



WORKING
TOGETHER FOR
MANGROVE
CONSERVATION



REPORT

IND

2021

Godrej & Boyce and
WWF India partnering in
MAGICAL MANGROVES
2020-2021







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FOREWORD



Mangrove ecosystem is considered to be the most productive ecosystem across the world. Coastal states of India, including Kerala, once had good mangrove cover which stood as bioshields aiding in coastal protection. But in the name of various development projects along the coast, vast extent of mangroves has been destroyed all over the country. Understanding their values, functions and services, especially in the context of helping mitigate impacts of global warming and climate change, several measures have been initiated globally and nationally towards protecting the remaining mangrove ecosystems. The situation is the same in Kerala too where we have lost major tracts of mangroves in Veli in Thiruvananthapuram, Ashtamudi in Kollam, Puthuvypin in Ernakulam and Chettuwa in Thrissur. Some prominent patches of mangroves are left behind in Kozhikode and Kannur. It is the real need of the hour to step up protection of the remaining mangroves, especially through more outreach, awareness and education campaigns targeting different sections of the society and encouraging people to take up local-level efforts to protect the mangroves in and around their own locality. That is where *Magical Mangroves* finds its significance. When we put out the call for volunteers, many College Teachers in our network came forward, participated in the Training of Trainers, got themselves equipped, went out and conducted many more webinars to reach out to students and youth. I would like to take this opportunity to thank each one of them, who has contributed to *Magical Mangroves*. In 2020-21, with the Covid pandemic, we did not have any other option, but to go digital and organize outreach webinars. We could not have any on-ground engagements because of the Covid protocol. With the success of *Magical Mangroves 1.0* last year, this year also we are gearing up with much more impactful programs aimed at reaching more people to become aware and move towards action. I am happy to present this report to the wider audience.

Mr. Renjan Mathew Varghese

State Director (Kerala), WWF India.

ABOUT



Godrej & Boyce

Godrej & Boyce ('G&B'), a Godrej Group company, was founded in 1897, and has contributed to India's journey of self-reliance through manufacturing. G&B patented the world's first springless lock and since then, has diversified into 14 businesses across various sectors from Security, Furniture, Aerospace to Infrastructure and Defense. Godrej is one of India's most trusted brands serving over 1.1bn customers worldwide daily. For more information visit www.godrej.com. Godrej & Boyce has been raising awareness about mangrove conservation through several initiatives such as creation of Asia's first Mangroves Mobile App available in 11 languages, a unique children's storybook 'Many Secrets of Mangroves' in collaboration with renowned author Katie Bagli published English and Marathi, bi-lingual informative website and poster exhibitions across educational institutes and more. To know more about the campaign 'Magical Mangroves', visit www.mangroves.godrej.com



WWF India

WWF India is committed to creating and demonstrating practical solutions that help conserve India's ecosystems and rich biodiversity. With more than 50 years of conservation journey in the country, WWF India works towards finding science-based and sustainable solutions to address challenges at the interface of development and conservation. WWF India is part of the WWF network, with offices in over 100 countries across the world. WWF India works in many states of India, through our state and field offices. The organisation works in different geographical regions and across thematic areas, including the conservation of key wildlife species and their habitats, management of rivers, wetlands and their ecosystems. On the sustainability side, the focus areas are climate change adaptation, driving sustainable solutions for business and agriculture and empowering local communities as stewards of conservation. We also work in combatting illegal wildlife trade and in bringing environment education to students through outreach and awareness campaigns. <http://www.wwfindia.org>





What are Mangroves?

Mangroves are coastal forests. The term mangrove originates from the Senegalese word 'mangue', which means 'into the sea'. Mangroves are halophytes i.e., salt tolerant plants. The ecosystem of mangroves establishes and grows at the interface of land and water bodies like the sea, creeks, estuaries, bays and lagoons, most commonly found in the inter-tidal area, between the high tide and the low tide. This ecosystem is believed to have evolved around 114 million years ago in tropical and subtropical regions.

The mangrove ecosystem is characterized by excess salt in its environment (air, soil, water). The soil is covered with sea water twice a day due to high tides. Wind and tidal force exert continuous pressure on the resident living beings. Fresh water supply is limited, available only during low tide when fresh water bodies flow towards the seas.

Based on their ability to tolerate salinity, mangrove species are located at various distances from the water body making them 'front', 'mid' and 'back' mangroves. Mangroves exhibit unique adaptations to survive and flourish in a difficult environment. However, their strategic intertidal location provides a habitat for very diverse plant and animal species making a mangrove ecosystem very productive.

