



GOVERNMENT OF PUDUCHERRY

PUDUCHERRY POLLUTION CONTROL COMMITTEE

ENVIS HUB NEWSLETTER

**STATUS OF AMBIENT AIR QUALITY IN THE U.T OF
PUDUCHERRY FOR THE YEAR 2020**

APR - JUN, 2021

VOLUME XII-II

SUPPORTED BY

**Ministry of Environment, Forest & Climate Change
Government of India
New Delhi**

EDITORIAL BOARD

Smt. R. SMITHA, I.A.S.,
Member Secretary (PPCC)

Shri. P. VIPIN BABU
Scientist / ENVIS Co-ordinator

TEXT EDITORS

Smt. G. RUKMANI
Scientist (DSTE)

Smt. J. NITHIYA
Programme Officer

Shri. S. JAGAN KUMAR
Information Officer

Shri. S. DHINESH
Information Technology Officer

Shri. N. SRIDHAR
DEO / Para Taxonomist

ENVIS CENTRE Puducherry ENVIS Hub

Puducherry Pollution Control Committee
3rd Floor, PHB Building
Anna Nagar
Puducherry - 605 005.

E-Mail : envis.pon@nic.in

Website: <https://dste.py.gov.in/envispdy/>

Phone : 0413 - 2201256

CONTENTS

- 1. Introduction** ...1
- 2. National Ambient Quality Monitoring Programme** Air ...2
- 3. Annual Average Concentration of Pollutants for the year 2020** ...3
- 4. Monthly and Annual Average concentration of pollutants for the year 2020 in Puducherry** ...5
- 5. Monthly and Annual Average concentration of pollutants for the year 2020 in Karaikal** ...6
- 6. Environment Events** ...7



Introduction

U.T of Puducherry consist of the four former colonies of French India namely Puducherry, Karaikal, Yanam and Mahe. Puducherry and Karaikal regions are located in South – Eastern Coromandel Coast of India, surrounded by Tamil Nadu state. Yanam surrounded by Andhra Pradesh state is located farther north along the eastern coast in the delta region of the River Godavari and Mahe is located on the western Malabar Coast, surrounded by Kerala state. The Union Territory of Puducherry comprises an area of 492 Sq. Kms.

Air Pollution

The atmosphere is a layer of gases surrounding the earth, which mainly composes nitrogen and oxygen (99% by volume) and other gases including water vapor contribute to about 1%. Rapid urbanization and industrialization have imposed additional elements/compounds to the clean air causing an increase in pollution. In order to prevent, control and abate air pollution, the Air (Prevention and Control of Pollution) Act was passed in 1981. According to Section 2(b) of Air (Prevention and Control of Pollution) Act, 1981 'air pollution' has been defined as 'the presence in the atmosphere of any air pollutant.' As per Section 2(a) of Air (Prevention and Control of Pollution) Act, 1981 'air pollutant' has been defined as 'any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment'. Therefore, ambient air quality standard is developed as a policy guideline that regulates the effect of human activity upon the environment so that pollutant discharge into the air can be regulated.

National Ambient Air Quality Standards (NAAQS)

The objectives of air quality standards are:

- To show the levels of air quality necessary with an adequate margin of safety to protect the public health, vegetation and property.
- To assist in establishing priorities for abatement and control of pollutant level.
- To provide uniform yardstick for assessing air quality at national level.
- To indicate the need and extent of monitoring programme
- The MoEF & CC has notified the revised National Ambient Air Quality Standards on November 2009. The same can be viewed at http://cpcb.nic.in/National_Ambient_Air_Quality_Standards.php



National Ambient Air Quality Monitoring Programme

The ambient air quality is monitored at 880 locations in towns and industrial areas across 28 States and 8 Union Territories by Central Pollution Control Board (CPCB) in association with the concerned State Pollution Control Boards and Pollution Control committees for U.Ts under National Air Monitoring Programme (NAMP). SO_2 , NO_2 , and PM_{10} are the key parameters monitored under the NAMP.

Locations of Air Quality Monitoring

Puducherry Pollution Control Committee has carried out manual Ambient Air Quality Monitoring at the following six locations in the U.T. of Puducherry under the 'National Air Quality Monitoring Programme' (NAMP) of Central Pollution Control Board (CPCB). The monitoring of pollutants is carried out for 24 hours (4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) with a frequency of twice a week.

Sl.No.	Location Name	Location Type	Source of Pollution
1	Local Administrative Department Building (LAD), Suffren Street, Puducherry.	Residential area	Vehicle emission and natural dust from road
2	Dept of Science Technology and Environment Building (DSTE), Anna Nagar, Puducherry.	Residential cum Commercial area	Vehicle emission and natural dust from road
3	Electricity Department, Mettupalayam Industrial Estate (PIPDIC), Puducherry.	Industrial area	Industrial Pollution and vehicular pollution
4	B.Ed. College, Nehru Nagar, Karaikal	Residential area	Vehicle emission and natural dust from road
5	Govt. Tourist Home, Kovilpathu, Karaikal	Residential cum Commercial area	Vehicle emission and natural dust from road
6	Puducherry Power Corporation Ltd., (PPCL), Polagam, T.R.Pattinam, Karaikal	Industrial area	Industrial Pollution and vehicular pollution



