



# GOVERNMENT OF PUDUCHERRY

## *Puducherry Pollution Control Committee*

State of Environment & its Related Issues in Puducherry

## ENVIS HUB NEWSLETTER



### STATUS OF AMBIENT AIR QUALITY IN THE U.T OF PUDUCHERRY FOR THE YEAR 2017

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## Introduction

Puducherry Pollution Control Committee is carrying 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, Anna Nagar, Puducherry.	Residential cum Commercial area	Vehicle emission and natural dust from road
3	Electricity Department, Mettupalayam Industrial Estate (PIDIC), 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. Guest House, Kovilpathu, Karaikal	Residential cum Commercial area	Vehicle emission and natural dust from road
6	PPCL, Polagam, T.R. Pattinam, Karaikal	Industrial area	Industrial Pollution and vehicular pollution.

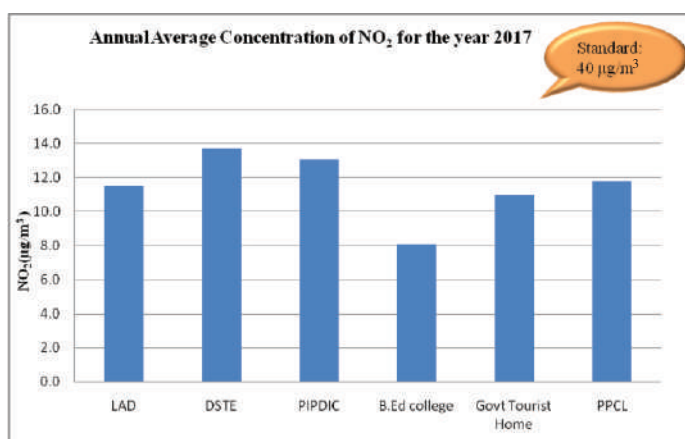
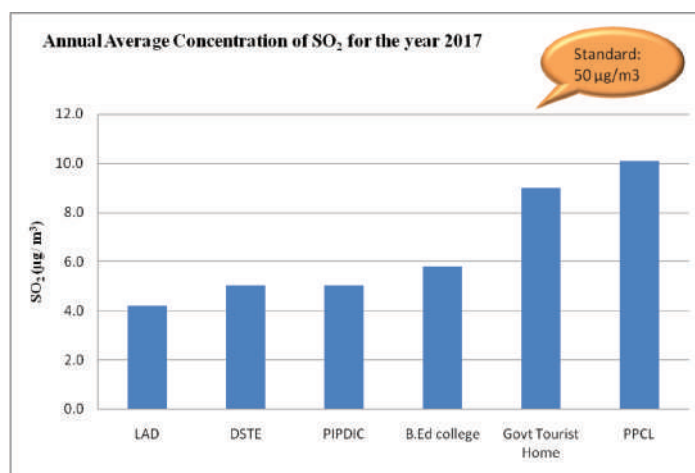
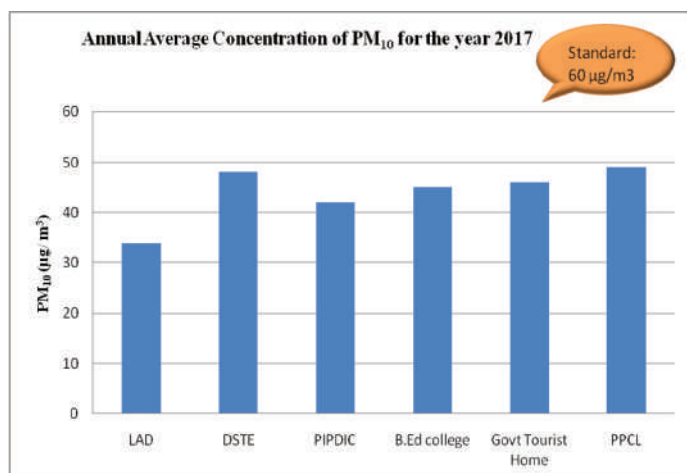
## Air Pollutants monitored under NAMP, method of measurement, their sources and effects:

