



# **GOVERNMENT OF PUDUCHERRY**

## **PUDUCHERRY POLLUTION CONTROL COMMITTEE**

### **— ENVIS HUB NEWSLETTER —**

**VOLUME XIII -III**

**JUL - SEP 2020**

**TREND  
ANALYSIS  
OF  
AIR QUALITY  
DURING  
LOCKDOWN**

**TREND  
ANALYSIS  
OF AIR QUALITY  
OF  
BHOGI  
FESTIVAL  
(2016 - 2020)**



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



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# The status of Ambient Air Quality during Lockdown period April 2020 and comparison in the same period last year, 2019 in the UT of Puducherry

Puducherry Pollution Control Committee (PPCC) has carried out manual ambient air quality monitoring at the following six locations to assess air pollution status during the lock down owing to Covid19 pandemic in the U.T. of Puducherry. Air Quality assessment was done for 24 hours (4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) with a frequency of twice a week.

## Location of NAMP Stations

| Sl. No. | Location Name                                                                        | Location Type                   | Source of Pollution                            |
|---------|--------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------|
| 1       | Local Administrative Department Building (LAD), Suffren Street, Puducherry.          | Residential area                | Vehicular emission and natural dust from road. |
| 2       | Dept. of Science Technology and Environment Building (DSTE), Anna Nagar, Puducherry. | Residential cum Commercial area | Vehicular 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                | Vehicular emission and natural dust from road. |
| 5       | Govt. Tourist Home, Kovilpathu, Karaikal.                                            | Residential cum Commercial area | Vehicular emission and natural dust from road. |
| 6       | PPCL, Polagam, T.R. Pattinam, Karaikal.                                              | Industrial area                 | Industrial Pollution and vehicular pollution.  |

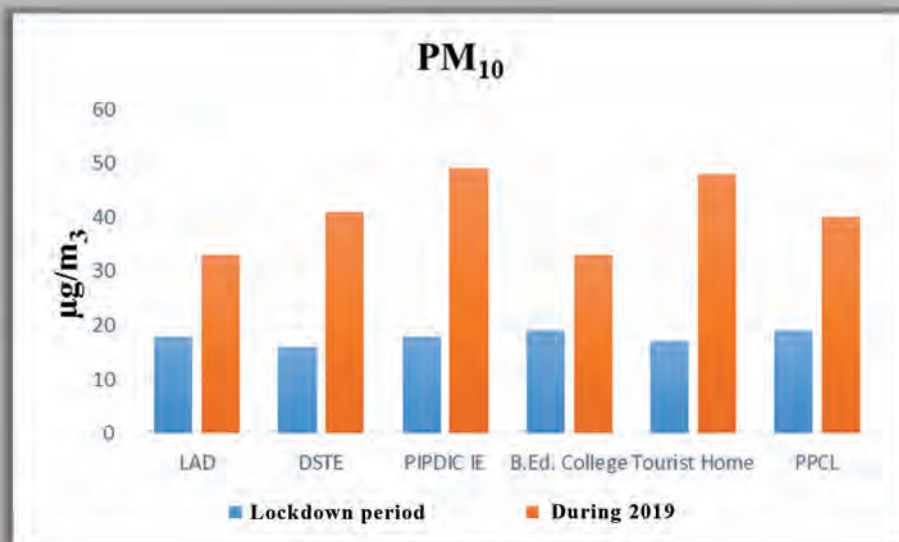
## The parameters monitored

-  PM<sub>10</sub> (Particulate Matter less than 10µm)
-  Sulphur dioxide(SO<sub>2</sub>)
-  Nitrogen dioxide(NO<sub>2</sub>)



24 Hours monthly average concentration of PM<sub>10</sub> in each of the above mentioned monitoring stations during the lockdown period (April 1<sup>st</sup> to April 30<sup>th</sup>) and during the year 2019 (April 1<sup>st</sup> to April 30<sup>th</sup>) were compared and the results are as below:

| Location Name                                                                        | Lockdown period 2020<br>(April 1 <sup>st</sup> to April 30 <sup>th</sup> ) | 2019<br>(April 1 <sup>st</sup> to April 30 <sup>th</sup> ) | % reduction |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------|-------------|
| Local Administrative Department Building (LAD), Suffren Street, Puducherry.          | 18                                                                         | 33                                                         | 45.5        |
| Dept. of Science Technology and Environment Building (DSTE), Anna Nagar, Puducherry. | 16                                                                         | 41                                                         | 61          |
| Electricity Department, Mettupalayam Industrial Estate (PIPDIC), Puducherry.         | 18                                                                         | 49                                                         | 63.2        |
| B.Ed. College, Nehru Nagar, Karaikal.                                                | 19                                                                         | 33                                                         | 42.4        |
| Govt. Tourist Home, Kovilpathu, Karaikal.                                            | 17                                                                         | 48                                                         | 64.6        |
| PPCL, Polagam, T.R. Pattinam, Karaikal.                                              | 19                                                                         | 40                                                         | 52.5        |



Graphical representation depicts the 24 hourly average concentration of PM<sub>10</sub> measured at six locations in the U.T of Puducherry during lockdown period from April 1<sup>st</sup> to April 30<sup>th</sup> and during the year 2019 in the same period.