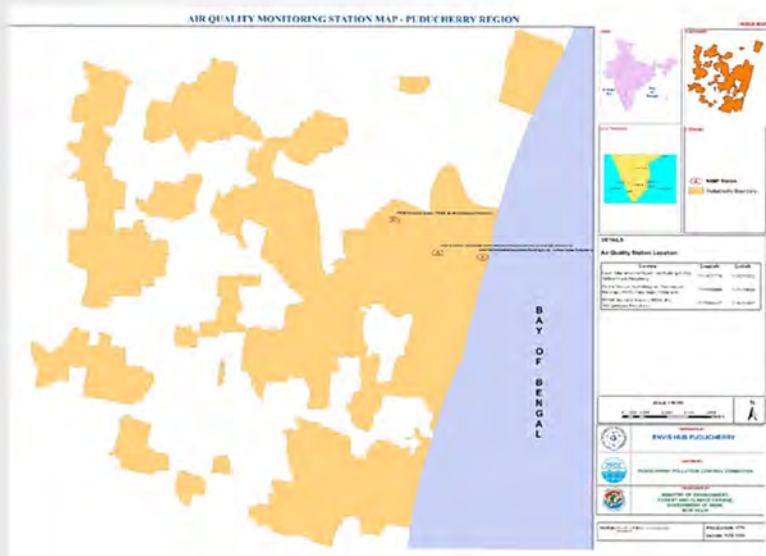


Figure 1: Map showing the monitoring stations along with station code located in Puducherry region

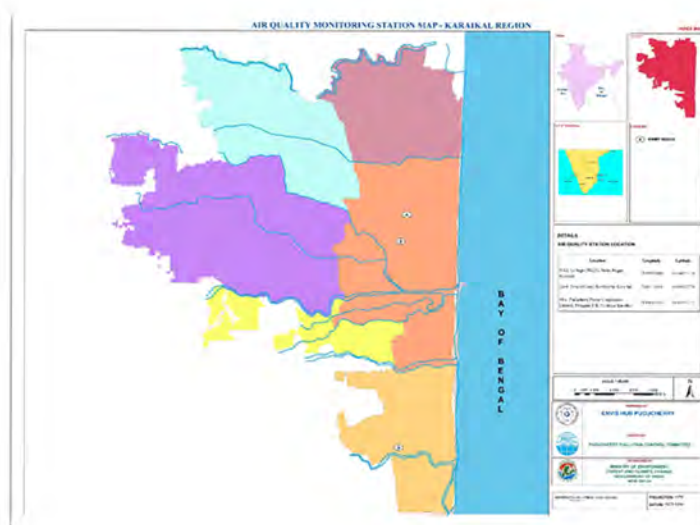


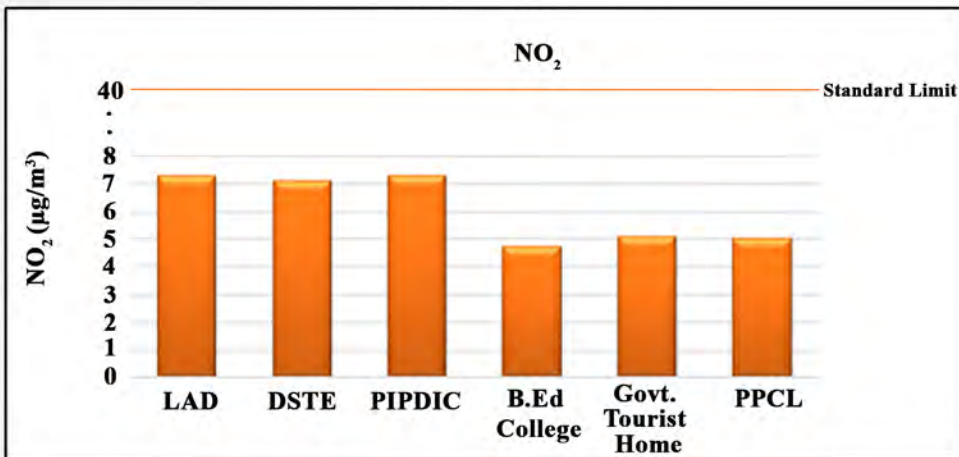
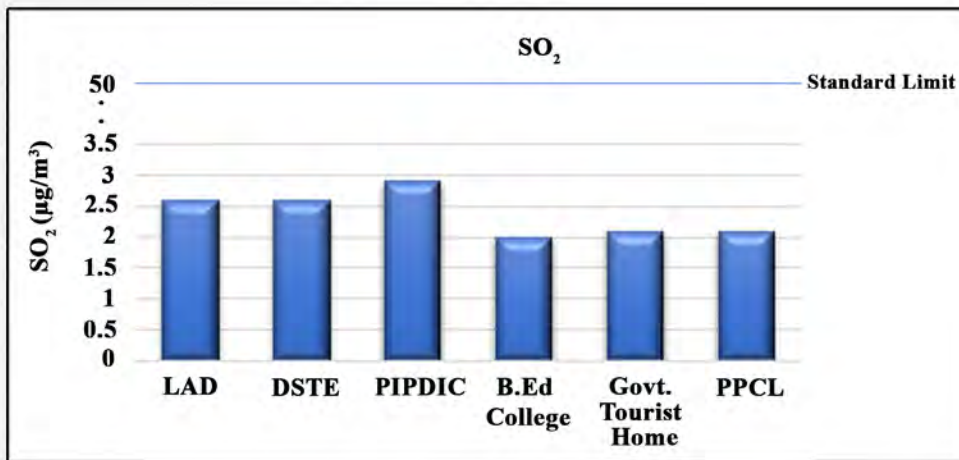
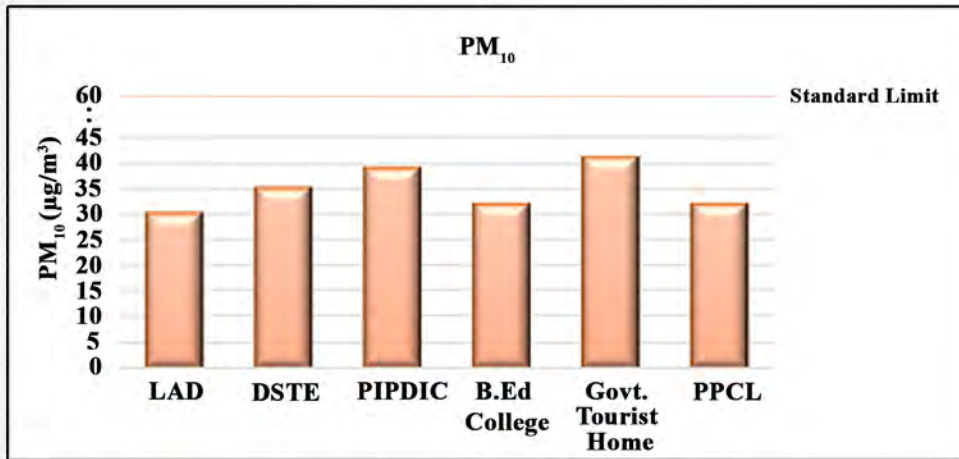
Figure 2: Map showing the monitoring stations along with station code located in Karaikal region

