTC is a registered society with about 100 institutional members. In view of pandemic COVID-19 threat, the Session was taken online from 12:00 to 1400 hrs on 19<sup>th</sup> March 2021 and was held in Modern Public School, Shalimar Bagh, attended by about 200 students and teachers.

Our Prime Minister Mr Modi, in his address to the nation on the occasion of Independence Day (August 15, 2019) announced that India will phase out **single use plastics** completely by 2022. India began phase out on October 2, 2019, the 150th birth anniversary of Mahatma Gandhi.

**What is Single use plastic?** It is *“a plastic commodity intended to be used once for the same purpose before being disposed of, or recycled”*.

**Banning of single use plastic and recycling plastic waste** are the two key strategies for controlling plastic pollution in the short and medium term. Three sets of Actions are envisaged.

- \* The first set of rules proposed an increase in polybags' thickness from 60 microns to 120 microns from September 30, 2019. Polybags of lower thickness than 60  $\mu$  are already banned throughout the country.
- \* The second stage, starting from January 1, 2022, included a ban on sales, manufacture, usage, import and distribution of six categories of single-use plastic, including earbuds with plastic sticks, plastic flags, ice-cream sticks, plastic sticks for balloons, polystyrene etc.
- \* From July 1, 2022 the items such as - plastic plates, glasses, cutlery (plastic forks, spoons, knife, trays), packaging films from sweet boxes, invitation cards, cigarette packets, plastic/PVC banners less than 100 micron and stirrers will be banned.

The 3Rs approach in campaign mode includes; **Refuse, Reuse, and Recycle**



The school is entirely free, Children are expected to get clean, dry plastic waste from home and work at the plastic recycling center, make bricks and help to stop plastic burning



## Technology Innovations for Reducing Plastic Waste

Plastic eating Mushroom has been grown, which when seeded in landfills, can get rid of plastic waste.

'WaterShark' is another technology developed to eat or capture plastics floating in ocean waters. It helps in reducing marine debris.

# E-News on Climate Change

## Andhra Pradesh to fight climate change diseases

Date: March 2, 2021

Published by: Timesofindia

*Summary:* The state government is set to prepare a comprehensive action plan to tackle diseases spreading as a result of climate change. It will carry out a comprehensive survey on vulnerability assessment and risk-mapping for commonly occurring climate-sensitive illnesses in the state. It will also assess the needs of healthcare professionals to handle such diseases.

[Read More](#)



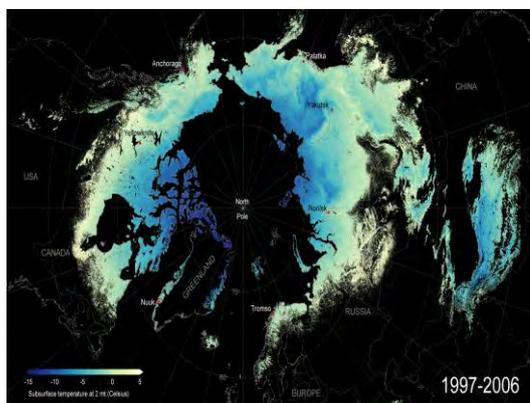
## World's Biggest Coastal Cities Sinking Into Manmade Cavities: Study

Date: March 10, 2021

Published by: NDTV

*Summary:* Scientific assessment published Monday in Nature Climate Change is the second in a month to show that coastal economies are more vulnerable than previously thought to the danger of rising sea levels.

[Read More](#)



## Ecosystems across the globe 'breathe' differently in response to rising temperatures

Date: March 3, 2021

Published by: Sciencedaily

*Summary:* Land stores vast amounts of carbon, but a new study suggests that how much of this carbon enters the atmosphere as temperatures rise depends on how far that land sits from the equator. The United Nations' 17 key areas for global development -- known as the Sustainable Development Goals (SDGs) -- range from tackling poverty, hunger and sanitation to promoting clean energy, economic growth and reducing inequality. [Read More](#)

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## How global sustainable development will affect forests

*Date:* March 10, 2021

Published by: Sciencedaily

*Summary:* Global targets to improve the welfare of people across the planet will have mixed impacts on the world's forests, according to new research. The United Nations' 17 key areas for global development -- known as the Sustainable Development Goals (SDGs) -- range from tackling poverty, hunger and sanitation to promoting clean energy, economic growth and reducing inequality. [Read more](#)



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## Study predicts the oceans will start emitting ozone-depleting CFCs

*Date:* March 15, 2021

Published by: Sciencedaily

*Summary:* The Ocean, a longtime reservoir for CFC-11, will become a source of the ozone-depleting chemical by middle of next century. The world's oceans are a vast repository for gases including ozone-depleting chlorofluorocarbons, or CFCs. They absorb these gases from the atmosphere and draw them down to the deep, where they can remain sequestered for centuries and more.