The Percentage reduction of PM<sub>10</sub> in terms of concentration in the six location ranged from 42.4% to 64.6% during the lock down period when compared to the same period last year. The minimum and maximum concentration of PM<sub>10</sub> during the lock down period was 16 µg/m<sup>3</sup> and 19 µg/m<sup>3</sup> respectively. Whereas, the minimum and maximum concentration of PM<sub>10</sub> during the same period during 2019 was 33 µg/m<sup>3</sup> and 49 µg/m<sup>3</sup> respectively.

It is inferred from the above data that there was significant improvement in air quality during lock downperiod.

## Observation and Results:

-  The monitoring results reveal that the 24 Hourly average concentration of Particulate Matter (Size less than 10 µm) - PM<sub>10</sub> measured in the six locations were within the prescribed 24 hourly average standard limit of 100µg/m<sup>3</sup>.
-  Monthly average of the 24 hourly average concentration of PM<sub>10</sub> measured in the six locations were in the range of 16 – 19 (µg/m<sup>3</sup>) during the lock down period. The Air Quality Index during the lock down period came under Good category (100%) at all the location in the UT of Puducherry.
-  The concentration of SO<sub>2</sub> and NO<sub>2</sub> values were Below Detectable Level in most of the 4 hours sample and only few of the 4 hours sample had a slightly higher concentration which was still close to the Below Detectable value of SO<sub>2</sub> and NO<sub>2</sub> i.e 2.0 µg/m<sup>3</sup> and 4.5 µg/m<sup>3</sup> respectively.
-  The 24 hourly maximum concentration of SO<sub>2</sub> and NO<sub>2</sub> during the lock down period was 2.1 µg/m<sup>3</sup> and 5.2 µg/m<sup>3</sup> respectively. Whereas, the maximum concentration of SO<sub>2</sub> and NO<sub>2</sub> during the same period last year was 5.4 µg/m<sup>3</sup> and 49 µg/m<sup>3</sup> respectively.
-  The improvement in the air quality during the lock down period was due to retarded anthropogenic, industrial and construction activities and also because of very few vehicles plying on the roads due to lockdown.





# AMBIENT AIR QUALITY STATUS ON THE DAY OF BHOGI (2016 – 2020)

Pongal is celebrated on the first day of the Tamil month Thai and signifies the end of the harvest season. Its history dates back to the Sangam age, since 200 B.C. to 300 A.D. Pongal Festival has great association with harvest and hence it is celebrated as Harvest Festival in Tamil Nadu (Tamil Speaking people) and it marks the end of harvesting. Bhogi is the first day of Pongal and is celebrated in honor of the gods of clouds and rains to provide abundance of harvest, thereby bringing plenty and prosperity to the land.

A ritual observed on this day is Bhogi bonfire, when useless household articles are thrown into fire made of wood and cow-dung cakes. The significance of the bonfire, wherein agricultural wastes and firewood are burnt to keep warm during the last lap of winter. However, in recent times this ritual of bonfire causes immense air pollution due to burning plastics and rubber tyres as agriculture waste is not available in cities. This results in the release of carbon monoxide, carbon di-oxide and other obnoxious gases into the atmosphere, exposure to which results in irritation of eye, nose, throat, skin and respiratory diseases besides many other health hazards.

**“Celebrate smokeless  
Bhogi, Keep the  
Environment Clean”**

In spite of the awareness programmes conducted, this practice still doesn't cease to exist. There are also court order against burning of plastics and tyres and the Environment (Protection) Act, 1986, section 15, specifies penal action for persons who causes air pollution. In spite of all these efforts, there are people who still burn plastic and tyres. The bhogi bonfires increase particulate matter in air and cause several diseases. There is also a low visibility level on Bhogi day due to the smog formation.

Puducherry Pollution Control Committee(PPCC) has been conducting awareness activity through media and requesting the public to celebrate Bhogi in a smokeless and eco-friendly way. Awareness materials has also been distributed to the students through the Education Department and to the public about the ill effect of burning wastes, plastic and tyres and also about the impact it has on the environment.

Besides, PPCC has monitored the ambient air quality at Puducherry and Karaikal on the day of Bhogi. During monitoring, sporadic activity of burning of unwanted old article was noticed at some locations and the concerned people were advised not to carry out such activities and they responded affirmatively and put off the flame / smoke with water.

The monitoring report also revealed that there was an increase in concentration of PM<sub>10</sub> on the day of Bhogi and this might have be due to very high humidity, foggy conditions, low temperature and low wind speed (almost calm) in the early morning of the Bhogi day. These meteorological parameters does not favour easy diffusion of pollutants. However, the gaseous pollutants like Sulphur di-oxide (SO<sub>2</sub>) and Nitrogen di-oxide (NO<sub>2</sub>) are well within the prescribed standard limit.