Annual average Concentration of Pollutant at the six monitored location in the U.T. of Puducherry

Sl.No.	Location Name	Pollutant in $\mu\text{g}/\text{m}^3$		
		PM ₁₀	SO ₂	NO ₂
1	Local Administrative Department	30	2.6	7.3
2	Dept of Science Technology and Environment	35	2.6	7.1
3	Electricity Department (PIPDIC)	39	2.9	7.3
4	B.Ed. College	32	2.0	4.7
5	Govt. Tourist Home	41	2.1	5.1
6	Puducherry Power Corporation Ltd., (PPCL)	32	2.1	5.0
Standard		60	50	40

Source: Puducherry Pollution Control Committee (PPCC)





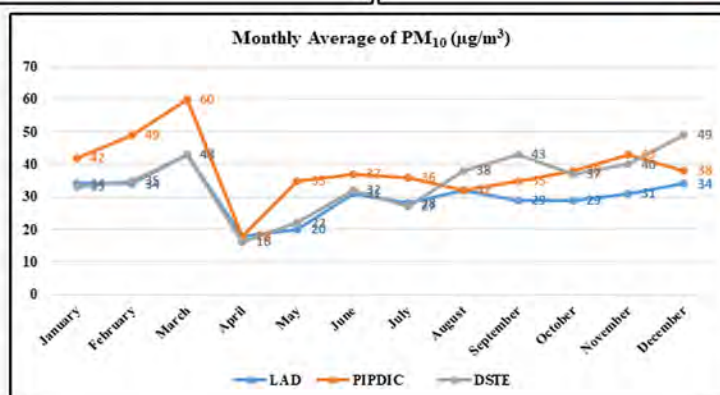
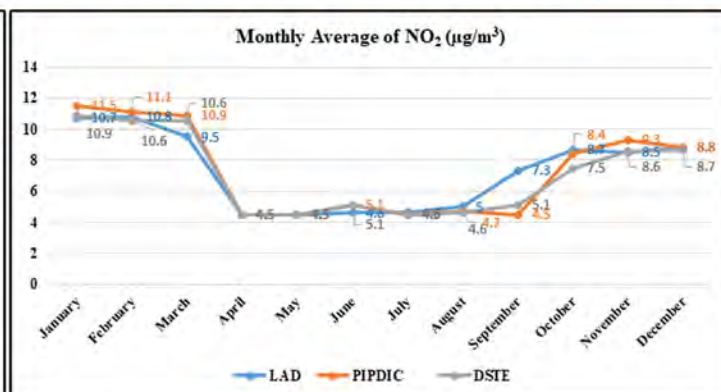
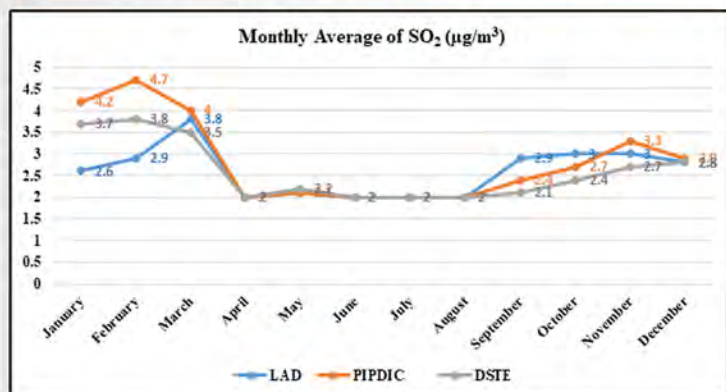
Note:

- The monitoring result reveals that 24 Hourly average concentration of Particulate Matter (Size less than 10 µm) – PM₁₀ measured in all the six locations are within the prescribed standard limit of 100 µg/m³.
- Annual average concentration of PM₁₀ measured in all the six locations are in the ranges of 30 – 41 (µg/m³) which is within the prescribed standard limit of 60 µg/m³.
- The annual average concentrations of the pollutants viz., SO₂ & NO₂ in all the six locations are within the prescribed standard limits.



