

FROM THE STATE DIRECTOR'S DESK

Magical Mangroves is a joint initiative of WWF-India and Godrej & Boyce Mfg Co Ltd with the objective to highlight the values, functions and services of mangrove ecosystem, create more awareness in the society and encourage governments, institutions, people's movements and individuals to protect the remaining mangroves in the country, and also take steps to increase and improve it through afforestation initiatives. We are very proud and happy to say that, in Kerala, we have implemented Magical Mangroves in the best possible way. Mangroves were in earlier times referred to as "Mangrove Forests". But as they are outside the forest ecosystem, the level of protection is low and they are faced with many anthropogenic threats, the major being, cutting down of mangrove trees and converting the land for other development purposes. Hence there are no more "Mangrove Forests"; it has reduced to "Mangrove Patches". Globally, mangroves are considered as most productive among various ecosystems. They are very unique in that they are found in tidal regions, mainly along the mouth of estuaries, and the mangrove plants can withstand salinity. They are breeding, feeding and nursery ground for fishes and smaller crustaceans. In India, the largest patch of mangroves are seen in the Sundarbans deltaic area and it is even more unique because it is a Tiger habitat too. Mangroves are found in most of the other coastal states of India, including Kerala. In Kerala, over the years, the extent of mangroves have shrunk considerably. In the Capital of Thiruvananthapuram, mangroves were seen in good healthy patches in Veli, but most of them have been lost with the development of the Veli Tourist Village. Now some patches are seen in areas like Poovar and Anchuthengu. In Kollam, the major patch of mangroves

is in Asraman. But many mangrove plants and trees have been lost to the tourism development activities there. Some sparse patches are seen in Ayiramthengu also. Ernakulam had good extensive mangrove vegetation in Puthuvypin area, but it has been lost entirely with the construction of the LNG Terminal. Now some good vegetation is seen in and around Maradu and Aroor, but mostly on land in private hands. People do not have any sense of appreciation or belongingness to mangroves and hence they are neglected. The greatest threat now to mangroves are invasives, mainly creepers, which grows abundantly over the mangrove plants and trees and ultimately kills them. In Thrissur district, mangroves in Chettuva have been lost considerably with various private tourism development projects, mainly resort constructions. Kozhikode still has some good natural patches of mangroves in Kadalundi-Vallikunnu because this area has been declared as a Community Reserve some years back. The Forest Department has put in some good effort into afforesting mangroves, especially *Bruguiera* and *Rhizophora* species, in this region and it is very evident alongside the railway line passing through the bridge in that area. The major extent of the remaining mangroves in Kerala is in Kannur district in Kavvai, Kunhimangalam and Valapattanam. Social Forestry Division is into mangrove afforestation activities and is also supporting private landowners with mangroves in their land by providing a small annual monetary incentive. Non-government institutions like Wildlife Trust of India is implementing the Kannur Kandal Project with the support of the CSR Funds of Apollo. We can never create a mangrove ecosystem, hence we should not destroy them. Hope the initiatives through Magical Mangroves goes a long way in protecting the remaining mangroves in our State.

Renjan Mathew Varghese, State Director

IMPORTANT NEWS ON NATURE AND ENVIRONMENT

GLOBAL

Brazil's Amazon rainforest suffers worst fires in a decade

Data from space research agency Inpe shows that fires in Brazil's Amazon increased 13% in the first nine months of the year compared with a year ago, as the rainforest region experienced its worst rash of blazes in a decade. Satellites

in September recorded 32,017 hotspots in the world's largest rainforest, a 61% rise from the same month in 2019. The entire Amazon, which spans nine countries, currently has 28,892 active fires, according to a fire monitoring tool funded in part by the US space agency, Nasa. According to an analysis of satellite images by the US-based non-profit Amazon Conservation, roughly 62% of major Amazon fires were in forests in September, compared with only 15% in August. The warming of the North Atlantic is also helping drive drought in the Brazilian Pantanal, the world's largest wetland, which has suffered more fires this year than ever previously recorded, according to Inpe data. These data show that the fires in September are not only burning

recently deforested areas and farmland, where ranchers set them to clear land, but are also increasingly burning virgin forest. This is a worrying trend that suggests the rainforest is becoming drier and more prone to fire (Source: *The Guardian*, 1 October 2020).