The concentration of Pollutants monitored on the day of Bhogi in Puducherry and Karaikal during the period 2016 - 2020 are as below:

| Year | Location     | Pollutants Concentration ( $\mu\text{g}/\text{m}^3$ ) |                 |                 |
|------|--------------|-------------------------------------------------------|-----------------|-----------------|
|      |              | PM <sub>10</sub>                                      | SO <sub>2</sub> | NO <sub>2</sub> |
| 2016 | Anna Nagar   | 137                                                   | 2.9             | 15.7            |
|      | Mettupalayam | 154                                                   | 63.3            | 14.5            |
|      | Karaikal     | 63                                                    | 20.9            | 10.9            |
| 2017 | Anna Nagar   | 169                                                   | 5.6             | 9.0             |
|      | Mettupalayam | 148                                                   | 4.4             | 9.0             |
|      | Karaikal     | 65                                                    | 15.3            | 19.5            |
| 2018 | Anna Nagar   | 166                                                   | 20.9            | 7.8             |
|      | Mettupalayam | 110                                                   | 15.6            | 9.1             |
|      | Karaikal     | 73                                                    | 14.6            | 20.7            |
| 2019 | Anna Nagar   | 144                                                   | 9.0             | 4.5             |
|      | Mettupalayam | 172                                                   | 7.2             | 19.8            |
|      | Karaikal     | 159                                                   | 2.0             | 7.0             |
| 2020 | Anna Nagar   | 131                                                   | 2.1             | 13.5            |
|      | Mettupalayam | 125                                                   | 2.0             | 16.8            |
|      | Karaikal     | 85                                                    | 2.2             | 10.1            |

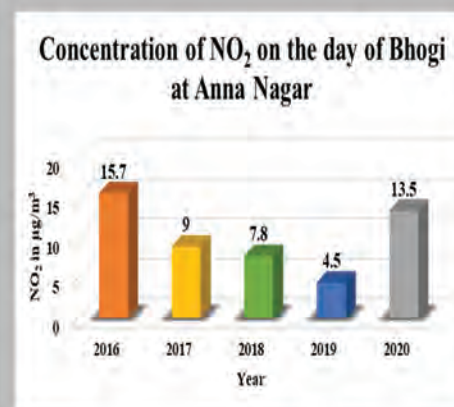
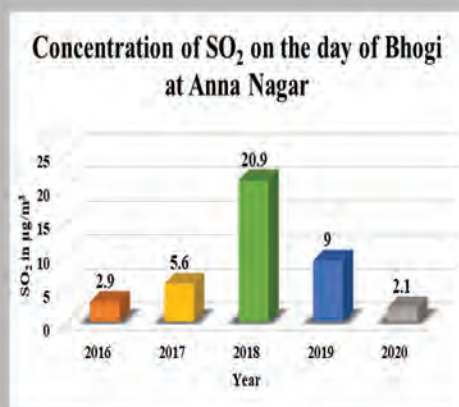
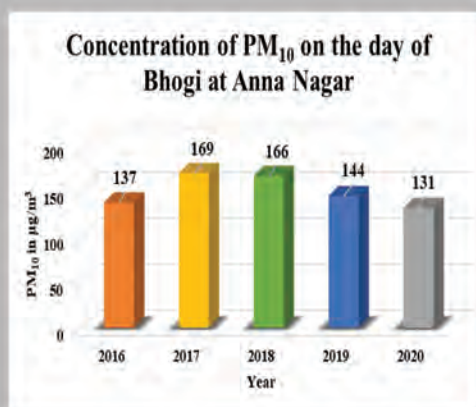
\* The Monitoring was carried out for 8 hourly

**Say **NO** to  
Burning of Waste**

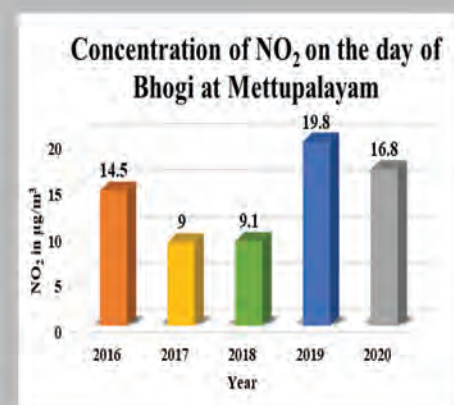
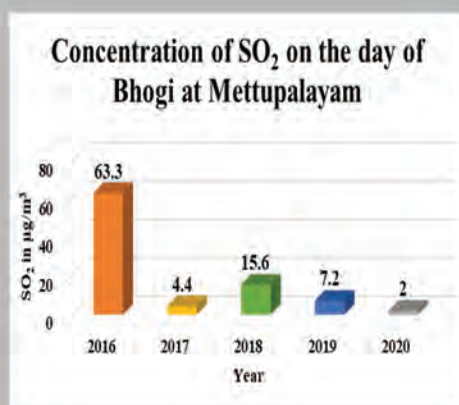
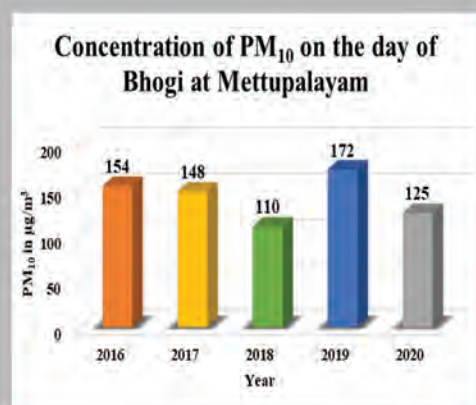
**Go **Green** !  
Breathe Clean!**

# Graphical Representation showing the trends of pollutant on the day of Bhogi (2016 – 2020) at the three monitored location.