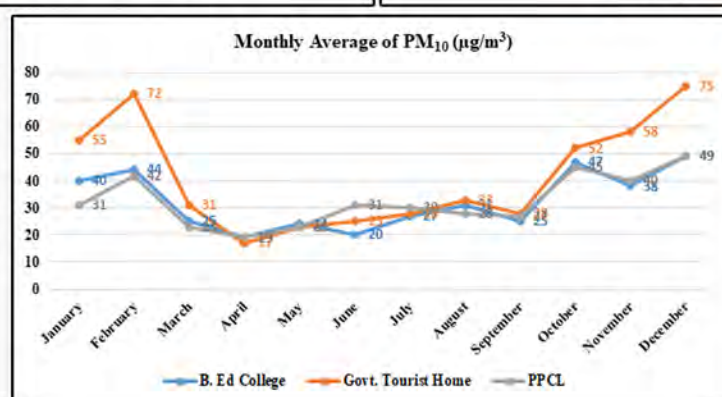
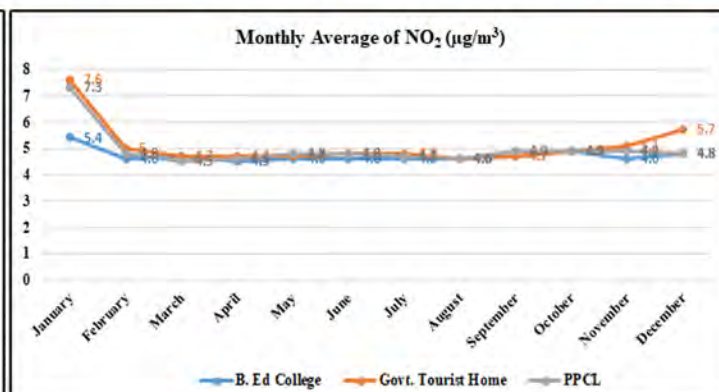
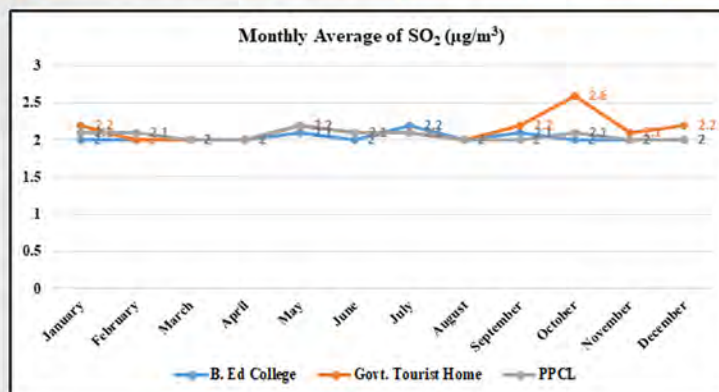
Monthly and Annual Average concentration of pollutants in ambient air monitored under National Air Quality Monitoring Programme for the year 2020 in Puducherry

Month	LAD			PIPDIC			DSTE		
	SO ₂	NO ₂	RSPM	SO ₂	NO ₂	RSPM	SO ₂	NO ₂	RSPM
January	2.6	10.7	34	4.2	11.5	42	3.7	10.9	33
February	2.9	10.8	34	4.7	11.1	49	3.8	10.6	35
March	3.8	9.5	43	4.0	10.9	60	3.5	10.6	43
April	2.0	4.5	18	2.0	4.5	18	2.0	4.5	16
May	2.1	4.5	20	2.1	4.5	35	2.2	4.5	22
June	2.0	4.6	31	2.0	5.1	37	2.0	5.1	32
July	2.0	4.6	28	2.0	4.5	36	2.0	4.5	27
August	2.0	5.0	32	2.0	4.7	32	2.0	4.6	38
September	2.9	7.3	29	2.4	4.5	35	2.1	5.1	43
October	3.0	8.7	29	2.7	8.4	38	2.4	7.5	37
November	3.0	8.5	31	3.3	9.3	43	2.7	8.6	40
December	2.8	8.8	34	2.9	8.8	38	2.8	8.7	49
Annual Average	2.6	7.3	30	2.9	7.3	39	2.6	7.1	35
Standard Limit	50	40	60	50	40	60	50	40	60



Monthly and Annual Average concentration of pollutants in ambient air monitored under National Air Quality Monitoring Programme for the year 2020 in Karaikal