Climate change: 2020 set to be one of the three warmest years on record

The Earth continued to endure a period of significant heating in 2020 according to the World Meteorological Organization (WMO). Its provisional assessment suggests this year will be one of the three hottest, just behind 2016 and 2019. The warmest six years in global records dating back to 1850 have now all occurred since 2015. With data available from January to October this year, the WMO says 2020 is set to be around 1.2C above the baseline, but with a margin of error of 0.1C. Their data shows that January to October was also the warmest such period on record in Europe. But some places were below average including parts of Canada, Brazil, India and Australia (Source: *Down to Earth*, 2 December 2020).

Hunger rising in mountain regions due to biodiversity loss, climate change

Although many of the world's most important crops and livestock species originate in mountain regions, hunger is rising in these areas due to biodiversity loss and climate change, according to a joint study published by the UN Food and Agriculture Organization (FAO) and partners. It found that between 2000 and 2017, the number of mountain people vulnerable to food insecurity in developing countries grew from 243 million to almost 350 million. The study was released on International Mountain Day, observed annually on 11 December. The focus this year is on the social, economic and ecological value of mountain biodiversity. The authors said that the ultimate goal of this study is to call on decision-makers and other stakeholders to strengthen cooperative action to reduce the vulnerability of mountain people, in particular local communities and indigenous people, and of the most vulnerable among them, often women and children (Source: *UN News*, 11 December 2020).

National

3 contenders for national butterfly status

A citizen poll to identify the national butterfly concluded with three species garnering the highest number of votes. Krishna Peacock (*Papilio krishna*), Indian Jezebel (*Delias eucharis*), and Orange Oakleaf (*Kallima inachus*), the frontrunners, have unique features such as ability to camouflage as a dead leaf, exhibit iridescence to stave off predators, and aid farmers in getting rid of pests. While the organisers will submit the list of the top-three to the Ministry of Environment, Forests and Climate Change, the onus is on the Centre to choose one among them to join the ranks of the Bengal Tiger, Indian Peacock, Indian Lotus, banyan tree, and mango as yet another national symbol,

says Kalesh Sadasivan, one of the core members of the organising group. The nationwide poll organised by the National Butterfly Campaign Consortium, a collective of 50 butterfly experts and enthusiasts, from September 10 to the midnight of October 8 yielded 59,754 votes (Source: *The Hindu*, 9 October 2020).

Rare butterflies spotted across India

The Branded Royal, rarely seen in India, made news when it fluttered through the Nilgiris after a gap of over 130 years. "It was last recorded in 1888 by British entomologist GF Hampson," says Vinod Sriramulu, a trustee of the Wynter-Blyth Association (WBA) that comprises conservationists who document butterfly species in the Nilgiris. This year, especially, many rare species have been sighted across the country. The Blue Mormon, a black-coloured velvet-winged butterfly, a species endemic to the Western Ghats, showed up in Patna. Another rare species, the Spotted Angle butterfly, has been sighted in the reserve forests of Chhattisgarh. The Liliac Silverline, a protected species, whose only known breeding population is in Bengaluru, was sighted for the first time in the Aravalli range of Rajasthan (Source: *The Hindu*, 4 November 2020).

Most samples of honey found adulterated with modified syrup: CSE

At a time when honey is being touted as an immunity booster against Covid-19, an investigation by the New Delhi-based advocacy group Centre for Science and Environment (CSE) revealed that 77% of samples from 13 top honey brands in the country were found to have been adulterated with a modified syrup to beat safety tests. Only three of 13 brands --- Saffola, Markfed Sohna and Nature's Nectar --- passed the internationally accepted Nuclear Magnetic Resonance Spectroscopy (NMR) tests conducted by a German lab, considered the gold standard to detect modified syrup adulteration of honey, CSE's director general Sunita Narain told reporters. Narain, who released the findings of a four-month-long investigation, said honey samples of leading brands failed the NMR tests. Emami (Zandu), Dabur, Patnajali Ayurveda and Apis Himalaya have refuted the claims made by the CSE (Source: *Hindustan Times*, 2 December 2020).