[Read More](#)

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## Changes in ocean chemistry show how sea level affects global carbon cycle

*Date:* March 25, 2021

Published by: Sciencedaily

*Summary:* A new analysis of strontium isotopes in marine sediments has enabled scientists to reconstruct fluctuations in ocean chemistry related to changing climate conditions over the past 35 million years. The results provide new insights into the inner workings of the global carbon cycle and, in particular, the processes by which carbon is removed from the environment through the deposition of carbonates. [Read More](#)





## How coastal forests are managed can impact water cycle

Date: March 29, 2021

Published by: Sciencedaily

*Summary:* Using meteorological sensors perched on towers above the forest canopy, researchers are able to track water flow to and from wetland forests on the North Carolina coast. They have gathered data on forest carbon and water cycling spanning 14 years. Younger trees take up and release less water than mature trees 10 years or older, researchers from North Carolina State University found in a new study that tracked how water moves through wetland pine forests near the North Carolina coast. [Read More](#)



## Intensity of tropical cyclones to increase next century due to climate change: Study

Date: April 1, 2021

Published by: Downtoearth

*Summary:* The intensity of cyclones, hurricanes and typhoons might increase in the next century due to global warming, a new joint British-American study has said. Scientists from the National Oceanic and Atmospheric Administration (NOAA) and Princeton University in the United States and University of East Anglia in the United Kingdom analyzed 90 peer reviewed articles to understand the impact of a changing climate on tropical cyclones — a combined name used for the three cyclonic storms. [Read More](#)

## Rewilding our cities: beauty, biodiversity and the biophilic cities movement

Date: 4 April, 2021

Published: Theguardian

Our cities are dominated by glass-faced edifices that overheat like greenhouses then guzzle energy to cool down. Instead, we could have buildings that are intimately connected to the living systems that have evolved with us, that celebrate the human-nature connection that is central to our wellbeing.

[Read More](#)





## Climate change is making Indian monsoon seasons more chaotic

**Date:** April 8, 2021

**Published by:** Sciencedaily

**Summary:** If global warming continues unchecked, summer monsoon rainfall in India will become stronger and more erratic. This is the central finding of an analysis by a team of researchers that compared more than 30 state-of-the-art climate models from all around the world. The study predicts more extremely wet years in the future - with potentially grave consequences for more than one billion people's well-being, economy, food systems and agriculture.

[Read More](#)

## Sulphur dioxide from Caribbean volcano reaches India, WMO confirms

**Date:** 17 April 2021

**Published by:** downtoearth

**Summary:** The Sulphur dioxide (SO<sub>2</sub>) emissions from a volcanic eruption in the Caribbean reached India April 16, 2021 sparking fear of increased pollution levels in the northern parts of the country and acid rain. Sulphur dioxide reacts with water to form sulphuric acid which can come down with rainfall. [Read More](#)



## 8 States Highly Vulnerable To Climate Change: Report

**Date:** April 18, 2021

**Published by:** Ndtv

**Summary:** **New Delhi:** These states, mostly in the eastern part of the country, require prioritisation of adaptation interventions, the report pointed out.

Eight Indian states -- Jharkhand, Mizoram, Odisha, Chhattisgarh, Assam, Bihar, Arunachal Pradesh and West Bengal -- are highly vulnerable to climate change, according to a national climate vulnerability assessment report. [Read More](#)

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## Will May witness severe cyclones?

Date: 23 April 2021

Published by: Downtoearth

*Summary:* Private weather forecaster Skymet said “there is no likelihood of any cyclone in the Indian seas during the month of April” in 2021. This is unusual, though not without precedents; given it is the prime month for cyclones to strike India, Bangladesh and Sri Lanka. From March through May is considered as the pre-monsoon cyclone season for Indian Seas. [Read More](#)



## Scientists turn to deep learning to improve air quality forecasts

Date: April 2, 2021

Published by: Sciencedaily

*Summary:* Air pollution from the burning of fossil fuels impacts human health but predicting pollution levels at a given time and place remains challenging, according to a team of scientists who are turning to deep learning to improve air quality estimates. Results of the team's study could be helpful for modellers examining how economic factors like industrial productivity and health factors like hospitalizations change with pollution levels.