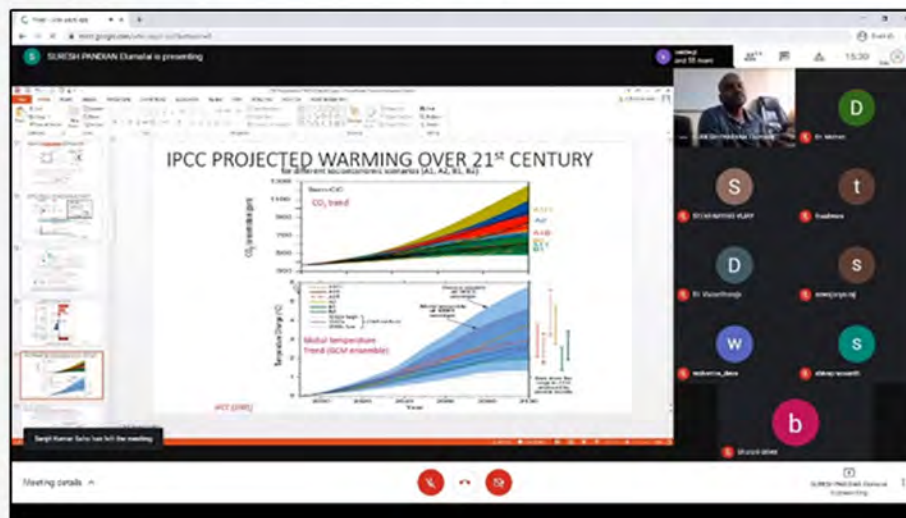
Month	B. Ed College			Govt. Tourist Home			PPCL		
	SO ₂	NO ₂	RSPM	SO ₂	NO ₂	RSPM	SO ₂	NO ₂	RSPM
January	2.0	5.4	40	2.2	7.6	55	2.1	7.3	31
February	2.0	4.6	44	2.0	5.0	72	2.1	4.8	42
March	2.0	4.7	25	2.0	4.7	31	2.0	4.5	23
April	2.0	4.5	19	2.0	4.7	17	2.0	4.6	19
May	2.1	4.6	24	2.2	4.7	23	2.2	4.8	23
June	2.0	4.6	20	2.1	4.8	25	2.1	4.8	31
July	2.2	4.6	27	2.1	4.8	28	2.1	4.7	30
August	2.0	25	25	25	25	25	25	25	25
September	2.1	4.7	25	2.2	4.7	28	2.0	4.9	27
October	2.0	4.9	47	2.6	4.9	52	2.1	4.9	45
November	2.0	4.6	38	2.1	5.1	58	2.0	4.9	40
December	2.0	4.8	49	2.2	5.7	75	2.0	4.8	49
Annual Average	2.0	4.7	32	2.1	5.1	41	2.1	5.0	32
Standard Limit	50	40	60	50	40	60	50	40	60



Puducherry ENVIS Hub Environment Events

Earth Day, 2021

Webinar was conducted on the occasion of Earth Day on 22.04.2021, wherein Dr. Suresh Pandian Elumalai, Assistant Professor, Department of Environmental Science & Engineering, Indian Institute of Technology (ISM), Dhanbad, Jharkhand delivered expert lecture on 'Quantification of Carbon Emission to the Atmosphere and its Mitigation'. The public and students participated in this event.



Awareness Posters & Pamphlets



International Day for Biological Diversity, 2021

Dr. C. Sivaperuman, Scientist – E, ZSI, Andaman & Nicobar Regional Centre, MoEF&CC delivered expert lecture on “Marine Faunal Diversity of India” on International Day for Biological Diversity on 22.05.2021. He highlighted the activities carried out in Zoological Survey of India, Marine Coastal Biodiversity, types of marine faunal diversity, Marine Protected areas and threats to marine faunal diversity. The public and students participated in this event.

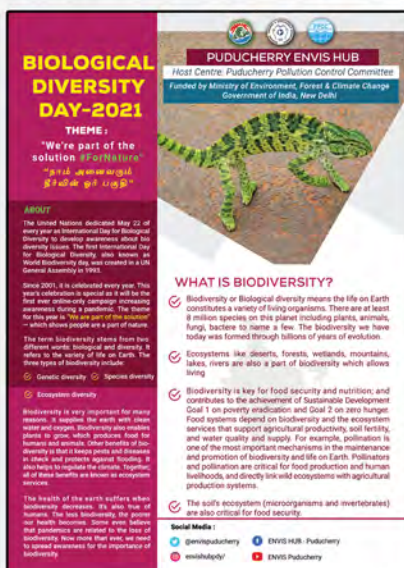


Virtual Drawing Competition on IDBD, 2021

Conducted Drawing competition for the School Students on the topic “We’re part of the solution”.



Awareness Posters & Pamphlets



Released Infographics during Environment related Events

World Migratory Bird Day on 08.05.2021

Awareness posters were released digitally during the occasion of World Migratory Bird Day on 08.05.2021, to highlight the importance of conserving and restoring the ecological connectivity and integrity of ecosystems that support the natural movements of migratory birds and that are essential for their survival and well-being.



