



Conservation Highlights of WWF-India, Kerala State Office

FROM THE STATE DIRECTOR'S DESK

Invasive Alien Species are now posing one of the biggest threats to native biodiversity in India and Kerala, and to a great extent worldwide too, and that too on land and in water. In our state of Kerala, our urban and rural landscapes and waterscapes are now covered with invasives. But unfortunately, we don't realize it, and it is all attributed as green cover in God's Own Country. The alarming fact is that our forests, not just the tourism or buffer zones, even the core zones, are now overtaken by invasives. Through research and documentation, especially through agencies like KFRI, we know a lot about invasives, but much talked about, with little action. Many conferences, workshops, seminars, and symposiums have been held on invasives. In most of these relevant platforms, I have always been advocating for declaring a particular day in the year as part of the

Environmental Calendar as "Day against Invasives" and to mobilize organised groups under the NCC, NSS, Boomitra Sena Clubs, Eco Clubs, Student Police Cadets, CRPF, Army, Kudumbasree, MNREGS Workers, etc. for creating more awareness on invasives and call for collective action to eradicate invasives. But these are falling on deaf ears. Now, the Kadar Tribes in and around Athirappilly-Vazhachal Forest Divisions are gearing up to combat this menace with the support of WWF-India and KFRI. Let us see and learn from them. Quoting Albert Einstein "Those who have the privilege to know have the duty to act". Let us all awake to this imminent danger, move into action as responsible green citizens today for a better tomorrow.

Renjan Mathew Varghese

Renjan Mathew Varghese State Director

RECENT DEVELOPMENTS IN NATURE AND ENVIRONMENT

Global

World's largest coral discovered in the Pacific Ocean unharmed by global warming

Scientists have discovered the world's largest coral in the Solomon Islands. Distinct from a coral reef, which is a collection of coral colonies, this gigantic organism is a network of coral polyps. It measures 34 metres wide and more than five metres high, making it longer than the world's biggest mammal, the blue whale. It is so huge that it is visible from space. This mega coral, considered around 300 years old, is exciting because it could provide unique insights into historical ocean conditions. Scientists discovered the huge coral in the southwest Pacific Ocean while working from the Pristine Seas research vessel. It's three times larger than any previously discovered coral. To the untrained eye, it looks like just a huge rock, but a member of the National Geographic Pristine Seas team dove down to take a closer look and quickly realised it was a mega coral or 'pavona clavus'. The research team is living and working aboard their vessel on a months-long expedition that aims to advance ocean conservation by using cutting-edge technology to better understand the marine ecosystem in the Solomon Islands. (Euronews, 14th November 2024)

Illegal trade booms in South Africa's 'super-strange looking' plants

A biodiversity hotspot in a remote part of South Africa has become the hub of an illegal trade in protected plant species, with organised crime groups capitalising on overseas demand. In Kamieskroon, a small town in the centre of South Africa's Namaqualand region, the rolling hills have become a haven for poachers. Some of the species are highly localised, and so can be wiped out by just a small amount of poaching. Most of the plants in question are a variety known as succulents, named for their ability to hold water and survive in arid climates. Many of the world's succulent species are only found in the Succulent Karoo desert, which spans South Africa and Namibia. While these varieties can be cultivated in nurseries, global demand is also fuelling the poaching of these plants from the wild which are then smuggled and sold online to buyers in the US, Europe and East Asia. Conservationists advise customers all over the world to ask about the origin of a plant, and under no circumstances should they buy those advertised as wild. The South African government is well aware of the problem, and

unveiled a strategy in 2022 to combat poaching. It includes running community programmes about the need to protect the environment. Traffic and the UK's Kew Gardens recently announced that they were teaming up with eBay to develop new ways of preventing the sale of wild succulents on its platform. (BBC, 26th December 2024)

National

Deaths due to extreme weather events rose 18% in India in just 3 years: DTE-CSE analysis