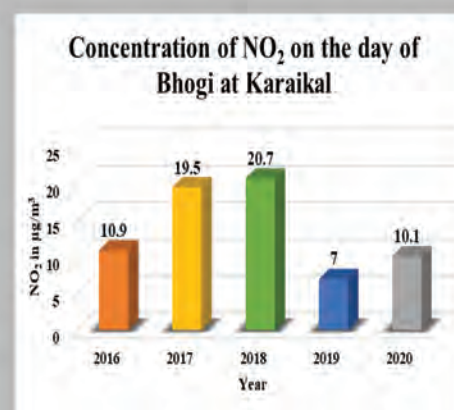
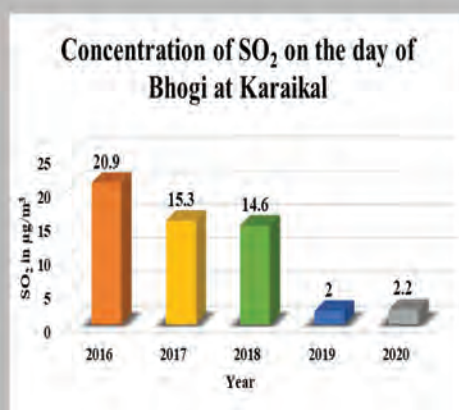
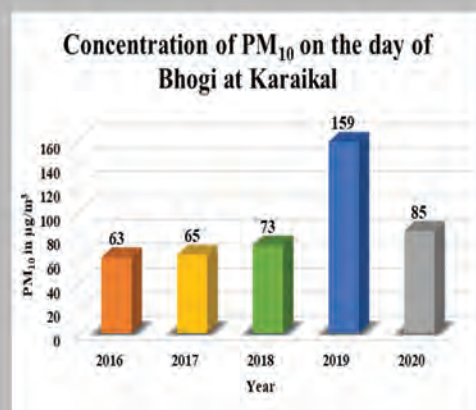
## Anna Nagar



## Mettupalayam



## Karaikal





## Action Taken



PPCC issued circular through Directorate of School Education to instruct all Heads of the educational institutions to conduct awareness programmes for the students about the ill-effect of burning wastes on Bhogi.



Press note and awareness material about the ill effects of burning wastes on Bhogi were published through Information and Publicity Department.



The ill effect of burning waste and its impact on Environment on the day of Bhogi was also explained to the public through mass communication viz., AIR and FM's.



Awareness lecture was delivered by ENVIS staff to School students about the ill-effect of burning wastes on bhogi.

**Celebrate Bhogi**  
in a eco-friendly manner





# CELEBRATE POLLUTION FREE BHOGI



Give Out Children A Green Future. Say No To Bonfire.



Do not burn useless tyres, old clothes and other wastes as this will contribute to air pollution and global warming.



Avoid burning of waste materials such as plastics, polythene, etc.



Plastics, unwanted papers and rubber could be used for recycling.



Donate old and reusable clothes & shoes to the needy.



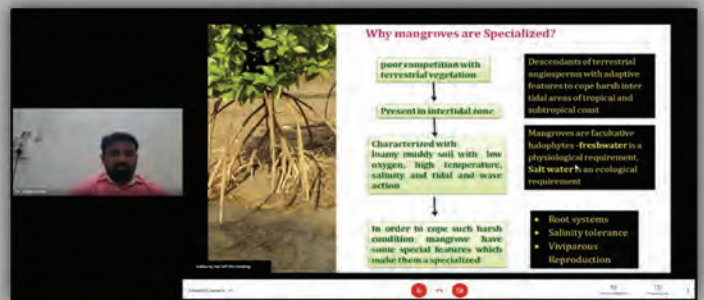
**"Let us celebrate smokeless Bhogi and protect our environment"**



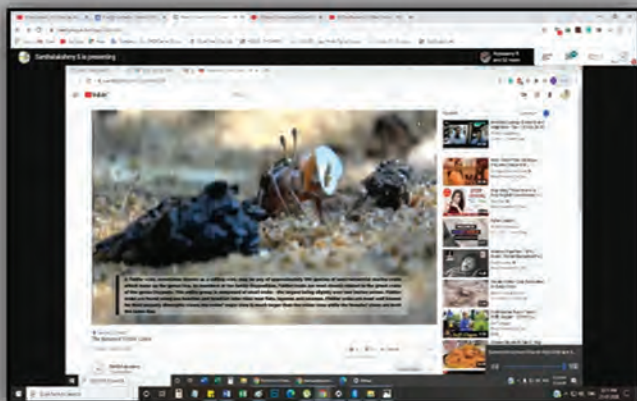
# Puducherry ENVIS Environment Events

## International Day for the Conservation of the Mangrove Ecosystem

Conducted Webinar on “Diversity and Conservation measures of Indian Mangroves” wherein Dr. P. Ragavan Post-Doctoral Fellow, Physical Research Laboratory, Ahmedabad delivered expert lecture on 26.07.2020. The number of participants were **85**.



The Chairman, Puducherry Pollution Control Committee released Educational Video on “The Nature of Fiddler Crab in Mangrove Ecosystem” developed by Puducherry ENVIS Hub on the eve of International Day for Conservation of Mangrove Ecosystem. This video is designed to highlight the reproduction, breeding, distribution, morphology and identification key, etc.