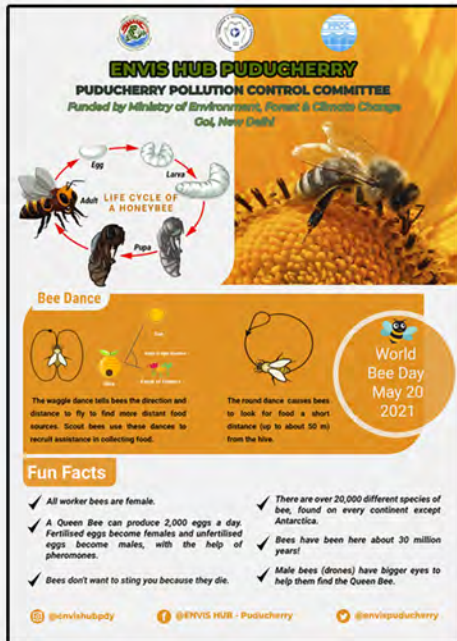
National Technology Day on 11.05.2021

Awareness poster was released digitally on the occasion of National Technology Day on 11.05.2021, to mark the achievements and contributions made in the field of science and technology.



World Bee Day on 20.05.2021

Awareness poster & pamphlet were released digitally on the occasion of World Bee Day on 20.05.2021, to raise awareness of the importance of pollinators, the threats faced by the bees and their contribution to sustainable development.



World Turtle Day Celebration on 23.05.2021



Awareness posters and pamphlets were released digitally during World Turtle Day Celebration on 23.05.2021 to spread the message about protection and conservation of the turtles.



Various Activities on World Environment Day

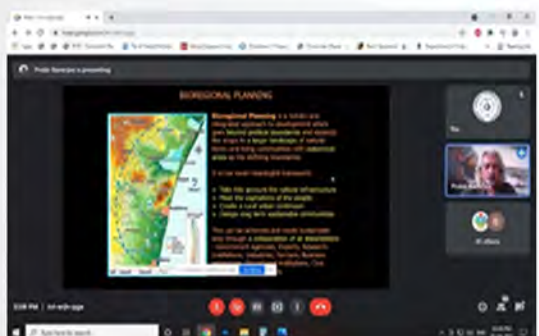
Webinar & Panel Discussion



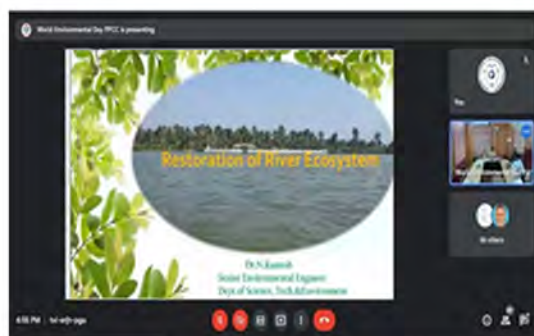
Dr. G. Poyyamoli, Professor (Rtd.), Department of Ecology & Environmental Science, Pondicherry University, delivered the expert talk on "Understanding Ecosystems of Puducherry and their restoration challenges"



Er. S. Arul, INTACH, discussed on Urban Ecosystem. He emphasized on the restoration of heritage buildings & urban green public places in Puducherry.



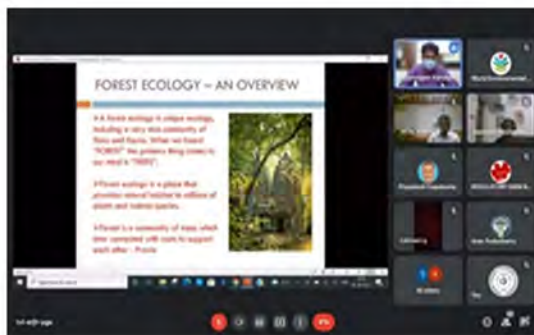
Restoration of Tanks and Ponds Ecosystem in Puducherry was discussed by Probir Banerjee, Pondy CAN.



Dr. N. Ramesh, Senior Environmental Engineer, DSTE, discussed on the "Restoration of River Ecosystem" in Puducherry.



Dr. Selvamanikandan, Puducherry Environment and Mangrove Forest Development Protection Society, discussed on Mangrove Ecosystem.



Shri. L. Pravin Kumar, Annapradokshana Charitable Trust discussed on Forest Ecosystem and the Miyawaki forest creation.



Various Activities on World Environment Day

Conducted Online Competition on World Environment Day, 2021

Puducherry ENVIS Hub conducted virtual competition i.e., Quiz, Poem Writing (Tamil & English), Story Telling and Poster Making for the students and public of Pan India on World Environment Day on 05.06.2021



Infographics released on World Environment Day on 05.06.2021

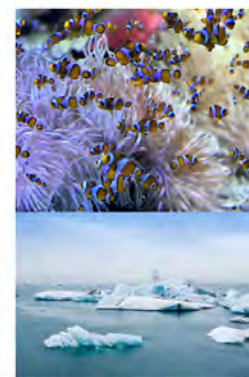
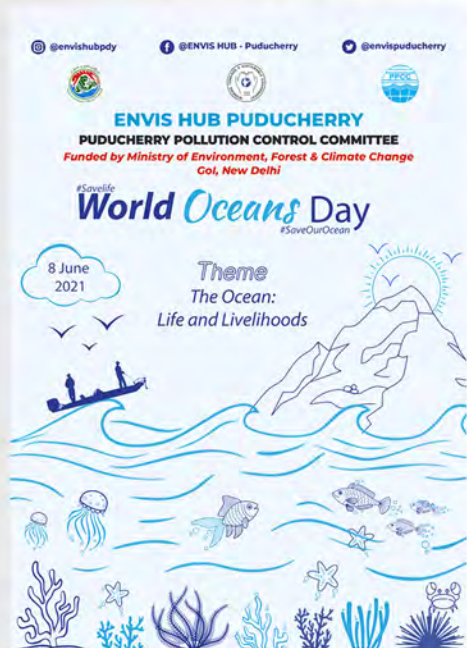