Climate change-induced extreme weather events occurred on more number of days in 2024 and also became more intense in India compared to the last two years, according to an assessment by Delhi-based think tank Centre for Science and Environment (CSE) and Down To Earth. The analysis of the first nine months of 2024 showed that India experienced extreme weather events on 255 out of 274 days. The authors studied the occurrence of seven extreme weather events: Lightning and storms, heavy rains, floods and landslides, heatwaves, cold waves and cold days, cloudbursts, cyclones, and snowfall. Twenty-seven states and Union territories saw a rise in extreme weather days in 2024, with Karnataka, Kerala, and Uttar Pradesh each experiencing 40 or more additional days of such events. Madhya Pradesh saw the most number of days with extreme weather -176 – among the states and Union territories. "Kerala recorded the highest fatalities at 550, followed by Madhya Pradesh (353) and Assam (256)," highlighted the authors in a press statement on their analysis. For India, 2024 was a year of extremes, with almost every month shattering one grim temperature or precipitation record or the other. (Down To Earth, 8th November 2024)

India needs an environmental health regulatory agency

As a global voice for developing countries, India will push for ambitious climate mitigation financing from developed nations. There are profound and immediate environmental health challenges to address in India. Numerous epidemiological studies conducted across multiple States and rural and urban populations have uncovered the detrimental health effects of exposure to air, water and soil pollutants, which include a wide range of non-communicable diseases. The CPCB focuses on pollution control, while the MoEFCC handles broader environmental policies, and the Ministry of Health and Family Welfare (MoHFW) undertakes integrated disease surveillance and management. There is a disconnect between environmental monitoring, health impact assessments, and emissions control, given little to no data flow across these Ministries. A centralised agency such as an EHRA could integrate environmental and health data, allowing policymakers to track, regulate, and mitigate these impacts effectively, with much-needed interdisciplinarity. Having an agency such as an EHRA in place could help India formulate a unified response to all types of pollution, advocate cumulative accountability mechanisms and collaborate with international bodies to negotiate for and adopt best practices that simultaneously address health and the environment. (*The Hindu*, 22nd November 2024)

State

Citing environmental issues, Fodor's places Kerala on its No List

Highlighting the unsustainable tourism practices and environmental issues in the State, Kerala for the first time is placed on Fodor's No List 2025, by Fodor's Travel, the leading name in travel recommendations for over 85 years. Fodor's Travel Go List and No List respectively suggest the places one should consider visiting and the destinations one should avoid. Highlighting the unsustainable tourism practices and environmental issues in the State, Kerala for the first time is placed on Fodor's No List 2025, by Fodor's Travel, the leading name in travel recommendations for over 85 years. Fodor's Travel Go List and No List respectively suggest the places one should consider visiting and the destinations one should avoid. According to Fodor's note, the surge in tourism in Kerala has exacerbated the impact of natural disasters, particularly in areas where development has obstructed natural water flow and has increased landslide risk. Development is largely unregulated, unsustainable, and harmful to the communities and ecosystems of the Indian coastal State. Kerala has been placed on the list considering the impact of the catastrophic landslides in Wayanad, which claimed hundreds of lives; the number of landslides occurred between 2015 and 2022; and shrinking Vembanad Lake, the backbone of Kerala's backwater tourism, triggered by floods, illegal constructions, and increased and unchecked tourism. (The Hindu, 18th November 2024)

273 human-wildlife conflict zones in Kerala, finds Forest dept. study

A comprehensive study conducted by the State Forest department over the past decade has identified 273 panchayats in the State as conflict zones, of which 30 were classified as severe conflict zones. Based on the data, the department is preparing a master plan that includes preventive and mitigation measures to find a long-term solution to the increasing instances of man-animal conflicts in the State. The study has also categorised the areas where more incidents of man-animal conflicts are reported into 12 landscapes. The master plans for each of these landscapes will be consolidated into a State-level action plan, an official statement issued by the Forest department said. The Forest department is also taking up "Mission Fencing 2024", an intensive campaign to reduce human-wildlife conflicts in the State. The programme focuses on repairing damaged solar

fences along the 1,400 km stretch in the State with public participation and within a fixed time frame. (*The Hindu*, 21st *November* 2024)

Kerala revises Western Ghats ESA proposal, seeks protection for 8,590 sq km amid landslide concerns