Indian entrepreneur named among 'Young Champions of the Earth' winners by UN environment agency

A 29-year-old Indian entrepreneur is among the seven winners of the prestigious "Young Champions of the Earth" 2020 prize given by the UN environment agency to global change-makers using innovative ideas and ambitious action to help solve some of the world's most pressing environmental challenges. Vidyut Mohan, an engineer, is the co-founder of "Takachar", a social enterprise enabling farmers to prevent open burning of their waste farm residues and earn extra income by converting them into value-added chemicals like activated carbon on-site, UN Environment Programme (UNEP) said in a statement on Tuesday. Takachar buys rice husks, straw and coconut

shells from farmers and turns them into charcoal, saving the debris from the fires, which are also a driver of climate change. Since Takachar was launched in 2018, Mohan and its co-founder Kevin Kung have worked with about 4,500 farmers and processed 3,000 tonnes of crops, UNEP said (Source: *Indian Express*, 17 December 2020).

State

New lease of life for Pampa ecosystem

Chief Minister of Kerala inaugurated a programme to restore the rich riparian vegetation of the Pampa, which faced severe damage during the 2018 floods. The project, implemented by the Kerala State Biodiversity Board (KSBB), covers the riverbanks across 10 panchayats in three blocks. The primary phase of the project, initiated at Rs. 2 crore under the Rebuild Kerala initiative, envisages restoring 94 riverine species, including threatened ones, along the riverbanks. The project also aims at training to the people residing along the riverbanks through the Self Help Groups for enabling them to earn a living from the wetland ecosystem (Source: *The Hindu*, 28 October 2020).

Traffic rule enforcement turns green

Enforcement measures of the Motor Vehicles Department (MVD) have gone green with 45 plug-in electric vehicles joining the enforcement squads of the newly created Safe Kerala project. The country's own electric SUV, Nexon EV from Tata Motors, has been customised for enforcement activities. All gadgets for monitoring motor vehicles such as speed radars, breath analysers, and decibel meters are installed in the vehicles. The MVD has emerged as a role model in ushering in green mobility. Going for EVs instead of fossil-fuelled vehicles is in tune with the government decision to all departments to hire EVs from April 1, 2020, instead of purchasing new diesel vehicles. An EV-charging network has also come up in the State with charging stations set up at 65 offices of the enforcement squads. The MVD will be able to mitigate approximately 650 tonnes of CO2 emissions and save on the costs of 2.2 lakh litres of high-speed diesel annually (Source: *The Hindu*, 13 November 2020).

Peacocks are becoming more common in Kerala, and that's not a good sign.

A study published in *Ecological Indicators* suggests that the spread of the peafowl is an indicator to the State succumbing to climate change. The authors, Dr Nameer and Sanjo Jose V says that "dispersal of (the) Indian Peafowl to more areas points to the emergence of suitable drier conditions and open areas formerly not present in the southern Western Ghats." The results reveal that under current climatic conditions, only around 19% of the state's area—in the districts of Thrissur, Palakkad and Malappuram in central Kerala, and Kasargod in north Kerala – are suitable habitats for the peafowl. However, with future climate change, the species could increase their range in Kerala by as much as

41-55% by the 2050s. Midlands and lowlands, except in Alappuzha, Ernakulam, Kottayam and Kozhikode districts are where this range expansion is likely to occur (Source: *Quartz India*, 11 December 2020).