About 60% of the world's population lives in coastal areas. The mangroves create an ecosystem full of diverse flora and fauna that provide valuable silent services to mankind. These services vary in nature and magnitude depending on the health of the ecosystem. They provide provisioning services like fresh food items like fruits, leaves, fish, prawns, crabs, lobsters, etc. We also get raw materials including tannin and timber from these forests.

They play an important role in regulating the environment. They provide a natural canopy to protect against sunlight. Transpiration taking place in the region helps maintain temperature and humidity. They sequester carbon in the biomass and sediment. Research has proved that the general rate of carbon sequestration of mangroves is more than that of most terrestrial ecosystems. Mangrove forests also moderate natural disasters like tsunamis and floods by acting as a buffer between the waters and coastal communities. Mangroves prevent soil erosion by a complex network of cable, stilt and breathing roots which act as natural barriers.

The extensive root network of mangroves also traps silt and pollution. Mangroves are the natural habitat for a wide range of species and provide feeding, roosting, and breeding areas for resident and migrant species. Mangroves also provide recreational space for local human communities. The rich biodiversity, greenery and aqua scape of the mangrove region provide excellent ecotourism and educational opportunities. They function as a living laboratory and functions as an excellent tool for research.



Where are mangroves found?

The mangrove ecosystem populates 117 tropical and sub-tropical countries, needing a minimum 24°C temperature to thrive. The largest mangrove forest of in the world is Sundarbans, spread across parts of India and Bangladesh. In India, mangroves are distributed across all coastal states and islands. The distribution of Indian mangroves as on September 2021 is as follows

Kerala has 590 kms of long narrow coastal line. Mangrove vegetation occurs along the banks of estuarine water bodies and adjacent to the back water channels, in the form of a narrow continuous belt or patches. The regular tidal flooding and fresh water supply from the 41 perennial rivers create a suitable ecological environment leading to the development of mangroves

West Bengal	2,112 sq km
Andaman & Nicobar Islands	616 sq km
Odisha	251 sq km
Tamil Nadu	45 sq km
<i>Kerala</i>	<i>9 sq km</i>
Puducherry	2 sq km
Gujarat	1,177 sq km
Andhra Pradesh	404 sq km
Maharashtra	320 sq km
Goa	26 sq km
Karnataka	10 sq km
Diu-Daman	3 sq km

(Source: India Forest Cover Report 2019 by the Forest Survey of India)

on the fringes of backwaters, estuaries and creeks. Kannur and Kasaragod districts have maximum area of mangroves. The other districts include Trivandrum, Kollam, Alappuzha, Kottayam, Ernakulam, Thrissur, Kozhikode, and Malappuram, along with the three identified Ramsar sites, namely Ashtamudi, Sasthamkotta, and Vembanad.

A growing threat to the global mangrove ecosystem is climate change with its associated increasing temperatures, flooding, changing hydrologic regimes, rising sea level, increasing magnitude and frequency of tropical storms and natural calamities like tsunamis. Their location at the interface between land and sea make mangroves one of the first ecosystems to be affected. The ecosystem is also rapidly losing its biodiversity by falling prey to the anthropogenic activities like land reclamation, water pollution from domestic and industrial sewage, agriculture and aquaculture, cutting of mangroves for firewood, dredging of sand, poaching of wildlife etc.

Magical Mangroves Phase 1 - 2020-21

On the occasion of International Day for the Conservation of the Mangrove Ecosystems, Godrej & Boyce Mfg. Co. Ltd., in collaboration with WWF India (World Wide Fund for Nature, India) launched 'Magical Mangroves', a nationwide campaign which highlights the significance of mangroves conservation in present times.

The campaign spanned across 8 states including Maharashtra, Goa, Gujarat, Andhra Pradesh, Tamil Nadu, Kerala, Odisha and West Bengal. It promoted awareness on the importance of the mangroves ecosystems and invited citizens to become volunteers to help in promoting the same. The volunteers were engaged for a period of six months and were a part of webinars, film screenings, online quizzes, digital story-telling sessions among other activities. The volunteers got an opportunity to interact with mangrove experts like Dr Kathiresan, Honorary Professor, formerly Dean and Director, Centre of Advanced Study in Marine Biology and Mr N Vasudevan, IFS.



Magical Mangroves Program in Kerala

The Magical Mangroves program was conducted in Kerala with the help of 22 committed volunteers. The volunteers included Teachers from various colleges across Kerala covering most of the districts, students and other interested citizens.