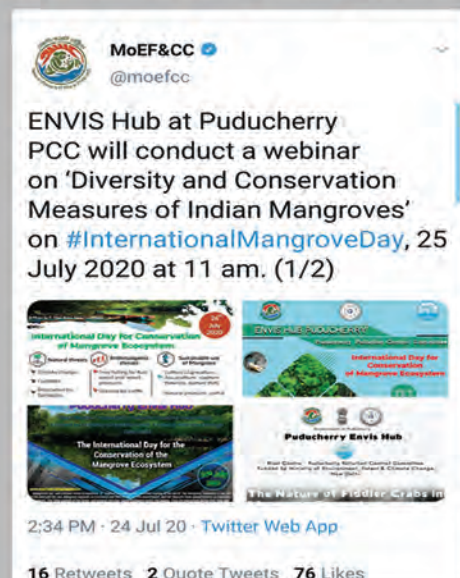


Youtube Link : <https://youtu.be/tKePb4oqch4>

Poster



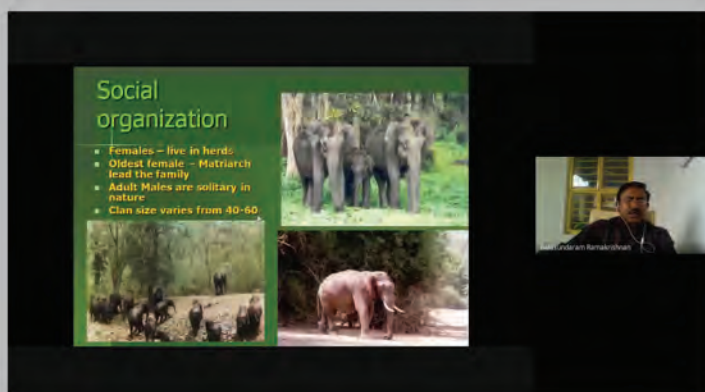
Tweet by MoEF&CC regarding our Program



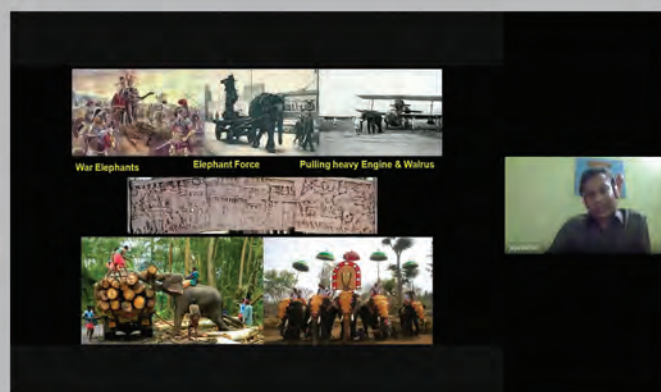


# CELEBRATION OF WORLD ELEPHANT DAY 2020

Conducted Webinar on the eve of World Elephant Day, wherein **Dr. B. Ramakrishnan**, Assistant Professor, Department of Zoology & Wildlife Biology, Government Arts College, Udhagamandalam delivered expert lecture on "**Elephant - The Keystone Species in Biodiversity Conservation**" & **Dr. S. Jayakumar**, Assistant Professor, Department of Zoology & Wildlife Biology, A.V.C. College, Mannampandal, Nagapattinam District, Mayiladuthurai delivered expert lecture on "**Asian Elephant: Then and Now**" held on 12.08.2020. The number of participants were **85**.



Poster



Webinar Poster

**ENVIS HUB PUDUCHERRY**  
Puducherry Pollution Control Committee

12<sup>th</sup>  
August  
2020

**World Elephant Day**

Bringing the world together to help elephants

#elephant day

@envishubpdya @ENVIS HUB - Puducherry @envispuducherry

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**Puducherry Envis Hub**  
Host Centre : Puducherry Pollution Control Committee  
Funded by Ministry of Environment, Forest & Climate Change  
Gol, New Delhi

**World Elephant Day**  
**Webinar**

**Dr. B. Ramakrishnan**  
Assistant Professor,  
Department of Zoology & Wildlife Biology  
Govt. Arts College,  
Udhagamandalam,  
**Topic : Elephant-The Keystone Species in Biodiversity Conservation**

**Dr. S. Jayakumar**  
Assistant Professor  
Department of Zoology & Wildlife Biology  
A.V.C. College (Autonomous)  
Mannampandal, Mayiladuthurai (TK)  
Nagapattinam (DT).  
**Topic : Asian Elephants: Then-and-Now**

Date : 12<sup>th</sup> August, 2020 Time : 5 to 6 P.M.  
Google Meet ID : ucu-rxho-rd  
Registration Link : <https://rb.gy/2pk8fp>  
Feedback Form : <https://forms.gle/rwytzt897HAtskJE8>

[https://dste.py.gov.in/Envispdy/Home\\_Envis.html](https://dste.py.gov.in/Envispdy/Home_Envis.html)