Renowned Malayalam poet-activist Sugathakumari dies of covid-19 complications

Poet, social activist and environmentalist Ms. Sugathakumari passed away following COVID-19 related health complications. She was 86. In a literary career spanning close to seven decades, she used poetry as a tool to express her concerns on environment and oppression of women. She was in the forefront of some of the major environmental protests witnessed in the State in the past half century, right from the Save Silent Valley Movement of the 1970s to the protests against the Aranmula airport in the 2000s. She also played a key role in the movement which culminated in Malayalam becoming the official language in the State. Chief Minister said that Sugathakumari was a poet who stood with the tears of the environment and women. Leader of the Opposition said she was able to instil a new consciousness about the environment through her poetry (Source: *The Hindu*, 24 December 2020).

SPECIES OF THE ISSUE

The Indian honey bee: *Apis cerana indica*



Adults are black in colour, with 4 yellow abdominal stripes. Worker bees are characterized by a pollen press on the hind leg to transport pollen, as well as a stinger in the place of an organ for laying eggs. Queens, which are the reproductive females, are typically larger than worker bees due to their enlarged reproductive organs. Drones, which are the males of the species, are defined by larger eyes, lack of a stinger, and a blunter abdominal shape.

EXPERT TALK

കവിത



കരുത്ത്
Dr സതീദേവി മണിമല

ആരാണെന്നിട നി? ആരല്ലെന്നിട നി?
അറിവിൻ വെളിച്ചമാം കൂട്ടുകാരി
ആലംബമില്ലാതലഞ്ഞിടും മർത്യന്
അഭയമായ് മാറിയ കൂട്ടുകാരി....

അക്ഷരപ്പക്കളാൽ ഭംഗിയായ് തീർത്തൊരു
അക്ഷരമാലയെ മാറോടു ചേർത്തുകൊണ്ടക്ഷര ലോകത്തിൻ
പൊൻതാരമായിക്കൊണ്ടക്ഷര പുണ്യമായെന്നമി മണ്ണിന്
അജ്ഞത നിഷിയിസ്വന്തമ്മമ്മ

ധീരനാം സ്വാതന്ത്ര്യ സേനാനിയായ,
ഇലിക തുമ്പിനാൽ കവിത രചിച്ച
വ്യക്തി പ്രഭാവം ശ്രീ
ബോധേശ്വരന്റെ പുത്രിയായ് മണ്ണിൽ പിറന്നുവീണ
ആദർശ ധീരയായ് മാതൃക കാട്ടിയ
മലയാള നാടിന്റെ പുണ്യമമ്മ....

അശരണാർക്കാരത്രയും നൽകിയോരമ്മ
മനക്കരുത്തുവർക്കാരത്രയമേകി
അത്താണിയായ് കൈത്താങ്ങായി മാറിയ
മലയാള നാടിന്റെ അഭയമമ്മ

മലരണി കാടുകൾ, പുഴകൾ, അരുവികൾ
മലകൾ അതിൻമീതെ പർവ്വതക്കൂട്ടങ്ങൾ
കാടുകൾ, മേടുകൾ, കാവ്യം വനങ്ങളും
മനതാരിലേറ്റി മാറോടുചേർത്ത
മലയാള നാടിന്റെ സുകൃതമമ്മ

മണ്ണിനും പെണ്ണിനും നാടിനും
നല്ലമാനവരാശിക്കു വേണ്ടിയും പട വെട്ടി
പട്ടിണിപ്പാവങ്ങൾക്കാരത്രയമേകിയ
മലയാളനാടിന്റെ ശക്തിയമ്മ....

തിങ്ങിടും മൊട്ടക്കുന്നുകളെങ്ങുമെ
ഹരിതാഭ ചാർത്തിടും അട്ടപ്പാടിയിൽ
കാടിന്റെ മക്കൾക്കങ്ങോളമിങ്ങോളം
പയ്ക്കുന്നവെന്ന് ശബ്ദമുയർത്തിയ
കാടിന്റെ മേടിന്റെ നാടിന്റെ ഹൃത്തിൽ

ഭാരതമണ്ണിന്റെ നാനാ തുരകളിൽ
പൊൻതിരിയേന്തിയ കെടാവിളക്കമ്മ...