A Training of Trainers (ToT) was organized by WWF India, Environment Education Division to prepare the Volunteers for further activities. This was attended by the 22 volunteers from Kerala also. They also shared PowerPoint presentation and other requirements that the Volunteers could use during the outreach programs. Twenty-nine Volunteers attended the ToTs.

Dr Jafer Palot gave an Expert Talk on 24th October 2020, to the Volunteers on Mangroves of Kerala as part of the State level - Training of Trainers.

DEPT. OF ZOOLOGY
Govt. Arts and Science College, Meanchanda

WEBINAR

Inauguration: **Joshil Maliyekkal**
ACF - Social Forestry, Kozhikode

Key Speaker: **Dr. Jafer Palot**
Scientist, ZSI Pune

Moderator: **Prof. Abdul Riyas K**
Asst. Professor (Zoology), GASC Calicut

DATE : 24.10.2020
TIME : 4:30 PM
PLATFORM : GOOGLE MEET

MAGICAL MANGROVES
JOIN THE MOVEMENT

WWF 50th Anniversary Logo and Gony Logo

Participants: Renjan Mathan, Jafer Palot, A.K. Sivakumar, Udayan, Vishnu Kartha, Sreelekshmi.S

Derris scandens പത്താലിനുള്ളി

Three images showing the white flowers of Derris scandens.

Participants: 29, Chat, Share Screen, Record, Reaction

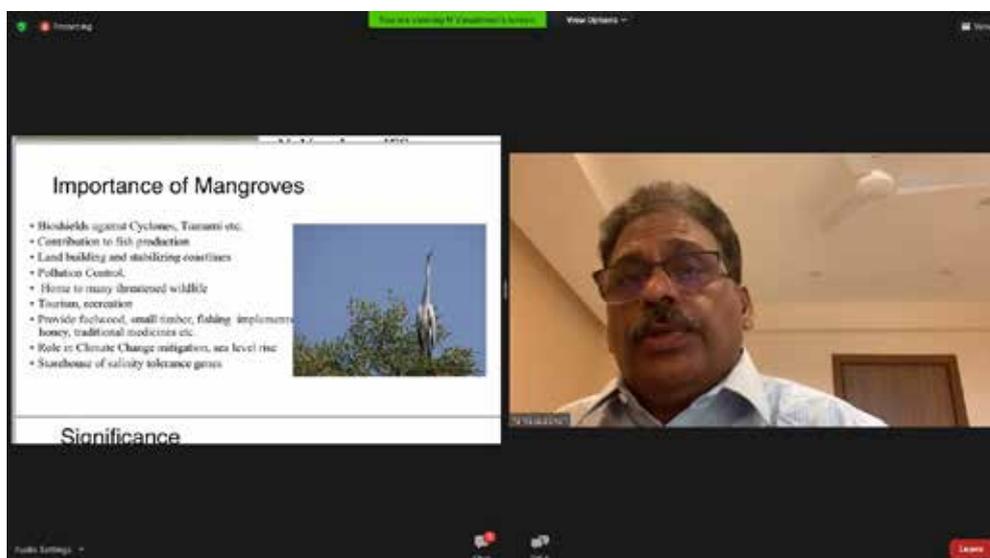
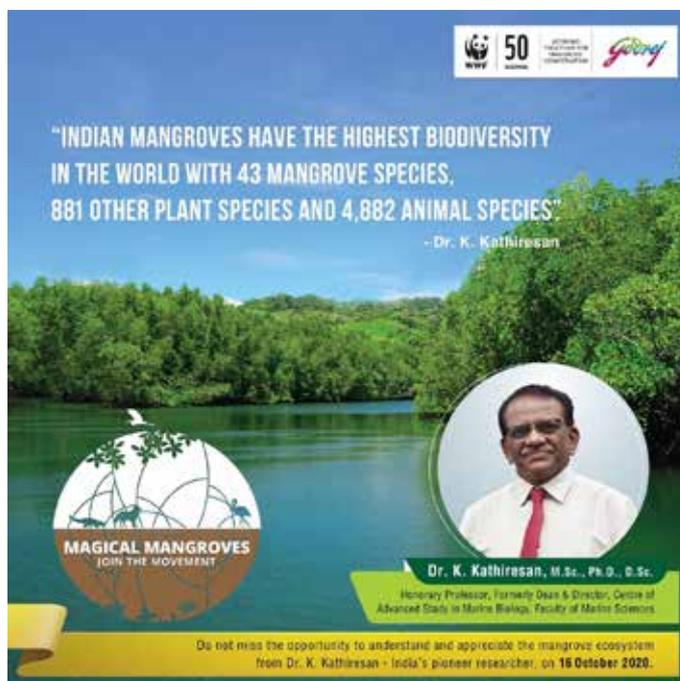
A State-level coordinated launch was organized on 24th October 2020 across the districts of Kerala with the active participation of volunteers organizing webinars in their own institutions and also at other educational institutions nearby.