Sl.No	Air Pollutant	Method of measurement	Possible sources	Effects
1	Particulate Matter – PM <sub>10</sub> (size less than 10 microns)	Gravimetric	Road traffic emissions particularly from diesel vehicles Industrial combustion plants Commercial and residential combustion	Visibility reduction cardio - pulmonary problems asthma, bronchitis, and pneumonia in order people
2	Nitrogen dioxide	Improved West and Gaeke method	High temperature combustion (internal combustion engines, fossil fuel-fired power stations, industrial) Burning of bio mass and Fossil Fuels	Irritate the nose and throat increase susceptibility to respiratory infections
3	Sulphur dioxide	Modified Jacob and Hochheiser	Combustion of fossil fuel. Combustion process in diesel, petrol.	Respiratory illness. Visibility impairment

## Status of Air Quality

**Annual Average concentration of pollutant at the six monitored locations in the U.T. of Puducherry for the year, 2017**

Sl. No	Location	Pollutant in $\mu\text{g}/\text{m}^3$		
		PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
1	LAD	34	4.2	11.5
2	DSTE	48	5.0	13.7
3	PIPDIC	42	5.0	13.1
4	B. Ed college	45	5.8	8.1
5	Govt Tourist Home	46	9.0	11.0
6	PPCL	49	10.1	11.8
Standard		60	50	40



## Observation and Results:

- ▲ The monitoring result reveals that 24 Hourly average concentration of Particulate Matter (Size less than  $10\text{ }\mu\text{m}$ ) -  $\text{PM}_{10}$  measured in all the six locations are within the prescribed standard limit of  $100\text{ }\mu\text{g}/\text{m}^3$ .
- ▲ Annual average concentration of  $\text{PM}_{10}$  measured in all the six locations are in the ranges from 34 – 49 ( $\mu\text{g}/\text{m}^3$ ) which is within the prescribed standard limit of  $60\text{ }\mu\text{g}/\text{m}^3$ .
- ▲ The annual average concentrations of the pollutants viz.,  $\text{SO}_2$  &  $\text{NO}_2$  in all the six locations are within the prescribed standard limits. One of the reasons for low levels of pollution in coastal cities like Puducherry is that it has excellent ventilation effects due to sea and land breezes which reduces pollution levels.

## Sustainable Initiative taken:

- Government of Puducherry is not encouraging Air Pollution Potential Unit to establish in UT of Puducherry.
- Common Biomedical Treatment facilities are set up outside the city for the incineration of bio-medical waste.
- The industries have been directed to develop sufficient green belt in and around the unit.
- Periodic inspection of industries and monitoring of ambient air quality and source emission is carried out for compliance.
- Seventeen category units are directed as per the CPCB instruction to provide OCEMS and connect the data to the CPCB & PPCC server.

**Action plan** proposed to maintain the air quality in good category and to meet the Particulate Matter standard within the prescribed standard limit.

## The Pollution Abatement:

- Control pollution from industry through best available technology.
- Usage of cleaner fuel.
- Greenery development.
- Curtail road dust – control of traffic on unpaved roads, usage of Vacuum cleaners/suction system to clean the road dust.
- Encouraging the use of renewable energy as much as possible by using solar Energy.

**Air Quality Index:** Air Quality Index is a tool for effective communication of air quality status to people, in terms which are easy to understand. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.

There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. Each of these categories is decided based on ambient concentration values of air pollutants and their

likely health impacts (known as health breakpoints). AQ sub-index and health breakpoints are evolved for eight pollutants (PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO, O<sub>3</sub>, NH<sub>3</sub>, and Pb) for which short-term (upto 24-hours) National Ambient Air Quality Standard are prescribed.

Based on the measured ambient concentrations of a pollutant, sub-index is calculated, which is a linear function of concentration (e.g. the sub-index for PM<sub>2.5</sub> will be 51 at concentration 31 µg/m<sup>3</sup>, 100 at concentration 60 µg/m<sup>3</sup>, and 75 at concentration of 45 µg/m<sup>3</sup>). The worst sub-index determines the overall AQI.

### Status of Air Quality Index

**Status of Category-wise numbers of AQI in the UT of Puducherry for the year 2017.**

AQI Category	AQI	Colour Code	Number of AQI Values in different category		Pollutant-wise number of AQI values in AQI category	Possible Health Impacts
			No of AQI Values	% of AQI Values	PM <sub>10</sub>	
Good	0-50		437	79.2	467	Minimal Impact
Satisfactory	51-100		115	20.8	99	Minor Breathing discomfort to sensitive people
Total AQI Values			552	100	566	

Note:- One observation means one AQI Calculated for daily ambient air quality data at one station.