നാനാ മത ജാതിചിന്തകളില്ലാതെ
കാപ്യമില്ലാതെ പ്രതിഫലമില്ലാതെ
പുഴകൾ, മലകൾ കാടിന്റെ മക്കൾക്കും
സർവ്വചരാചര ജീവികൾക്കെന്നുമേ
കാടിനും നാടിനും കാവലാളായി കനലിന്റെ
ചൂടുപോൽ കരുത്തേകി അമ്മ....

നിരാലംബരാകും വനിതകൾക്കാലംബം
വൃദ്ധർക്കും പിഞ്ചുകിടാങ്ങൾക്കും ആശ്രയം
പുക്കൾക്കും പുൽക്കൊടിത്തുമ്പിനമാശ്രയം
മണ്ണ്, മനുഷ്യൻ പറവകൾക്കൊക്കെയും
സ്നേഹംനിറച്ചുകൊണ്ടാരത്രയമാകിയ
സ്നേഹത്തിൻ പുക്കൾ വാരി വിതറിയ
വെള്ളിനക്ഷത്രം ആണെന്നമ്മ

ചീവീടിൻ ശബ്ദശകലങ്ങളില്ലാത്ത,
സിംഹവാലന്മാർക്കാരത്രയമാകിയ,
ഇളം കാറ്റിൽ ഇല്ലികൾ ആടിത്തിമിർക്കുന്ന,
കാട്ടു പുഞ്ചോലകൾ കള കളം പാടുന്ന
സൗന്ദര്യധാമമാം സൈരന്ധ്രി തന്നുടെ
കേളീഗേഹം നിശബ്ദതാഴ്വാരത്തെ
രക്ഷിച്ചു ജീവൻ നിലനിർത്തിപ്പോകു വാൻ ഉച്ചത്തിൽ
ശബ്ദമുയർത്തിയ പോരാളി
മലയാള നാടിന്റെ അഭിമാനമമ്മ

മരത്തിനു സ്തുതി ചൊല്ലി ഇലികത്തുമ്പിനാൽ
പുന്തേൻ നിറച്ച പൂമ്പാറ്റകൾ പോലെ
ആയിരം ഭാവനളുട്ടിവളർത്തിക്കൊണ്ടൊരു
തൈ നടാമെന്ന് ചൊല്ലിപ്പാടിപ്പിച്ച
സ്നേഹസമ്മാനം നാടിനു നൽകിയ
അറിവിൻ നിറകടമായിട്ടമ്മമ്മക്ക്
ആയിരമായിരം ആദരവേകി നാം
പദ്മശ്രീ നൽകിക്കൊണ്ടാദരിച്ചുന്നു നാം

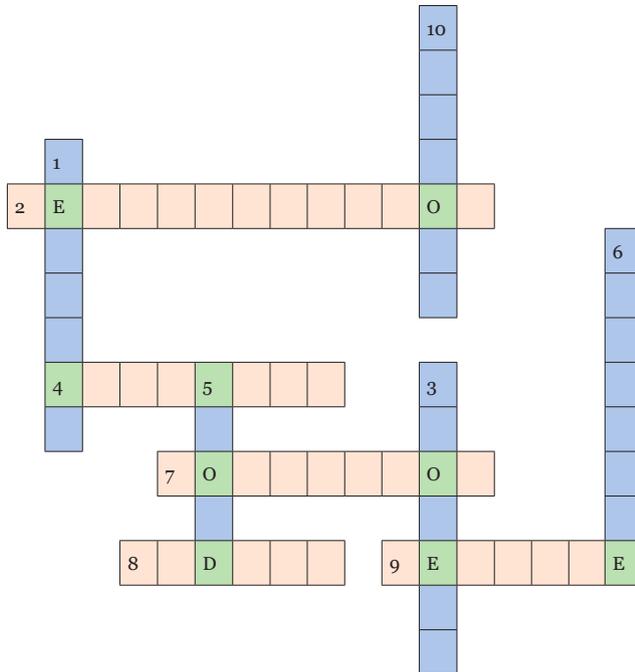
ജീവിത വഞ്ചി തുഴഞ്ഞു തീർന്നിടമ്പോൾ
ജീവൻ ശരീരത്തെ വിട്ടുകലുവോൾ
വേണ്ടാ വെടിയൊച്ച പുഷ്പങ്ങൾ വേണ്ടാ
ആചാരമൊന്നുമെ വേണ്ട വേണ്ടാഎന്ന്
ആവർത്തിച്ചാവർത്തിച്ചലമുറയിട്ടു ജീവിത
ഗന്ധിയാനിനമ്മമ്മ....