Twenty-two Volunteers then took the program forward by organizing webinars to specific target audience - college students and school students.

Two documentaries on mangroves titled “Forest of the Tide” and “Magic of the Mangroves” was also shared with the Volunteers and they in turn screened it for wider outreach.

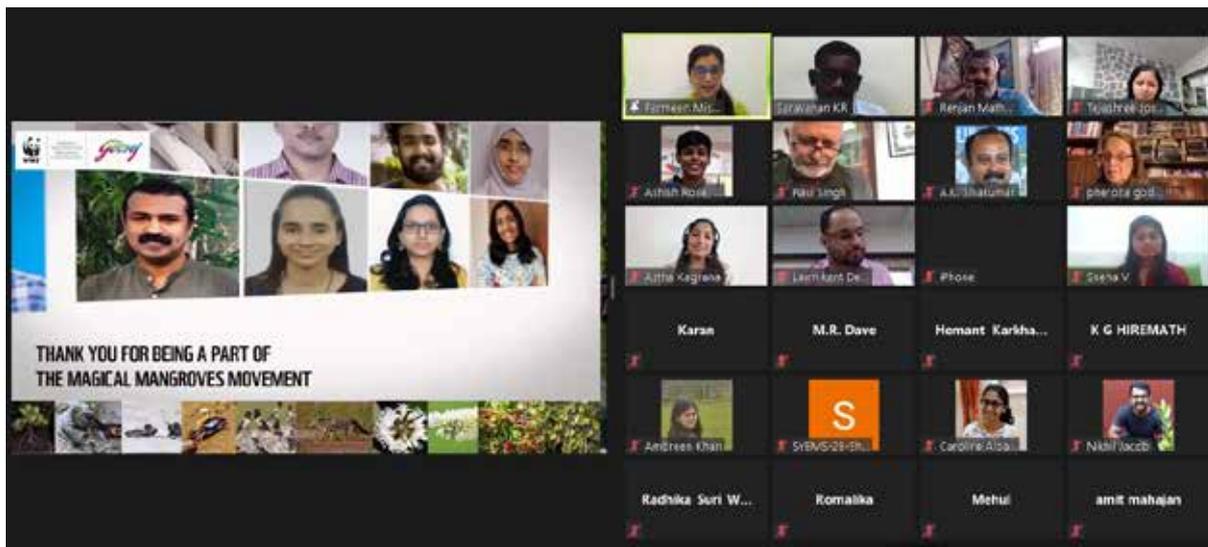
A total of 41 webinars were conducted by them and the outreach was 2610. Certificate of Participation was also given to all participants.

All the volunteers also attended expert talk sessions taken by (1) Dr. K Kathiresan on October 16th (2) Mr. N Vasudevan on 9th January 2021 (3) and Dr. Anurag Danda on 30th January 2021.



Session By Mr. Vasudevan, a passionate mangrove conservationist

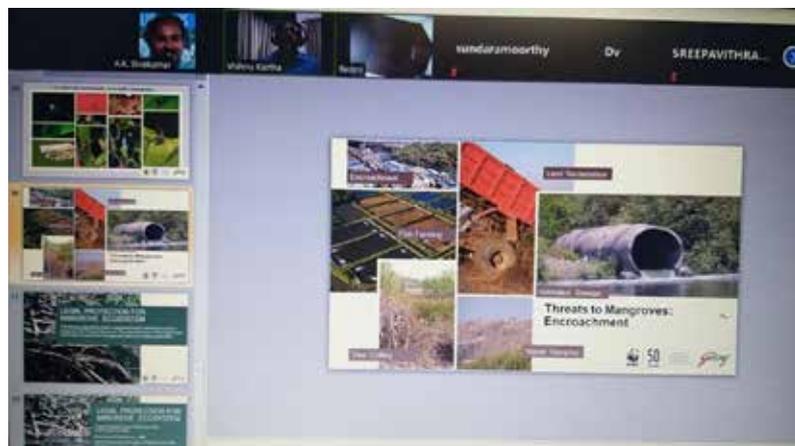
The program came to a close on World Wetlands Day on 2nd February 2021 with an online felicitation ceremony and volunteers from all over India participated in it.