In November. the Kerala government requested the declaration of 8,590.69 sq km across 98 villages and 12 districts as ecologically sensitive areas (ESAs) in the Western Ghats. Protection of fragile villages across the state's Western Ghats area has been under the spotlight following the July 30 landslides and mudslides in Wayanad district's Chooralmala, Mundakkai and Vellarimala, which killed over 400 people. The state's draft proposal on ESAs sent in May included 12 villages from Wayanad district, including Vellarimala. The Centre issued a sixth iteration of the draft notification on the Western Ghats in July, demarcating 56,825 sq. km as ESA across Gujarat, Goa, Maharashtra, Karnataka, Kerala, and Tamil Nadu. The villages marked as ESA will see a complete ban on mining, quarrying, highly polluting industries, and new thermal power plants. This draft notification was based on the report of a high-level working group headed by space scientist K Kasturirangan. (The Indian Express, 26th November 2024)

SPECIES OF THE ISSUE

Western Ghats king cobra Ophiophagus kaalinga



Western Ghats king cobra (Ophiophagus kaalinga)

is a species of King cobra endemic to the Western Ghats of south-western India, found in Tamil Nadu, Kerala, Karnataka, Goa, and parts of Maharashtra. It is characterized by pale bands without darker edges on adult snakes. The specific epithet *kaalinga* comes from the Kannada language of Karnataka, India, meaning "dark" or "black".

CHILDREN'S CORNER

Let's crawl into the Reptile World! It's Quiz Time!

- 1. What are leatherbacks and ridleys?
 - a) Frog b) Snakes
- c) Turtles
- d) Crocodiles
- 2. What is the largest snake in the world?
 - a) Cobra b) Python
- c) Anaconda d) King Snake
- 3. What reptile is known for the ability to change its body colour?
 - a) Rainbow snake
- b) Iguana
- c) Salamander

- d) Chameleon
- 4. Which of these is a "flying snake"?
 - a) Golden tree snake b) Coral snake c) Cottonmouth
 - d) Mamba
- 5. Which of these Australian snakes is not venomous?
 - a) Brown snake
- b) Tiger snake
- c) Taipan

- d) Python
- 6. What is the longest cobra, also called the hamadryad?
 - a) Black-necked cobra
- b) Indian cobra
- c) Egyptian cobra
- d) King cobra
- 7. What snake is also called a "horned rattlesnake" or "horn viper"?
 - a) Bull snake
- b) Sidewinder
- c) King snake

- d) Cat snake
- 8. Which snake species is docile and rarely bites when handled, even though its venom could kill humans?
 - a) King snake
- b) Coral snake
- c) Rattlesnake

- d) Mamba
- 9. What is a hawksbill?
 - a) A kind of tree frog
- b) A lizard resembling a hawk
- c) An endangered species of sea turtle
- d) hunted for its shell
- 10. What is the largest lizard in the world?
 - a) Komodo dragon
- b) Leopard lizard
- c) Iguana
- d) Mexican beaded lizard

YUSMGLS: 1) C 5) C 3) Q 4) S 2) Q 6) Q 2) P 8) P 30) D 10) Q

ACTIVITIES OF WWF-INDIA KERALA STATE OFFICE

State Education Strategy meeting

A.K. Sivakumar and Anushreedha S.S. participated in the State Education Strategy Meeting with Nikhil Kundu and Priyanka Singh on 19 November over Zoom Call. All the Environmental Education components were discussed in detail, and the Environment Education Team offered all support for the State Office Team. The team also had a meeting with Ms. Ambreen and Ashley Wilkinson while on their visit to the State Office as part of TTPC site visit. At the State Office, the team sat together on 7th November and discussed the way forward for TTPC in Kerala and other Environment Education programs.



Dragonfly Festival 2024

Wetland Biomonitoring

The Wetland Biomonitoring was conducted in all three wetlands in November. Both Kole and Bharathpauzha Teams have completed the third and fourth biomonitoring and Vellayani has completed their third biomonitoring.