### National Air Quality Index

AQI	Possible Health impacts
<b>Good (0-50)</b>	Minimal Impact
<b>Satisfactory (51 - 100)</b>	Minor Breathing discomfort to sensitive people
<b>Moderate (101 - 200)</b>	Breathing discomfort to the people with lung, heart disease, children and older adults
<b>Poor (201-300)</b>	Breathing discomfort to people on prolonged exposure
<b>Very Poor (301-400)</b>	Respiratory illness to the people on prolonged exposure
<b>Severe (&gt;400)</b>	Respiratory effects even on healthy people

**Overall summary:**

The calculated AQI values for 24 hourly average concentrations are categorized as good to Satisfactory for the year 2017 at all the six locations. The Prominent parameter is PM<sub>10</sub>. The AQI value calculated for the two cities for PM<sub>10</sub> showed 79.2 % of AQI value i.e. 437 AQI values in the U.T of Puducherry out of total 566 AQI values revealed good air quality 20.8 % of AQI value i.e. 115 AQI values showed satisfactory air quality .

**Conclusion:**

The overall AQI can give clear view about ambient air and the report reveals that PM<sub>10</sub> is mainly responsible to determine the air quality which can be easier for a common man to understand. The PM<sub>10</sub> concentration in the Puducherry and Karaikal region is sourced predominantly from the anthropogenic activity, which may be due to the increase in vehicle movement, road dust etc.

**Broad guidelines for Public/Citizens:**

AQI is an initiative intended to enhance public awareness and involvement in efforts to improve air quality. People can contribute by maintaining vehicles properly (e.g. get PUC checks, replace car air filter, maintain right tyre pressure), following lane discipline & speed limits, avoiding prolong idling and turning off engines at red traffic signals. In addition to above, during severe or very poor AQI, people should minimize travel; avoid using private vehicles and instead use public transport, bikes or walk, and carpool.

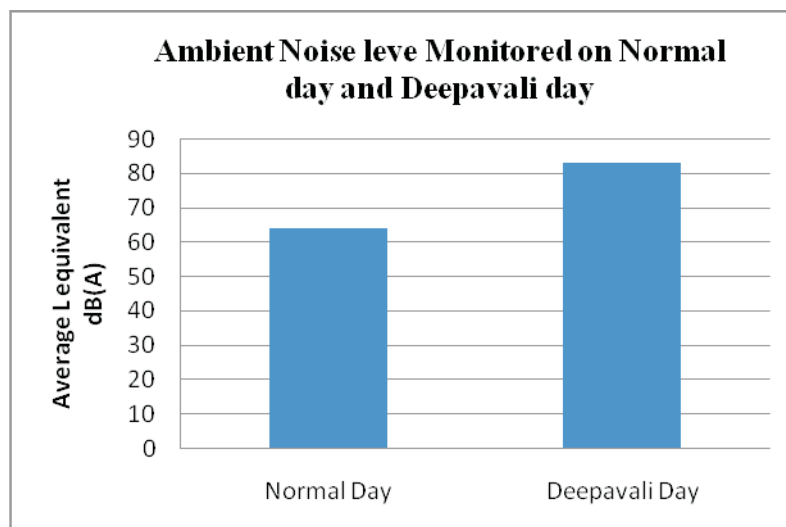
**Reference:** This report is prepared based on the National Air Quality Index of CPCB under Manual monitoring system for National Ambient Air Quality Monitoring Programme and National Ambient Air Quality Monitoring series.