Volunteer Outreach

Sl. No.	Name of Volunteer	No. of Webinars	Outreach
1	Dr. Ayona Jayadev	4	218
2	Martina Mathew	1	40
3	Anjaly Jayamon	2	165
4	Athira M Nair	1	34
5	Dr. Ganga G	8	441
6	Dr. Abhilash R	1	94
7	Umalekshmi R	4	249
8	Sarlin P J	1	50
9	Priya Thomas	2	126
10	Jisha S	5	338
11	Abdul Riyas K	1	38
12	Jain J Therattil	1	62
13	Dr. Prajith P K	1	86
14	Dr. Sreeja P	2	220
15	Dr. Deepthy M R	1	110
16	Dr. Jacob Thomas	1	59
17	Elias Rowthar	1	30
18	Alen Alex Philip	1	54
19	Vishnupriyan Kartha	1	17
20	Dr. Dhanya R	1	43
21	Haritha Rajan	1	90
22	Dr. Sojo Mathew	1	46
	Total	41	2610

Good Earth Organization and FON India associated with the Volunteers to organize webinars.



Post Graduate & Research Department of Botany
Mar Thoma College, Tiruvalla
 Pathanamthitta District, Kerala - 689103
 (Re-accredited with A Grade by NAAC)
 (Affiliated to Mahatma Gandhi University, Kottayam)

Inauguration
 Mr. Mathew P. Thomas
 District Coordinator (Pathanamthitta)
 Kerala State Biodiversity Board

Key Note Speech



Dr. Abdussalam A.K.
 Asst. Professor & Research Guide
 Sir Syed College, Tahaliparamba, Kannur

MAGICAL MANGROVES
 JOIN THE MOVEMENT

24/10/2020 7:00PM TO 8:00 PM
 Google meet link: <https://meet.google.com/whi-vksr-ufj>

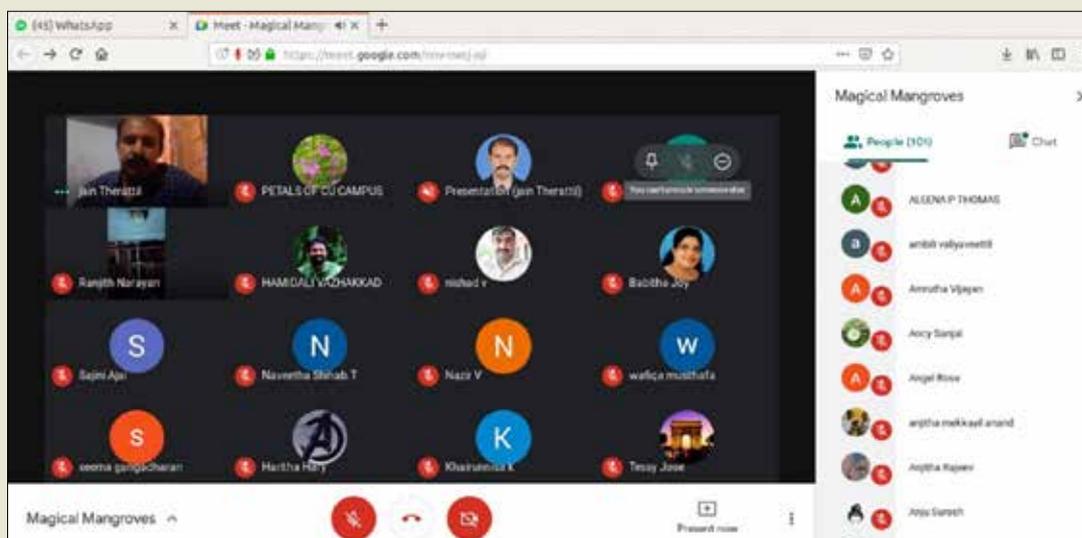


SREE AYYAPPA COLLEGE, ERAMALLIKKARA ALAPPUZHA

A Webinar on Mangroves and the importance of their conservation

24
 11. 30 AM – 12. 30 PM IST

MAGICAL MANGROVES
 JOIN THE MOVEMENT

The screenshot shows a Google Meet session titled "Magical Mangroves". The main window displays a grid of 16 participants, each with a profile picture and name. The names visible are: Jan Therasil, PETALS OF CU CAMPUS, Presentation (Jan Therasil), Nov nellanackkummarath, Ranjith Narayan, HAMEDALI VADAKKAD, mihad e, Sachitha Joy, Sajini Aji, Navartha Shrab T, Niaz V, wafica muhithafa, seema gangacharan, Haritha Hony, Khairunnisa K, and Tincy Jose. On the right side, a sidebar lists the names of all participants: ALEENA P THOMAS, anitha valiyannil, Anantha Vijayan, Arcy Sange, Ansel Bawa, anitha melkappil anand, Anitha Rajeev, and Anja Suresh. At the bottom, there are icons for mute, video off, and chat, along with a "Present now" button.