Kole wetlands was led by Dr. Jain and Dr. Joby. The third count conducted on 9th November recorded 11 species and the most abundant was Pantala flavescens (1000+) and the fourth count conducted on 30th November recorded 15 species with the most abundant being Pantala flavescens. But their number has reduced to 90+ individuals. Bharathapuzha Team was led by Muhammed Sherif. The third 3ount conducted on 10th November recorded 18 species with the most abundant being Pantala flavescens (120 nos). The count on 24th recorded 15 species and the most abundant was Pantala flavescens (68 nos). The third Biomonitoring at Vellayani Lake was led by Govind Girija on 10/11. Fourteen species were observed on the third count and the species with the most abundance was Brachythemis contaminata. The data was uploaded on the shared file along with the photos.



Odonate Training Program at SFTI, Walayar

The program was held on 23 and 24 November and was attended by 26 Forest Officers including Beat Forest Officers and Deputy Range Officers. It was inaugurated by Mr. Sibin, Assistant Conservator of Forests (Social Forestry), Palakkad. Ms. Anushreedha spoke about WWF-India, its mission, the work of Kerala State Office and about Dragonfly Festival. Dr. Sujith V. Gopalan, Executive Member, SOS, gave felicitation and Mr. Sameer, Range Officer, delivered the vote of thanks. After the inaugural function, the technical sessions progressed. The General Introduction to Odonates and Damselfly Identification was taken by Dr. Sujith, Dragonfly Identification and the Ecology and Conservation of Odonates was taken by Govind Girija, Member, SOS. Nikhil John from WWF-India took the session on Citizen Science, Odonata Watch and Photo Documentation. About five competitions were also included in the program – Quiz, Group Competition on Odonata in our daily lives, Best Photo, Best Observer, and Most Species Photographed. The prize for the competitions were given away at the end of the program. The participants also gave feedback at the end of program and said that they were benefitted by the training and that they would like to get more such training programs in the future on lesser-known species.





Odonate Training Program at SFTI, Arippa

The program was held on 30 November and 1 December and was attended by 38 Forest Officers including Section Forest Officers, Beat Forest Officers, Range Forest Watcher and Deputy Range Officers. Welcome Address was given by Jayan K.S. It was inaugurated by Mr. H.T. Jose, Deputy Director, SFTI. Renjan Mathew spoke about WWF-India, its mission, the work of Kerala State Office and about Dragonfly Festival. Dr. Sujith V. Gopalan, Executive Member, SOS, gave felicitation and Prakash. L, Range Forest Officer delivered the vote of Thanks. After the inaugural function, the technical sessions progressed as in the previous training program. The participants at Arippa gave the feedback at the end of program and said that they were apprehensive about the program in the beginning, but as the sessions progressed and after the field session, they are now in complete awe of the world of lesser known amongst them. Team WWF-India – Renjan Mathew Varghese, Anushreedha S.S., Anupama R., and Team SOS – Dr. Sujith V. Gopalan, Muhamed Sherif, Muhammed Haneef.



Magical Mangroves

The outreach for Magical Mangroves was 482 for the month of November. Two volunteers took sessions – Manoj I. B. and Preeti T. Raphy Neelamkavil and Dr. Jain, our experts, also took outreach sessions this month.



Tide Turners Plastic Challenge (TTPC)

A.K. Sivakumar met Col. Vineet Midha, Commanding Officer of 1 Kerala Girls Battalion NCC, Thiruvananthapuram on 14th November along with Senior Girl Cadet Instructor Ms. O. Beena and discussed collaboration for TTPC Phase 5. He offered all support and confirmed the participation of 300 NCC Cadets for the program. We are planning three workshops and three action-level engagements for 100 NCC Cadets. A draft concept paper on implementing TTPC 2024-25 was developed at KLSO after an in-house discussion and sent to Ambreen Khan for approval.



Kerala State Office conducted a Bird Watching session with Ambreen Khan and Ashley Wilkinson along with Sivakumar, Anushreedha and Anupama at Bonaccord Hill Station in Thiruvananthapuram on 7th November 2024. They observed 26 species of birds, including endemics like the Malabar Trogon, Malabar Grey Hornbill, White-cheeked Barbet, White-bellied Blue Flycatcher, Nilgiri Flowerpecker, and Crimson backed Sunbird. Migratory species like Ashy Drongo, Blyth's Reed Warbler, Grey Wagtail and Greenish Warbler also were observed.