**Weblink :** [http://www.cpcb.nic.in/FINAL-REPORT\\_AQI.pdf](http://www.cpcb.nic.in/FINAL-REPORT_AQI.pdf)

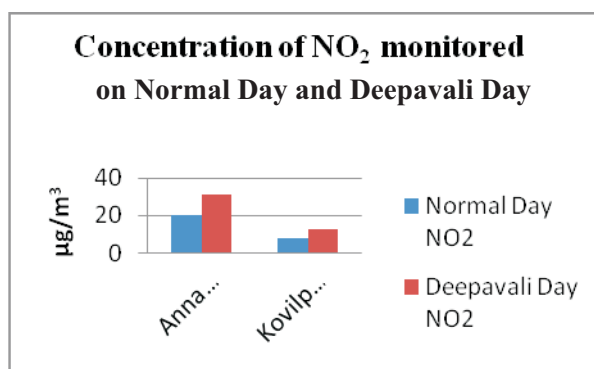
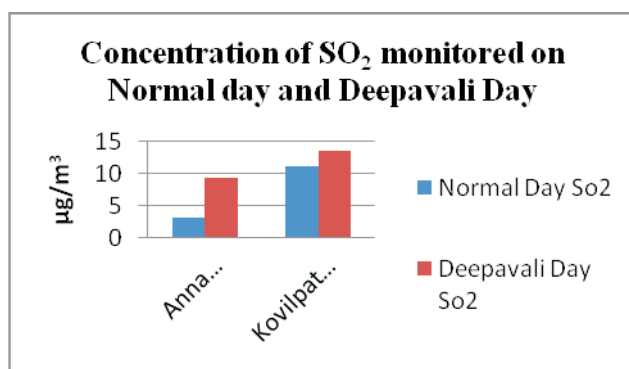
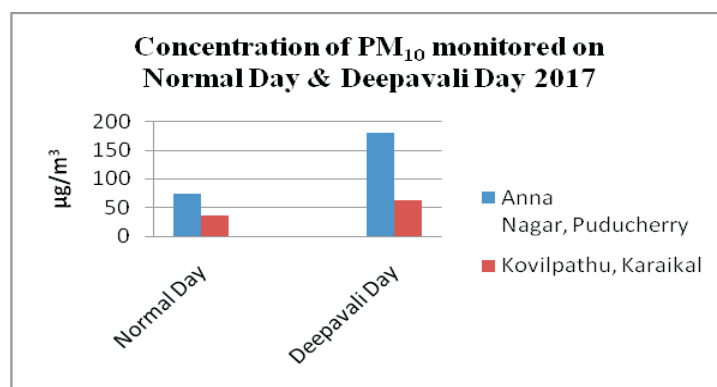
**Ambient Air Quality and Noise Pollution Levels – Deepavali 2017**

Every year Puducherry Pollution Control Committee conducts air quality monitoring to ascertain the impact of crackers bursting during Deepavali festival. This year also, Puducherry Pollution Control Committee conducted Air and Noise monitoring during normal day on 12.10.2017 and on the occasion of Deepavali festival on 18.10.2017 to assess the environmental impact of bursting of crackers.

The Noise survey result reveals that there is an increase in ambient noise level on the day of Deepavali [82.8 Leq dB (A)] in comparison to the normal day [63.9 Leq dB (A)]. The main cause of increase in the ambient noise level during festivals is bursting of crackers, whereas in normal day the main Contributors to the ambient noise level in that area is due to two wheeler movement. However, the measured noise levels because of bursting of crackers were found to be within the Hon'ble Supreme Court directive on noise level of 125 dB(A).



The air quality monitoring report reveals that in Puducherry, the 24 hourly average concentration of particulate matter (PM<sub>10</sub>) was found significantly higher on the day of deepavali and it is above the prescribed standard limit of 100 µg/m<sup>3</sup>. The monitoring conducted at karaikal reveals that the concentration of PM<sub>10</sub> is higher on the day of deepavali and it is within the prescribed standard limit. It may be due to bursting of crackers. The concentration of gaseous pollutants viz., SO<sub>2</sub> and NO<sub>2</sub> are within the prescribed standard limit (80µg/m<sup>3</sup>).





The analysis of AQI in Puducherry on the day of Deepavali indicates that the value is falling in Moderate category and on Normal day the value is falling in satisfactory and in Karaikal on the day of Deepavali indicates that the value is falling in satisfactory category and on Normal day the value is falling in good category.

### Ambient Air Quality during Boghi festival, 2018

Puducherry Pollution Control Committee conducted ambient air quality monitoring at two locations in Puducherry and one location at Karaikal during Normal day 2018 and on Boghi day 2018 to assess the air quality.