**National Green Corps,
Malappuram District**

Date: 24th October 2020
Time: 2.30 - 3.30pm
Link: <https://meet.google.com/nnv-nwsj-njl>

Resource Person:
Dr. Jain J Therattil
Dept. of Zoology
St. Aloysius College, Thrissur

Convenier of the program:
Dr. Deepthi - 9447387670

Webinar on



MAGICAL MANGROVES
JOIN THE MOVEMENT



GREEN HABITAT
Dept. of Botany Sree Krishna College, Guruvayoor
Dept. of Zoology Little Flower College, Guruvayoor
Dept. of Zoology St. Aloysius College, Elthuruth
Thrissur District

Resource Person
Dr. Swapana Johny
Dept. of Zoology
Asst. Professor & Head
Little Flower College, Guruvayoor



Meeting link:
<https://meet.google.com/hwr-pgde-cog>

Platform : Google Meet
24.10.2020
4.00 P.M

Moderator: Dr. Udayan P.S
Programme Coordinator: Dr. Jain Therattil

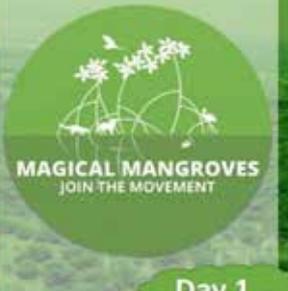


MAGICAL MANGROVES
JOIN THE MOVEMENT



SREE NARAYANA COLLEGE, KOLLAM

Magical Mangrove Webinar Series
A Nation-wide Campaign for Mangrove Awareness



MAGICAL MANGROVES
JOIN THE MOVEMENT

Day 1

24/10/2020 4PM TO 5PM - GOOGLE MEET



MAGICAL MANGROVES
JOIN THE MOVEMENT

Speaker:
Elias Rowther B
BSc Volunteer
College of Veterinary and Animal sciences,
Pookode, Wayanad

24-10-2020
7pm

For more details
9496789779
9496344025

Join via google meet

WHY MANGROVES MATTER - REGULATING?

Participants: You, RENUJ, 26 others

MAGICAL MANGROVES
JOIN THE MOVEMENT

SPEAKER:
Ms. Priya Thomas
Assistant Professor

Launching on 24 October 2020, 10 a.m.

Join using:
<https://meet.google.com/kvr-xjoh-xzc>

MODERATOR:
Mr. Sojomon Mathew
Assistant Professor

Department of Zoology
Bishop Chulaparambil
Memorial College, Kottayam

Department of Zoology
Government College
Kottayam

MAGICAL MANGROVES

JOIN THE MOVEMENT

WELCOME SPEECH



Dr. Elizabeth Basil
Assistant Professor
Department of Zoology
Bishop Chulaparambil
Memorial College, Kottayam

PRESEDENTIAL ADDRESS



Dr. Teena Annah Thomas
Principal
Bishop Chulaparambil
Memorial College, Kottayam

KEY SPEAKER



Ms. Priya Thomas
Assistant Professor
Department of Zoology
Bishop Chulaparambil
Memorial College, Kottayam

VOTE OF THANKS



Mr. Sojomon Mathew
Assistant Professor
Department of Zoology
Government College,
Kottayam

Join using: <https://meet.google.com/kvr-xjoh-xzc>

Launching on 24 October 2020, 10 a.m.

Webinar on MAGICAL MANGROVES

A nationwide campaign for mangrove awareness
launched by Godrej Boyce and WWF India

24.10.20, 10.30 am

Platform: Google Meet

INAUGURATION

Dr. V. Balakrishnan Pattali
(Former Member Secretary Kerala State Biodiversity Board)
Deputy Superintendent of Police, Vigilance and
Anti-corruption Bureau, Kasaragod

Topic: **MANGROVE: The Wonders of Nature**

KEY SPEAKER

Dr. Sreeja, P.
Assistant Professor,
Dept. of Botany, Sir Syed College,
Taliparamba, Kannur, Kerala

MODERATOR

Dr. Abdussalam, A.K.
Assistant Professor,
Dept. of Botany, Sir Syed College,
Taliparamba, Kannur, Kerala

WELCOME

Dr. Prajith, P.K.
Assistant Professor,
Dept. of Botany, N.S. College,
Kanhgadi, Kasaragod, Kerala