Visit of Delhi Team as part of TTPC

Accompanied by the State Director, Ambreen and Ashley visited Nagercoil and Thuckalay to see and understand the working of the straw-making unit from processed coconut leaves run by Sunbird Straws. The team visited the running plant at Nagercoil, interacted with the women workers to understand the work and also how this initiative has changed their life by providing a decent livelihood and further on visited the proposed new plant site at Thuckalay and interacted with the women from the local community there who would be join in once the plant is setup and running under the banner of TTPC.



Beach Combing

The monthly monitoring program of shore birds of Thiruvananthapuram District was held on 2nd November 2024 with the participation of 16 Volunteers under the leadership of Reji Chandran at Poovar and Jayakrishnan at Perumathura. The team from Perumathura reported 13 species of birds including Lesser Sand Plover and Sanderlings while the team from Poovar found 37 species of birds including migratory shore birds like Lesser Sand-Plover, Kentish Plover, Great Crested Tern, Glossy Ibis and Barn Swallow.



The monthly monitoring program of shore birds of Thiruvananthapuram District was held on 8th December 2024 with the participation of 16 Volunteers under the leadership of Praveen J. at Poovar and the team observed a flock of 30 Tibetan Sand Plovers with one Greater Sand Plover and one Sanderling.

WINGS - Nature Awareness Program on Birds of India

The ever-first edition of **WINGS**, known earlier as Bird Race, was held in Kerala on Sunday, 17th November 2024. The event is organised by Yuhina Canopy in partnership with eBird India, Bird Count India, and United Way, and is supported by HSBC. The basic objective of this event is to popularise bird watching and encourage the general public's participation in birding by observing Salim Ali Day with dawn to dusk bird watching. The event in Thiruvananthapuram, is coordinated by WWF-India, Kerala State Office and conducted with local support from CHRIST (deemed to be University) Nodal Office, Vazhuthacaud. Mandatory permissions were secured from the Kerala Forests and Wildlife Department, JNTBGRI, NCESS, and the Department of Museums & Zoos.



An Orientation Session was conducted for the participants on Bird Race and Bird Monitoring on Friday, 15th November

at the CHRIST Nodal Office. Teams of 5 to 6 members were formed with a Team Lead for coordination, a bird expert for accurate identification, a good photographer with experience in bird photography, and budding birders. The locations in Thiruvananthapuram for the WINGS 2024 included Punchakkari Wetlands, Cityscape (Paddy fields of Kesavadasapuram and Museum & Zoo premises etc.), Akkulam Lake including NCESS Campus, Kadinamkulam Pazhanchira near Attingal, Wetlands, Poovar Nevvattinkara, and forest areas like Ponmudi-Kallar, Bonacaud, JNTBGRI Palode forests, Kottoor and Arippa. The Team Leaders were A.K. Sivakumar, Govind Girija, Dr Suith V. Gopalan, Abhirami G S, Kaushik Narayanan, Dhanush V., Arun C.G., Jaichand Johnson, Vinod Thomas, Thrinisha T.U., and Jayakrishnan S.

The evening get-together for experience sharing and data compilation was held at the auditorium of CHRIST Nodal Office. Dr. V. Balakrishnan, *Member Secretary*, Kerala State Biodiversity Board was the Chief Guest for the occasion. He appreciated WWF-India and the Volunteers for the efforts taken for such a great Citizen Science Project. He also called for incorporating action into this project by updating the latest data with the People's Biodiversity Registers of the concerned locations. There was a total of eleven teams totalling 75 birders and they observed 183 species of birds from sites covering forests, plantations, mangroves, beaches, rivers, estuaries, cityscapes, etc.

Attending Dr Salim Ali Day at Kuruvi Park at Palayam, Thiruvananthapuram

A.K. Sivakumar along with a team of Volunteers, Arun C.G., Govind Girija, Anju Junu and Abraham Thomas joined the gathering of nature lovers and nature photographers which was called by Writers and Nature Lovers Forum on 12th November in connection with Dr Salim Ali Day 2024.