പച്ച വിരിപ്പിട്ടു പച്ചപ്പുൽമേടിനും പച്ചമൺതിട്ടക്കും
പച്ച മനുഷ്യനും മണ്ണിൻ മണം പേറ്റും
ഇളംകാറ്റിലാലോലമാടുന്ന മാമരക്കൂട്ടങ്ങൾക്കെന്നുമേ
മഴവില്ലിൻ വർണങ്ങൾ ചാലിച്ച
പോലൊരു നീല വിഹായസ്സിൻ സൗന്ദര്യമമ്മ.....

ചിന്തകളെല്ലാമേ ശുദ്ധമായ് തീർന്നിടാൻ
കർമ്മങ്ങളെല്ലാം ഫലപ്രദമാക്കിടാൻ
നന്മതൻ വാതായനങ്ങൾ തുറന്നിട്ടൊരമ്മ
നമിക്കുന്ന ഞങ്ങളെന്നും ആയിരമായിരം
അശ്രുപുഷ്പങ്ങളാ പാദാവിന്ദത്തിൽ
അർപ്പിച്ചുകൊണ്ടങ്ങൊരു സമർപ്പണം
ചെയ്യുന്നതാ ഞങ്ങൾ അമ്മക്ക് നേരുന്ന
സ്മരണാഞ്ജലി സ്മരണാഞ്ജലി നിത്യ
സ്മരണാഞ്ജലി.

CHILDREN'S CORNER

Using the Across and Down clues, write the correct words in the numbered grid below:



Across	Down
2) The act of cutting down or burning trees in an area	1) To treat things that have already been used so they can be used again.
4) an area of land where large amounts of waste material are buried under the earth	3) to keep safe from injury, harm or destruction
7) something making land, water or sky dirty	5) a large number of water covering an area that is usually dry
8) to make less rubbish	6) to watch and help an animal or the environment
9) to use something again	10) decayed organic material used for growing plants

Answer Key: 1. Recycle 2. Deforestation 3. Protect 4. Landfill 5. Flood 6. Conserve 7. Pollution 8. Reduce 9. Reuse 10. Compost

ACTIVITIES OF WWF-INDIA KERALA STATE OFFICE

PROJECTS:

Assessment of Kerala's Top Ten Rivers at Risk and River Restoration Plans and Programmes for Dept. of Environment and Climate Change (DoECC), Govt. of Kerala

On the Stakeholder Mapping, the review of the draft lists for our Top Ten Rivers at Risk has been completed by ten experts. The KLSO team identified and worked with one expert each for one river. The data shared by the representatives of the various River Collectives have been digitized according to a template. Administrative Maps for all our Top Ten Rivers at Risk were obtained from the Irrigation Design and Research Board (IDRB). For the Handbook on River Walk Protocol, the content has been reviewed internally and has been shared with the Rivers, Wetlands and Water Policy Team for their comments and suggestions. Whereas for the Handbook on Rivers of Kerala, the template has been finalized and shared with the Rivers, Wetlands and Water Policy team for their feedback. The Department of Water Resources, Government of Kerala is planning to carry out a scientific study to facilitate the environmental flow of water in the 41 rivers in the State. We thought about engaging with College of Engineering, Trivandrum (CET) to host the webinar so that we get to train a batch of engineering students who can be further used in our project as Volunteers for our education, awareness and outreach programs with various stakeholders as part of the project. We are looking at the possibility of conducting this digital engagement in March, during the week of the International Day of Action for Rivers.