FELICITATION

Mr. Biju, P.
Dept. of Botany,
Govt. College, Kasaragod,
Kerala

Organized by

WWF India, Godrej & Boyce Ltd.
Kasaragod Zone, Kerala State

In association with
Department of Botany, Govt. College, Kasaragod
Nellu Arts and Science College, Kanhgadi

For more details:

8301831529,
8281788934
9847654285

**Magical Mangroves
Join the Movement**

Webinar on MAGICAL MANGROVES

A nationwide campaign for mangrove awareness
launched by Godrej Boyce and WWF India

24.10.20, 3.30 pm

Platform: Google Meet

INAUGURATION

Dr. K.T. Chandramohan
Syndicate Member, Kannur University
Member, Kerala State Biodiversity
Board, Assistant Professor and Head,
Govt. Brennan College,
Thalassery, Kannur, Kerala

WELCOME

Dr. Tajo Abraham
Asst. Professor and Head,
Dept. of Botany, Sir Syed College,
Taliparamba, Kannur, Kerala

FELICITATION

Dr. T.R. Nafesa Baby
IQAC Coordinator
Sir Syed College, Taliparamba,
Kannur, Kerala

KEY SPEAKER

Topic: **MANGROVE:
An Ecological Wonder**

Dr. K. Kathiresan
Honorary Professor,
CAS in Marine Biology,
Anna University, Tamil Nadu

MODERATOR

Dr. Sreeja, P.
Assistant Professor,
Dept. of Botany, Sir Syed College,
Taliparamba, Kannur, Kerala

VOTE OF THANKS

Dr. Abdussalam, A.K.
Assistant Professor,
Dept. of Botany, Sir Syed College,
Taliparamba, Kannur, Kerala

Organized by

WWF India, Godrej & Boyce Ltd.
Kannur Zone, Kerala State

In association with
Department of Botany, Sir Syed College
Taliparamba, Kannur, Kerala

For more details:

9447438447,
9847654285

**Magical Mangroves
Join the Movement**

Webinar On
MAGICAL MANGROVES
A remarkable struggle to conserve mangroves initiated by
Birds Club and WWF India

PALAKKAD ZONE, KERALA STATE
24.10.2020, 4:30 PM
Platform: Google Meet

INAUGURATION
Dr. P. Haridasan
Principal (SpI grade)
Govt. Victoria College, Palakkad

KEY SPEAKER
Dr. Suresh V.
Assistant Professor
Dept. of Botany
Govt. Victoria College, Palakkad

Organized by
Godrej & Boyar Ltd., WWF India

For more details:-
8547277766
(Arun Alex Philip)

P.G. DEPARTMENT OF ZOOLOGY
CHRISTIAN COLLEGE, CHENGANNUR, ALAPPUZHA

MAGICAL MANGROVES WEBINAR SERIES
A nationwide campaign for Mangrove Awareness

WWF 50 YEARS WILDLIFE CONSERVATION Godrej

MAGICAL MANGROVES JOIN THE MOVEMENT

THE FASCINATING WORLD OF MANGROVES
കണ്ടലുകളുടെ വിസ്മയ ലോകം

24-10-2020, SATURDAY | 7.00 pm | Platform: Google Meet

INAUGURATION
Sri. JAYARAJ
Film Director,
Founder, Birds Club International

KEYNOTE ADDRESS
Dr. JAIN J. THERATTIL
Asst. Prof., Dept. of Zoology
St. Aloysius College, Elthuruth, Thrissur

Supported by
Birds Club

For More Details:
Dr. ABHILASH R. (Organising Secretary) Mob. 9447218603

Certificate given to College

MAGICAL MANGROVES JOIN THE MOVEMENT

CERTIFICATE OF PARTICIPATION

This is to certify that

P. G. Department of Zoology, Christian College, Chengannur, Kerala
participated in the *Magical Mangroves – Join the Movement* programme
and facilitated awareness about this fragile ecosystem among their students.