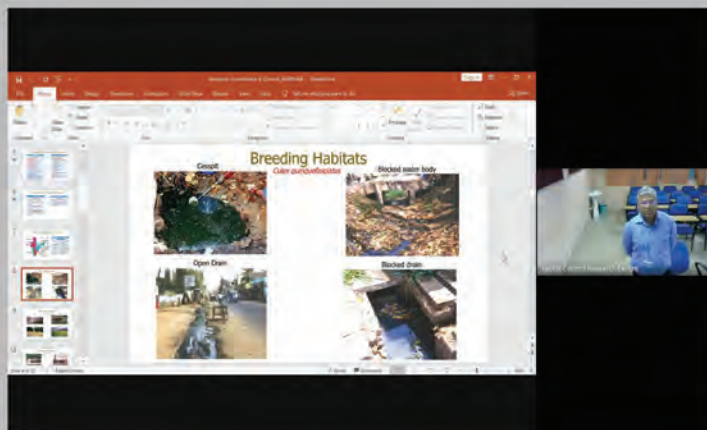


# CELEBRATION OF WORLD MOSQUITO DAY 2020

Conducted online Webinar on "**Mosquito Surveillance and Control**" wherein **Dr. A. N. Shriram**, Scientist – C, ICMR - Vector Control Research Centre, Puducherry delivered expert lecture on 20.08.2020. The number of participants were **70**.

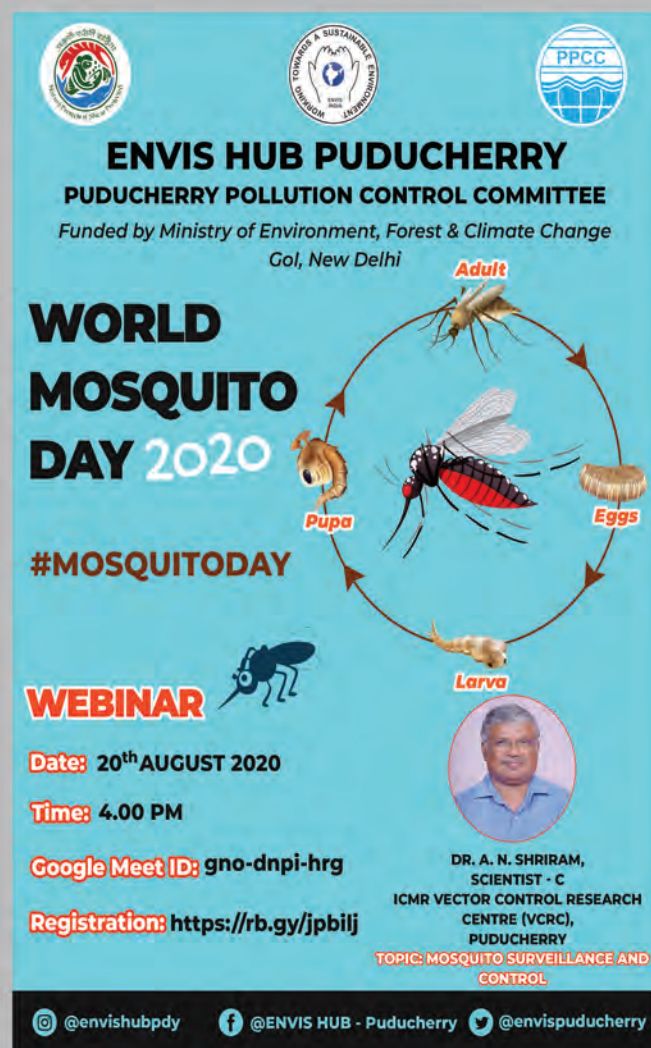
## Webinar

## Tweet by MoEF&CC regarding our Program



## Poster

## Webinar Poster



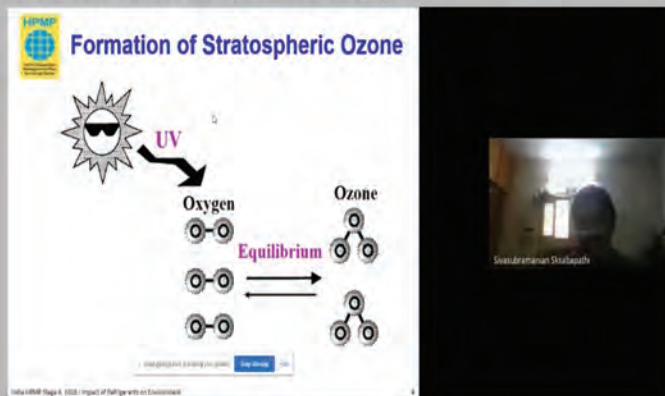


# CELEBRATION OF WORLD OZONE DAY 2020

As a part of the "World Ozone Day" Puducherry Pollution Control Committee (PPCC) through ENVIS Hub organized the following activities on 16.09.2020.

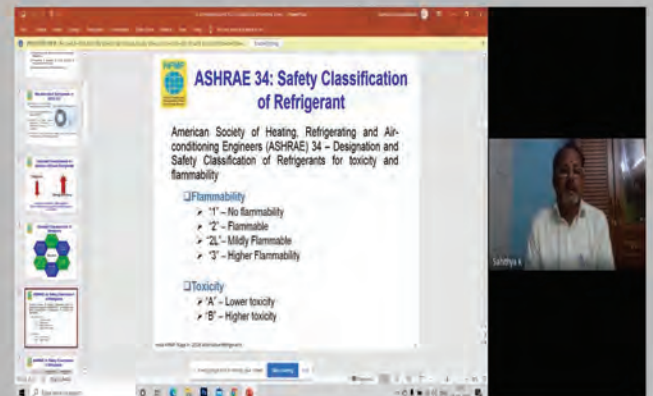
## Webinar Session 1

**Thiru. S. Kanagasabapathi**, Technical Trainer, HPMP Training Project under GIZ and Ministry of Environment, Forest & Climate Change, Govt of India, New Delhi delivered the expert lecture on "**Ozone Depletion and Global warming**" on the eve of World Ozone Day.