Marine Turtle Conservation in Kerala Coast for Johnson Lifts & Escalators, Chennai

For the Action Plan charted out for the utilization of the balance funds from Johnson Lifts & Escalators, Chennai, fabrication of Nest Protection Enclosures for relocated nests needs to be done for all the LMTCCGs. Erection of awareness hoardings will be done for Edakazhiyoor as specifically requested by them. Wind Cheaters purchased for the Volunteers of Night Beach Patrolling were sent to Chavakkad and distributed.

ENVIRONMENT EDUCATION:

One Earth, One Home – Oru Bhoomi, Oru Bhavanam in Kerala



The major activities were (a) Liason work with State Education Department and other Chain of Schools (b) Translation of OEOH Content i.e. Workbooks and Videos

into Malayalam (c) Pushing the Content through facebook, WhatsApp and Diksha portal of MHRD (d) Reporting Back from Students through Teachers (e) Data updation with the EE Team. OEOH Marine Matters content was also translated into Malayalam. The State Launch of Marine Matters was held on 29th November 2020 which was attended by 72 participants which included Teachers and Principals.

5	Orientation for Teachers on “Practical Tips to Reduce Individual and Household Energy Footprints” by Shri. Ijas M.A., Energy Technologist, EMC Kerala for Bhavana’s Varuna Vidyalaya, Thrikkakara	18/12/2020	210
Total			392



Volunteer Engagement Program (VEP)

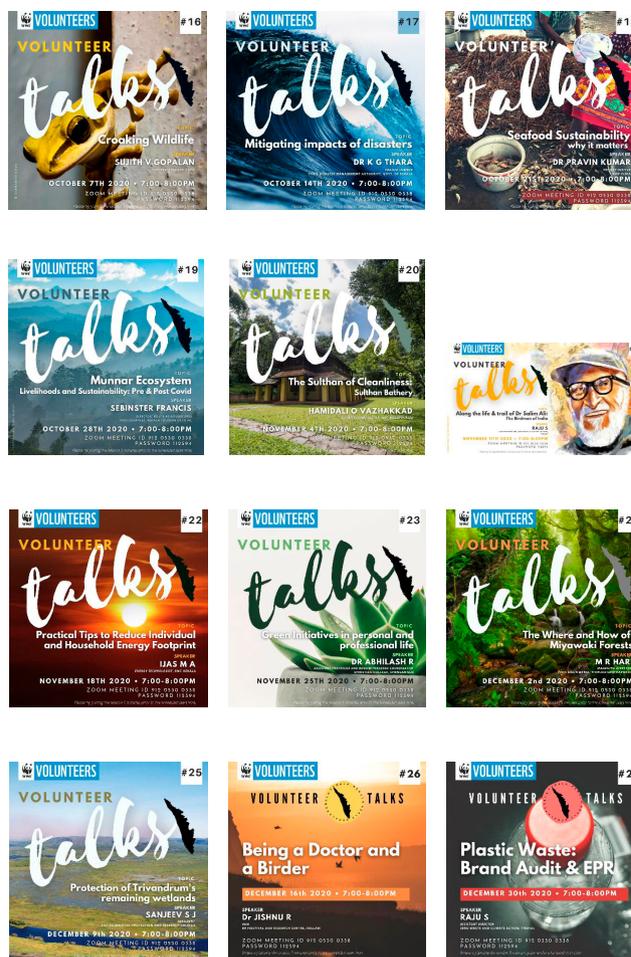
ECHO – Building Environment Conservation ECHO

LoUs were obtained from 18 ECHO Colleges with 90 Students from Kerala. The proposals submitted by the College Teams were reviewed. Timely communication and necessary follow-up was carried out to ensure the participation of the College Students in the National Launch Event and also in the Interaction with Expert session with Ms. Anjana Shanmugavel conducted on 3rd December. Registration Certificate were sent out to all the 15 registered



The other additional engagements with their outreach numbers are:

Sl. No.	Activity	Date	Outreach Numbers
1	International Day of climate Action - “Climate action and you” by Renjan Mathew Varghese - for Teachers and Students of OEOH	23/10/2020	52
2	Orientation Session - CSI Cochin Diocese	5/11/2020	38
3	OEOH Marine Matters	29/11/2020	72
4	Biodiversity in My Backyard - Veena M	6/12/2020	20



ECHO Colleges. Progress reports are being collected and necessary hand holding given to all the ECHO colleges.