### Concentration of pollutants monitored on Normal day 2018 & Boghi day 2018.

Location	Normal day- 2018			Boghi day 2018		
	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Anna Nagar	143	9.3	6.6	166↑	20.9↑	7.8↑
Mettupalayam	104	10.7	9.4	110↑	15.6↑	9.1↓
Kovilpathu ( Karaikal )	63	10	16.5	73↑	14.6↑	20.7↑

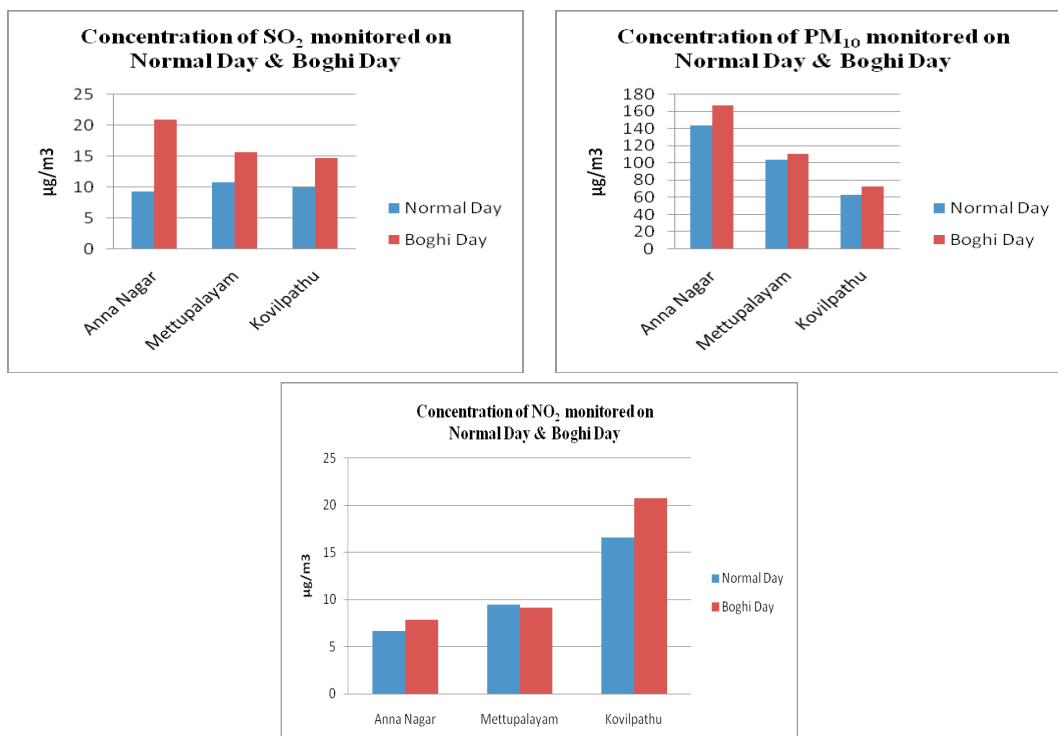
Concentration expressed in  $\mu\text{g}/\text{m}^3$

PM<sub>10</sub> – Particulate Matter (Size less than 10  $\mu\text{m}$ ),

SO<sub>2</sub> – Sulphur Dioxide, NO<sub>2</sub> – Nitrogen Dioxide

#### Observation:

The result reveals that when compared to Normal day, the concentration of PM<sub>10</sub> and SO<sub>2</sub> at all the three locations is found to be slightly higher on the Boghi day, 2018. This may be due to sporadic activity of burning of unwanted old article/wastes/debris for a short period of time. Vehicular emission is also one of the factors on both days as high humidity, foggy condition and low wind speed were not favourable for easy diffusion of pollutants.





## Environment Events:

### The Pongal Bird Count at Puducherry

Birdwatching is beneficial for both birds as well as human beings. Research shows that watching and admiring nature can make us feel better emotionally as well as contributes to our physical wellbeing. Seasonality, occurrence and distribution of even common birds around us is poorly known. Hence, Identifying, counting birds and reporting in a citizen science platforms such as eBird India portal can help to understand our birds better which can leads to their conservation.

An initiative by ENVIS along with Pondicherry Science Forum organized, the Pongal Bird Count at Puducherry on 13th January 2018 at Korkadu lake.

The Pongal Bird Count (PBC), an initiative of the Birders network, is an annual bird monitoring programme for our state, where people observe birds for a minimum of 15 minutes and upload the sightings into bird listing and documentation platform “eBird”. The first Pongal Bird Count was conducted in January 2015.

### Participants:

Around 120 children, 18 teachers and 30 public people were participated in the event. Students from various schools, children from thulir illams of Science forum, orphanage home were participated.