## Webinar Session 2

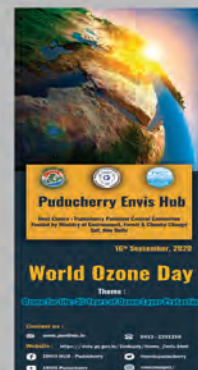
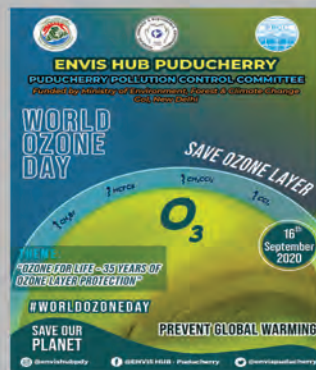
**Thiru. R. Kamalakannan**, Organizer -cum-Technical Trainer, HPMP Training Project under GIZ and MOEF & CC, Govt of India delivered expert lecture on "**Environmental Refrigerants**" on the eve of World Ozone Day.



Organized an interactive session with Industries to promote reduction and elimination of chemicals that destroy the Ozone layer and encouraged them to take green pledge towards the use of ozone-friendly chemicals.



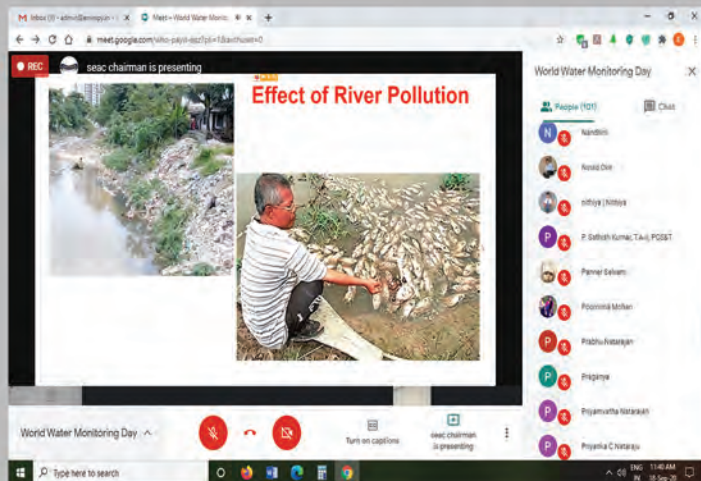
## Poster



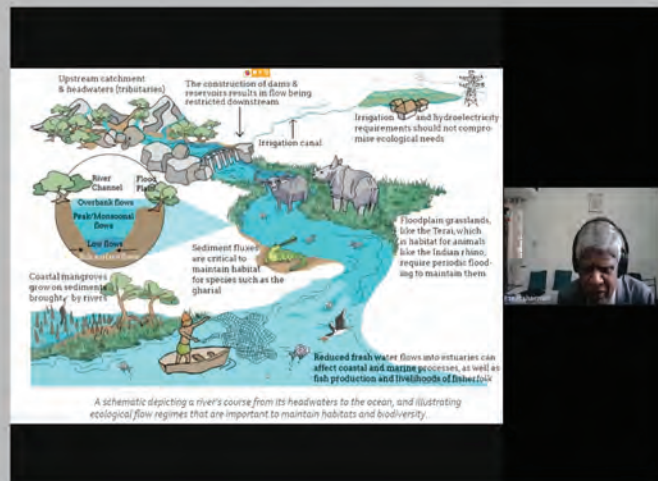


# CELEBRATION OF WORLD WATER MONITORING DAY

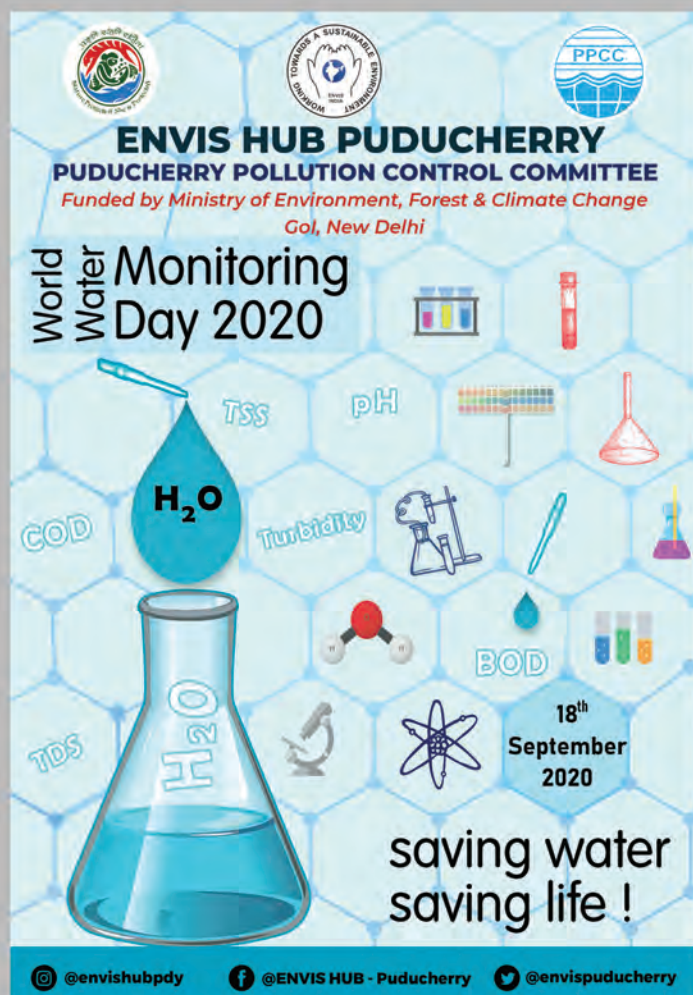
Conducted Webinar on “**Emerging Contaminants in River Water Quality: Issues and Measurements**” wherein **Dr. S. Mohan**, Professor, Department of Civil Engineering, Indian Institute of Technology, Madras delivered expert lecture on 18.09.2020. The number of participants were **105**.