Mr. Anup Mathew
Sr. Vice President & Business Head
Godrej Construction

Ms. Radhika Suri
Director, Environment Education
WWF India

WWF 50 YEARS WILDLIFE CONSERVATION Godrej

TESTIMONIAL

“I thank WWF India, Kerala State Office and Godrej Foundation for giving me this great opportunity to be part of this Magical Mangroves awareness webinar series. After conducting many webinars and reaching out to many students, I fell into the magical spell of mangroves the precious ecosystem. We found curious minds in the audience and I am sure that webinars have sparked mangrove awareness among our participants. Personally, conducting these sessions has polished my organizing skills and public speaking skills as well. I am definitely looking forward to many such conservation activities in the future”

Dr Jisha S., *S N College, Kollam*

Kerala Team



Renjan Mathew Varghese
State Director (Kerala)



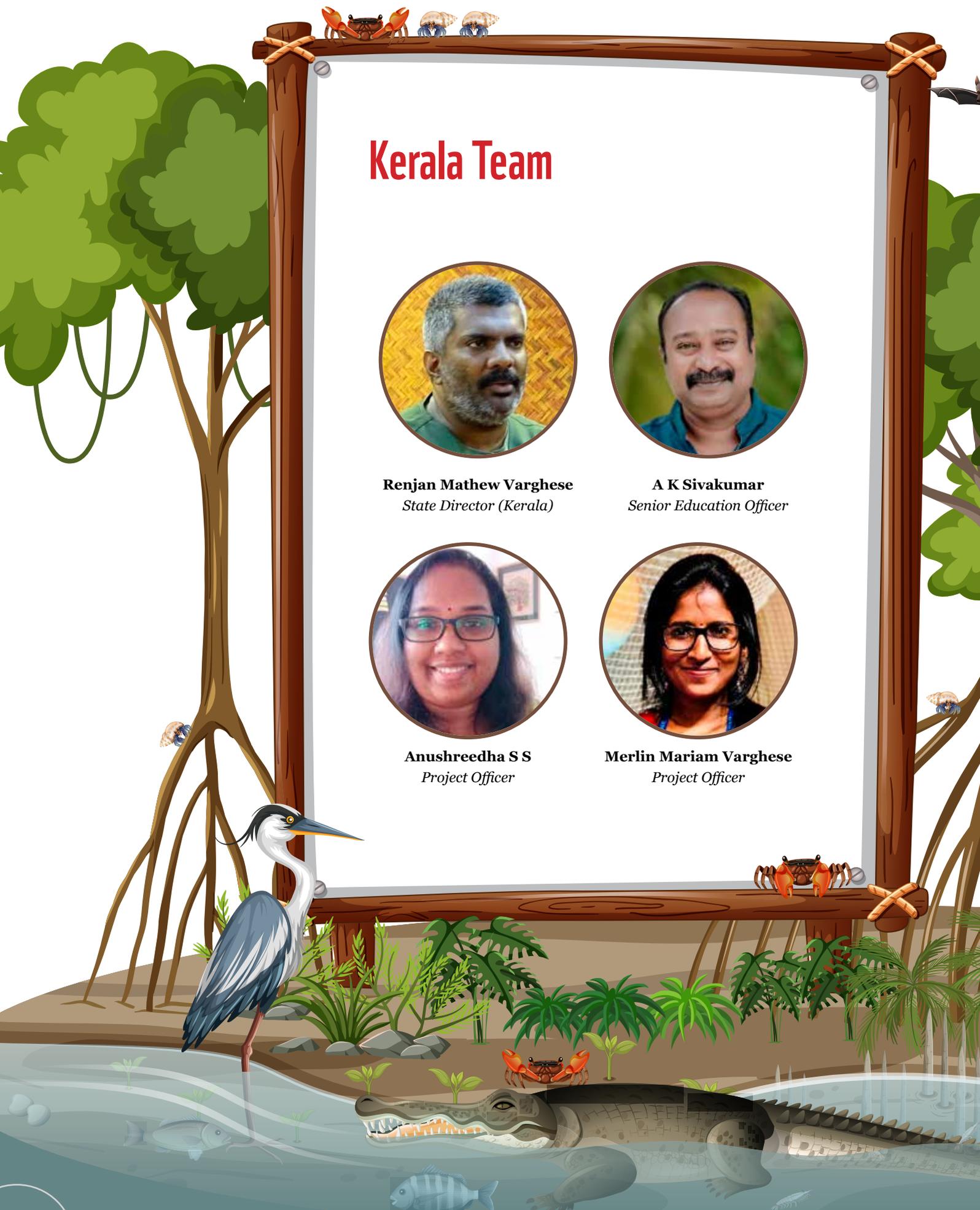
A K Sivakumar
Senior Education Officer



Anushreedha S S
Project Officer



Merlin Mariam Varghese
Project Officer







Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.panda.org

**World Wide Fund for Nature – India
(WWF-India)
Kerala State Office**

Vanchiyoor P.O., Thiruvananthapuram – 695035, Kerala State, India
Ph: 91-471-2302265 Email: wwfklso@gmail.com Web: www.wwfindia.org