### National Science Day Celebration, 2018

National Science Day was celebrated by ENVIS Hub Centre, Puducherry Pollution Control Committee, Puducherry in collaboration with Kasthurba College for Women, Villianur for the undergraduate first year students of Arts and Science Colleges functioning under the aegis of Pondicherry Society for Higher Education, Puducherry on 28th February 2018.





## World Wetland Day, 2018

World Wetland Day was celebrated by ENVIS Hub Centre, Puducherry Pollution Control Committee, Puducherry

1. Conducted Drawing Competitions on the theme “**Wetlands for a sustainable urban future**” on 01.02.2018 at Aruchelvi Aiyamman Arasu Girls Middle School, Muthirapalayam.
2. Conducted Drawing and Quiz Competitions and Special Lecture on Biodiversity Conservation by Resource Person Dr. Bubesh Gupta (Founder Director, Universal Eco Foundation) at Government Middle School, Ariyankuppam on 02.02.2018.
3. Conducted Drawing and Quiz Competitions and Special Lecture on Wetland Conservation by Resource Person Mr. Arun Raj (Head Master, AICE School, Ariyankuppam) at Government High School, Mettupalayam on 02.02.2018.
4. Conducted Drawing and Quiz Competitions at Artchouna Soupraya Naikar Government Middle School, Mudaliarpeta on 02.02.2018. Nearly 30 Students participated in the event.
5. Drawing Competitions was conducted by Department of Forest and Wildlife, Puducherry in coordination with ENVIS Hub Centre at Ousteri Lake for Shri Patcheappane School for the Hearing Impaired on 02.02.2018.





## Consumer Rights Day, 2018

Conducted World Consumer Rights Day programme at Government Middle Schools, T.N.Palayam on 15.03.2018. Nearly 100 Students participated in the event. Road rally Programme were also conducted for the students.





## Flower Show Exhibition, 2018

Envis Coordinator along with Programme Officer participated in the 3<sup>rd</sup> Flower Show Exhibition organized by JIPMER on 09.03.2018. The herbal garden of DSTE/PPCC won award for best display of Medicinal Plants and its usage.



## World Forest Day Celebration and World Water Day, 2018

ENVIS Hub conducted drawing competitions at Satya Special School on 16.03.2018 for World Forest Day and World Water Day, 2018. Nearly 70 Students participated in the event. Tree saplings also distributed to the students.





## Prizes and Certificates Distribution

Hon'ble Minister (Science, Technology & Environment) distributed Prizes and Certificates for the Winners of the drawing competitions at different levels held during various occasions viz. World Water Day- 2017; World Forest Day- 2017 and Science Express Climate Action Special (SECAS) that visited Puducherry on 15<sup>th</sup> and 16<sup>th</sup> of June, 2017.





## ஊகட்டேரி, கோர்க்காடு ஏரியில் பொங்கல் பறவை கணக்கெடுப்பு

புதுச்சேரி, ஜன. 16: புதுச்சேரி அரகின் சுற்றுச்சூழல் தகவல் மையம், புதுவை அறிவியல் இயக்கம் சார்பில் ஊகட்டேரி மற்றும் கோர்க்காடு ஏரியில் பொங்கல் பறவைகள் கணக்கெடுப்பு மற்றும் பறவைகள் உற்றுநோக்கல் திகழ்ச்சி நடந்தது. பறவைகள் வாழிடங்களை பாதுகாப்பில் பொதுமக்களின் பங்கும் ஆதரவும் மிகவும் அவசியம் என்ற தலைப்பில் 2018ம் ஆண்டின் பொங்கல் பறவைகணக்கெடுப்பு திகழ்ச்சி நடைபெற்றது. இதில் 125 பறவை ஆர்வலர்கள் கலந்துகொண்டனர். அவர்களுக்கு பொங்கல் பறவைகள் கணக்கெடுப்பில் eBird இணையதளம் உதவினால்தான் பறவைகளை எளிதில் கணக்கெடுக்க முடியும். காமம், மைனா, கரிசான் குருவி, அண்டங்காக்கை, பச்சைக்கிளி, மடையான், வெண்மார்பு மீன்சொத்தி, பனை உழவாரன், மணிப்புறா உட்பட எண்ணற்ற பறவைகளை பற்றி விளக்கமும் பறவைகள் பற்றிய பாடல்களும் பாடப்பட்டன. மேலும் மாணவர்களுக்கு வினாக்களையேற்ற வழங்கப்பட்டது. இறுதியாக பறவைகள் பற்றிய வினாடி வினா போட்டியும் நடந்தது. தமிழ்நாடு அறிவியல் இயக்க பறவையியல் கழக செயலாளர் கணேஷ் வர், புதுவை பறவையியல் கூட்டமைப்பின் சுரேந்தர், சுற்றுச்சூழல் துறை விஞ்ஞானி விபின் என்பட பலர் தலைமை தாங்கினர். 15 பள்ளிகளில் இருந்து 70 மாணவர்களும், தனியார் இல்லங்களிலிருந்து 50 மாணவர்கள் உட்பட 140க்கும் மேற்பட்டோர் கலந்துகொண்டனர். கடந்த ஆண்டு புதுவை அறிவியல் இயக்கம் சார்பில் நடத்தப்பட்ட கணக்கெடுப்பு நிகழ்ச்சியில் 37 வகையான பறவை விலங்குகள் மற்றும் 10 ஆவிரத்திற்கும் மேற்பட்ட பறவைகள் கணக்கிடப்பட்டன.