Poster

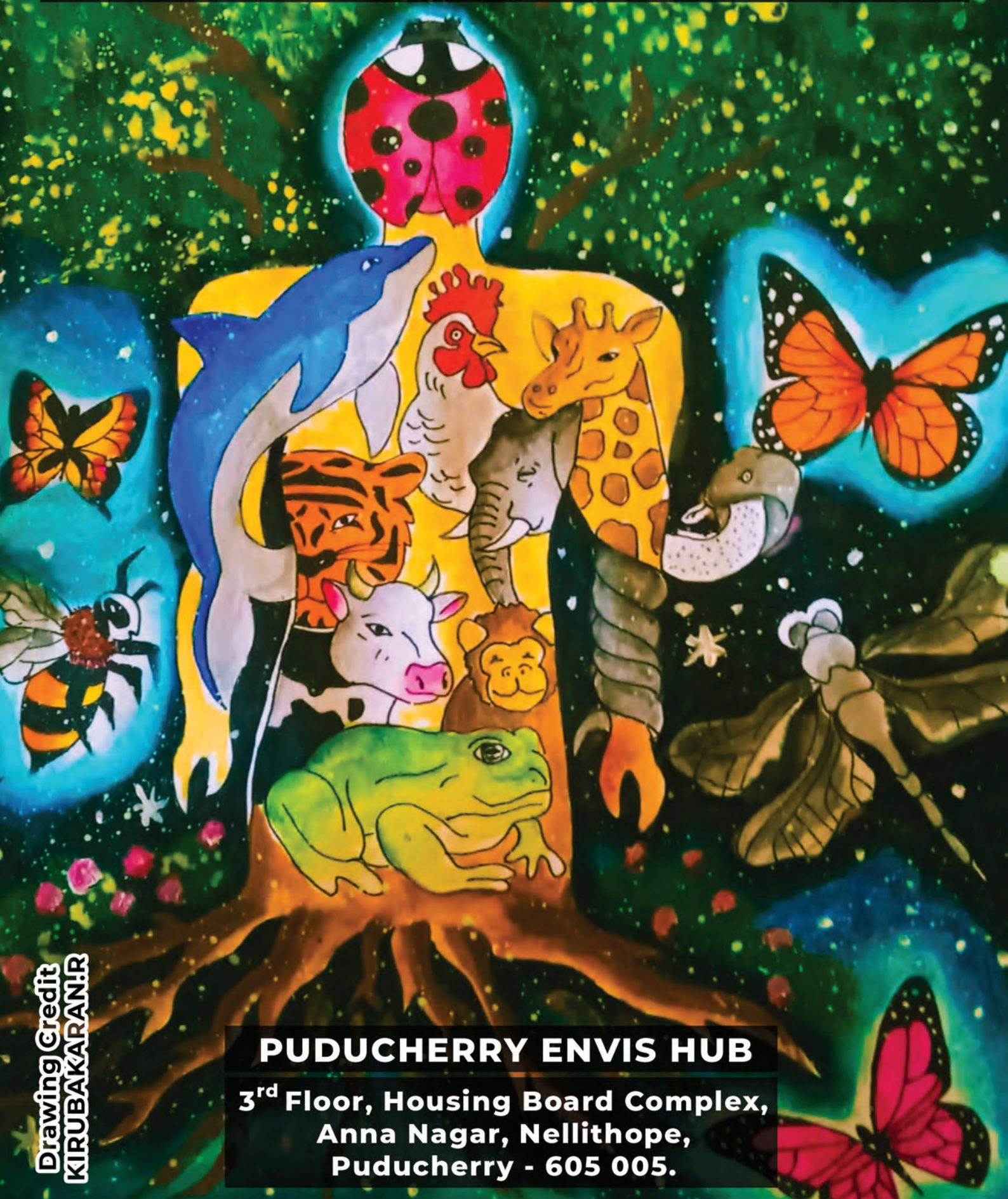


Webinar Poster





**KIRUBAKARAN.R** awarded First prize in the “Drawing Competition” on the occasion of “International Day for Biological Diversity 2020” organized by Puducherry Envis Hub.



## **PUDUCHERRY ENVIS HUB**

**3<sup>rd</sup> Floor, Housing Board Complex,  
Anna Nagar, Nellithope,  
Puducherry - 605 005.**

Drawing Credit  
**KIRUBAKARAN.R**