World Oceans Day, 2021

Dr. S. Bragadeeswaran, Deputy Director- cum Associate Professor & principal investigator, Directorate of Research and Development, Biotoxicology laboratory, CAS in Marine Biology, Annamalai University, Parangipettai, Tamil Nadu delivered expert lecture on "The Ocean: Life and Livelihoods" on World Ocean Day on 08.06.2021. He highlighted the ocean & biodiversity, types of marine biodiversity, marine organism, link between biodiversity & livelihoods, drugs from the sea and causes of marine biodiversity and the way to conserve marine biodiversity. The public and students participated in this event.



Awareness Posters & Pamphlets



What we can do to help?

On World Oceans Day, wear blue, go on a march, find a beach or river clean-up near you, organise a local event, print a poster and put it in your window, or use the hashtag #WorldOceansDay on social media. There are so many things you can do on 8 June to join in the celebrations, to remind people about the importance of the ocean in our lives and to make a difference!

Sustains us

The ocean provides oxygen, food and medicine. It's the source of recreation, discovery, identity and culture.

- More than 3 billion people rely on food from the ocean as a source of protein and nutrition.

Stabilises the climate

It absorbs carbon dioxide and heat.

- The ocean absorbs 93% of heat caused by human activity globally.
- About 25% of carbon dioxide (CO₂) emissions from human activities are absorbed by the ocean.

Leads to greater prosperity

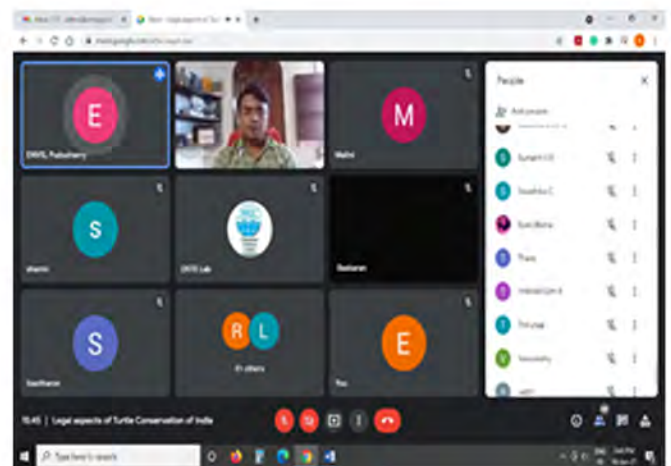
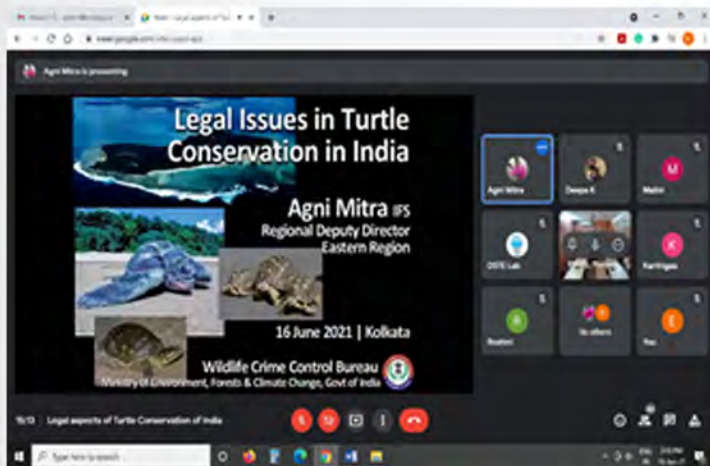
The ocean is an engine of livelihoods, transport, commerce, and energy production.

- A healthy ocean contributes \$1.5 trillion to the global economy annually and has an estimated net asset value of \$24 trillion.
- The ocean is the source of millions of jobs in fishing, tourism, transportation, and it powers economic growth.



World Sea Turtle Day

Agni Mitra, IFS., Regional Deputy Director, Wildlife Crime Control Bureau, Nizam Palace, Kolkata, West Bengal delivered expert lecture on 'Legal Aspects of Turtle Conservation in India' on World Sea Turtle Day on 16.06.2021. He highlighted Sea Turtle conservation snapshot in Nicobar, introduction to trade of sea turtle and its products, trade route & sensitive area, Modus Operandi and the conservation of turtle. The public and students participated in this event.