Volunteer Talks (VT)

This is the weekly digital engagement for our Volunteers - every Wednesday from 7:00 – 8:00 PM on the Zoom platform. During October to December, we have successfully completed 12 Volunteer Talks. Certificates of Appreciation were sent out to the speakers digitally post the session.

Magical Mangroves (MM)

The Orientation Meeting for the Volunteers of Magical Mangroves were conducted on 8th October. Further on, the “Training of Trainers” was organized on 10th October with Dr Jafar Palot of ZSI, Pune as the Expert. These trainers then undertook outreach webinars between 23rd to 27th October.

As part of review of the progress of work, meeting on “Magical Mangroves – The Way Forward” was conducted on 3rd December. Nominations for Best Performing Volunteers were sent to EE Division.

Eco-Trails to Eco-Talks (ET)

Friday Forums of yesteryears have been converted to the digital Zoom platform under the title Eco -Talks. We are inviting school students attending our various EE programs for this Talk.

Sl. No	Activity	Date	Outreach Numbers
1	Eco Talks #1 – “Silence of the Cicadas – V Ajayagosh, Assistant Wildlife Warden	11/12/2020	184

The Caggemini Mission Million Campaign – 20,000 Fruit Tree Planting in Neyyattinkara

It is implemented in association with Academy for Mountaineering and Adventure Sports (AMAS), Neyyattinkara. The fruit tree planting was implemented at 19 sites in and around Neyyatinkara covering 4000+ households at five saplings per household. Around 23,000 saplings were raised by AMAS, for planting. KLSO Team attended the Caggemini Mission Million Campaign Launch at Aruvippuram near Neyyattinkara by planting 86 saplings along with members of AMAS. Sugathakumari Teacher, who was a renowned poet and environmentalist in Kerala passed away on 23rd December at the age of 86. She was closely associated with WWF and AMAS and hence it was decided to plant 86 saplings in her fond memory.





Dragonfly Festival in Kerala (DFF)

Dragonfly Festival in Kerala (Thumbimaholsavam) is jointly organized with the Society for Odonate Studies and Thumbipuram. Three “Training of Trainers (ToTs)” programs were conducted. We have sent formal invitation to the various Government Departments for formal association to organize webinars, such as Chief Wildlife Warden, Kerala Forests & Wildlife Dept., Member Secretary, Kerala State Biodiversity Board (KSBB), Executive Vice-President, Kerala State Council for Science, Technology and the Environment. Photography Competitions were organized for three themes under two categories – Mobile and DSLR. The Dragonfly Backyard Watch continued to 15th October 2020. An article about this was also given for publishing in the local editions of newspapers.

Sl. No.	Activity	Date	Outreach Numbers
1	Sree Ayyappa College - Uma Lekshmi and Vivek	22/12/2020	65
2	Sujith VG and Vivek Chandran - SN College, Kollam	22/12/2020	96
3	Balachandran V and Govind Girija - SN College, Chempazhanthu	26/12/2020	71
Total			232

Office Family Outing to Kallar

The staff with family had an outing on 23rd December to Kallar Forests.



EDITORIAL BOARD

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Published by WWF-India, Kerala State Office, Vanchiyoor P.O., Thiruvananthapuram - 695035
 Phone: 0471-2302265, email: wwfkso@gmail.com, Web: wwfindia.org
 Computer Graphics: Soft and Soft, Sasthamangalam, Phone: 9447451314, Printed at: New Multi Offset, Tvpmm