[Read More](#)

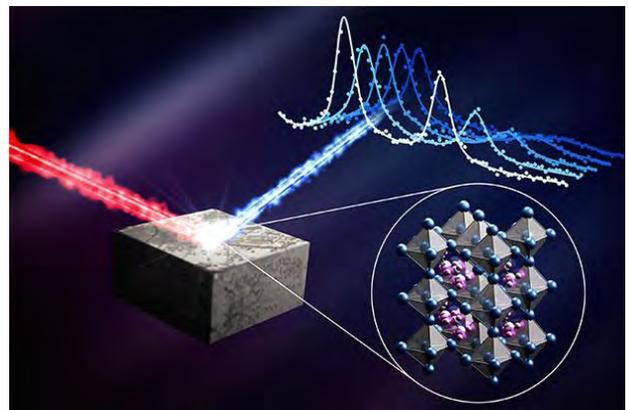
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## Carbon dots from human hair boost solar cells

Date: April 8, 2021

Published by: Sciencedaily

*Summary:* Researchers have used carbon dots, created from human hair waste sourced from a barbershop, to create a kind of 'Armor' to improve the performance of cutting-edge solar technology. QUT researchers have used carbon dots, created from human hair waste sourced from a Brisbane barbershop, to create a kind of "armor" to improve the performance of cutting-edge solar technology. [Read More](#)





## Long-term consequences of CO2 emissions

*Date:* April 16, 2021

*Published by:* Sciencedaily

*Summary:* According to a new study, the oxygen content in the oceans will continue to decrease for centuries even if all CO2 emissions would be stopped immediately. The slowdown of ocean circulation and the progressive warming of deeper water layers are responsible for this process. [Read More](#)

## Humans are directly influencing wind and weather over North Atlantic

The findings suggest that winters in Europe and in eastern US may get warmer and wetter

*Date:* April 19, 2021

*Published by:* Sciencedaily

*Summary:* A new study provides evidence that humans are influencing wind and weather patterns across the eastern United States and Western Europe by releasing CO2 and other pollutants into Earth's atmosphere. [Read More](#)



## Common plants and pollinators act as anchors for ecosystems

*Date:* April 19, 2021

*Published by:* Sciencedaily

*Summary:* 'Generalist' plants and pollinators play a crucial role in maintaining biodiversity and may also serve as buffers against some impacts of climate change, finds new research. The findings provide valuable insights for prioritizing the conservation of species that contribute to the strength of ecological communities. [Read More](#)



## Fiber optic cable monitors micro seismicity in Antarctica

*Date:* April 23, 2021

Published by: Sciencedaily

*Summary:* Researchers shared how they are using fibre optic cable to detect the small earthquakes that occur in ice in Antarctica.

At the Seismological Society of America's 2021 Annual Meeting researchers shared how they are using fiber optic cable to detect the small earthquakes that occur in ice in Antarctica. [Read More](#)



## Study first to explore combined impacts of fishing and ocean warming on fish populations

*Date:* April 27, 2021

Published by: Sciencedaily

*Summary:* The combined effect of Rapid Ocean warming and the practice of targeting big fish is affecting the viability of wild populations and global fish stock says new research.

The combined effect of Rapid Ocean warming and the practice of targeting big fish is affecting the viability of wild populations and global fish stock says new research by the University of Melbourne and the University of Tasmania. [Read More](#)

## Methane release rapidly increases in the wake of the melting ice sheets

*Date:* April 29, 2021

Published by: Sciencedaily

*Summary:* Melting of the Arctic ice sheets caused rapid methane release from the ocean floor during the last two deglaciations, according to a new study. A similar release likely to happen today, and should be included in climate models, say the scientists. Ice ages are not that easy to define. It may sound intuitive that an ice age represents a frozen planet, but the truth is often more nuanced than that.

[Read More](#)



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## *Climate Change Research Institute*

*C- 85 Shivalik  
New Delhi 110017, India  
Email: [maltigoel2008@gmail.com](mailto:maltigoel2008@gmail.com),  
[contactus@ccri.in](mailto:contactus@ccri.in)  
URL: [www.ccri.in](http://www.ccri.in)*

*If you wish to apply for the membership, please feel free to reach us out at [info.acbccs@gmail.com](mailto:info.acbccs@gmail.com),  
[contactus@ccri.in](mailto:contactus@ccri.in).*