Awareness Posters & Pamphlets



Tweet by MoEF&CC



Prakash Javadekar and 3 others

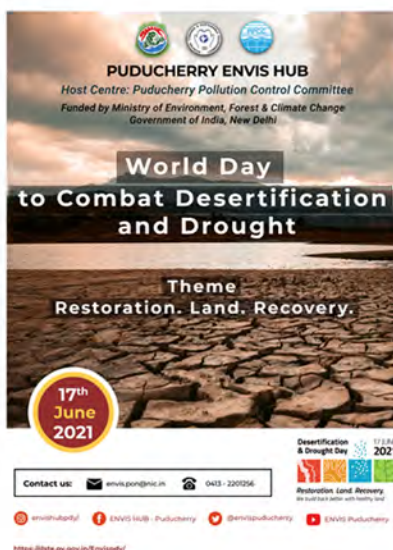
7:20 pm · 17 Jun 21 · Twitter for iPhone



Released Infographics during Environment related Events

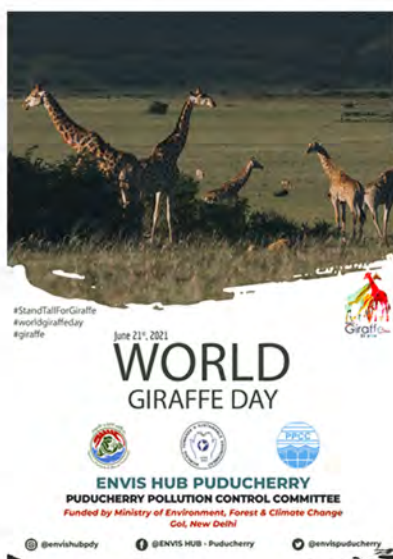
World Day to Combat Desertification and Drought on 17.06.2021

Awareness pamphlet was released digitally on World Day to Combat Desertification and Drought on 17th June, 2021, to raise awareness of the presence of desertification and drought, highlighting methods of preventing desertification and recovering from drought.



World Giraffe Day on 21.06.2021

Awareness pamphlet was released digitally on World Giraffe Day on 21st June, 2021, to raise awareness about the protection of this amazing animal.



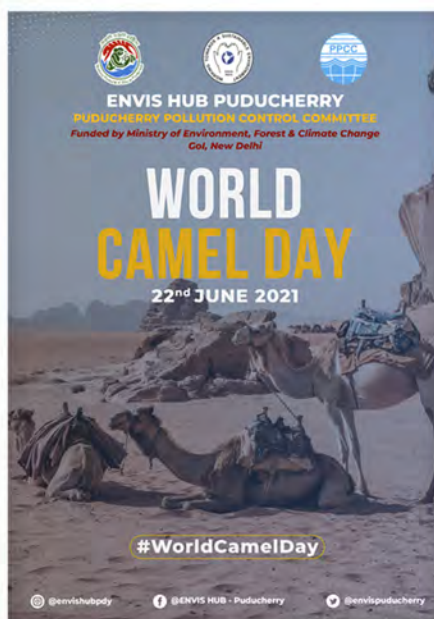
World Rainforest Day on 22.06.2021

Awareness pamphlet was released digitally on World Rainforest Day on 22nd June, 2021, to raise awareness about the preservation of rainforests.



World Camel Day on 22.06.2021

Awareness pamphlet was released digitally on World Camel Day on 22nd June, 2021, to spread the message of protecting and conserving the Camel.



National Ambient Air Quality Standard

S. No.	Pollutant	Time Weighted average	Concentration in Ambient Air		Methods of Measurement
			Industrial, Residential, Rural and Other Area	Ecologically sensitive area (notified by Central Govt.)	
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual*	50	20	- Improved West and Geake - Ultraviolet fluorescence
		24 hours**	80	80	
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
		24 hours**	80	80	
3	Particulate Matter (size less than 10 µm) or PM ₁₀ µg/m ³	Annual*	60	60	- Gravimetric - TOEM - Beta attenuation
		24 hours**	100	100	
4	Particulate Matter (size less than 2.5 microns) or PM _{2.5} µg/m ³	Annual*	40	40	- Gravimetric - TOEM - Beta attenuation
		24 hours**	60	60	
5	Ozone (O ₃) µg/m ³	8 hours **	100	100	- UV photometric - Chemiluminescence - Chemical method
		1 hour **	180	180	
6	Lead (Pb) µg/m ³	Annual*	0.5	0.5	- ASS / ICP method after sampling on EPM 2000 or equivalent filter paper - ED – XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m ³	8 hours**	2	2	Non Dispersive Infra RED (NDIR) Spectroscopy
		1 hour**	4	4	
8	Ammonia (NH ₃) µg/m ³	Annual*	100	100	- Chemiluminescence - Indophenol blue method
		24 hours**	400	400	
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	5	5	- Gas chromatography based continuous analyser - Adsorption and desorption followed by GC analysis
10	Benzo (a) Pyrene (BaP) – particulate phase only ng/m ³	Annual*	1	1	Solvent extraction followed by HPLC / GC analysis
11	Arsenic (As) ng/m ³	Annual*	6	6	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni) ng/m ³	Annual*	20	20	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.



AIR QUALITY INDEX

	Good	0 - 50	
	Satisfactory	51 - 100	
	Moderate	101 - 200	
	Poor	201 - 300	
	Very Poor	301 - 400	
	Severe	>401	

CONTACT US

ENVIS HUB PUDUCHERY

3rd Floor, Housing Board Complex,
Anna Nagar, Nellithope
Puducherry – 5.



ENVIS Puducherry



<http://dste.py.gov.in/envispdy/>



(0413) 2201256