புதுச்சேரி அறிவியல் தொழில்நுட்பம் மற்றும் சுற்றுச்சூழல் துறை சார்பில், கண்கள் ஏரியில் நடத்த உலக சதுப்பு தின விழாவில், சுற்றுச்சூழல் பொறியாளர் ரமேஷ், கல்லூரி மாணவிகளுக்கு விழிப்புணர்வு துண்டு பிரசுரங்கள் வழங்கினார்

Tue, 16 January 2018  
epaper.dinakaran.com/c/25477380

புதுச்சேரி அறிவியல் தொழில்நுட்பம் மற்றும் சுற்றுச்சூழல் துறை சார்பில், கண்கள் ஏரியில் நடத்த உலக சதுப்பு தின விழாவில், சுற்றுச்சூழல் பொறியாளர் ரமேஷ், கல்லூரி மாணவிகளுக்கு விழிப்புணர்வு துண்டு பிரசுரங்கள் வழங்கினார்



ஊகட்டேரி ஏரிக்கரையில் நடந்த உலக ஈர நில தினம் விழாவில், சுற்றுச்சூழல் மற்றும் அறிவியல் தொழில்நுட்பத் துறை விஞ்ஞானி விபின் பாபு பேசினார். அருகில், துணை வன பாதுகாவலர் சத்தியமூர்த்தி

### வினாடி- வினா போட்டி:

## பள்ளி மாணவர்களுக்கு பரிசு

அரியாங்குப்பம், பிப்.4- புதுவை அறிவியல் இயக்கம் மற்றும் அரசு சுற்றுச்சூழல் தகவல் மையம் சார்பில் உலக சதுப்பு நில பாதுகாப்பு தின நிகழ்ச்சி அரியாங்குப்பம் அரசு உயர்நிலைப்பள்ளியில் நடைபெற்றது. பள்ளியின் தலைமை ஆசிரியர் அச்சு தன் தலைமை தாங்கினார். தலைமை ஆசிரியை (நிலை-2) மாலதி முன்னிலை வகித்தார். பள்ளி சமுதாய நலப்பணித் திட்ட பொறுப்பு ஆசிரியர் ராமலிங்கம் வரவேற்றார். சதுப்பு நிலங்கள் எனும் தலைப்பில் சுற்றுச்சூழல் தகவல் மைய விஞ்ஞானி விபின் மற்றும் புதுவை அறிவியல் இயக்க செயலர் அருண்நாகலிங்கம் ஆகியோர் பேசினார்கள். நிகழ்ச்சியை யொட்டி மாணவர்களுக்கு இடையே நடத்தப்பட்ட வினாடி-வினா போட்டி, ஓவியப்போட்டி ஆகியவை நடத்தப்பட்டு பரிசுகள் வழங்கப்பட்டன. மாணவர்களுக்கு சுற்றுச்சூழல் தகவல் மைய பொறுப்பாளர் நித்யா பரிசுகளை வழங்கினார். முடிவில் அரியாங்குப்பம் ஆற்றங்கரையோரத்தில் சதுப்பு நில காடுகள் உள்ள பகுதிக்கு மாணவர்களின் களப்பயணம் நடந்தது.



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