Participation in the "Let Us Dream" Annual Community Conference and Exhibition at Christ Nagar College, Maranalloor, Thiruvananthapuram

Renjan Mathew Varghese, A.K. Sivakumar, Harish Kumar and Anupama R. attended the meeting and exhibition held at Christ Nagar College, Maranalloor, Thiruvananthapuram on 16 November 2024. They attended the inaugural session where Dr. Raju Narayana Swami, IAS was the Keynote Speaker. An exhibition with posters and banners of WWF-India was arranged at the venue. The visitor footfall was around 500. The Team used the venue to network with likeminded individuals and organisations.



Invited Panel Discussion: Adapting to Change – Scaling Climate Resilience in Kerala's Landscapes – Renjan Mathew Varghese

Mr Renjan Mathew Varghese, State Director was invited as a Panel Member to the JSW-TOI 12th Earth Care Awards 2024-25 - Panel Discussion at Monsoon Empress, Palarivattam, Kochi was held on 26 November 2024 on the theme "Adapting to Change: Scaling Climate Resilience in Kerala's Landscapes" moderated by Mr. Ajay Pandey, Founder Director, ThinkThrough Consulting Pvt. Ltd. with fellow panellists Dr. Sreekala P.P., Assistant Professor, Dept. of Atmospheric Sciences, CUSAT, Mr. Karthik Parasuram B., Director of Operations, Kerala Startup Mission, Dr. Shijo Joseph, Head - Climate Resilience and Environment Management Centre, KUFOS-Kochi, and Ms. Renjini Thampi, Eco-Innovator, WCC Climate Leader and Founder-Vapasee, Kochi.



Invited Talks: Environment Education session at Mar Theophilos College, Nalanchira

On December 3rd, 2024, A.K. Sivakumar led a session on Environmental Education at Mar Theophilus Training College, Nalanchira, Thiruvananthapuram, as part of their annual NSS camp. Sixty Teacher Trainees attended the session.



Invited Talk – Nature Club of Choice School, Thripunithura - Carbon Neutrality and How to be a Cool Conservationist

Anushreedha was invited by the Nature Club to take a session on Carbon Neutrality and How to be a cool conservationist by the Nature club of Choice school on 3 December 2024. Around 150 students from grade 9 and nature club attended the program.



Invited Talk at Govt. HSS, Kazhakoottam Ecological Footprint – A.K. Sivakumar

The Senior Education Officer Sivakumar led a session on "Ecological Footprint" for the participants of the Camp of Students Police Cadets at Govt. HSS, Kazhakkoottam on 28th December 2024. There were 40 students in the camp. He spoke on the concept of Ecological Footprints and sustainability as the theme of the camp was Sustainable Development.



International Volunteers Day at KITTS

International Volunteers Day was observed on 8th December 2024 in the campus of Kerala Institute of Tourism & Travel Studies (KITTS), Thiruvananthapuram. It was a joint initiative of WWF-India, Indus Cycling Embassy and KITTS. Twenty-six volunteers joined hands to restore a Butterfly Garden within the campus of KITTS infested with invasive plants and other creepers. The activity started at 7 in the

morning and concluded by 8.30 making the host and nectar plants of the Butterfly Garden free from the creepers. Renjan Mathew Varghese, A.K. Sivakumar, Anushreedha S.S. and Harishkumar R. from WWF-India, D. Manoj Kumar, Training cum Course Co-ordinator, KITTS, Dr Dileep M.R., Director, KITTS, and O Beena, Secretary, Indus Cycling Embassy led the activity.



Outing to Elephant Rehabilitation Centre (ERC), Kottoor as part of Deepavali Celebrations

The State Team, along with interns visited the Elephant Rehabilitation Centre at Kottoor and Neyyar Dam on 1st November. It was also a team building exercise.



Exhibition on WWF-India at Malabar Garden Fest held at Malabar Botanical Garden, Kozhikode

Harish Kumar R. and Anupama R. setup the WWF-India exhibition stall in the Malabar Garden Fest held at Malabar Botanical Garden, Kozhikode from 19th to 24th December 2024. The exhibition was about WWF-India and its conservation and environment education initiatives at National and State levels and was viewed by the visitors including school/college students and the public.



STOGO FEST & Child Online Protection Award 2024 - Renjan Mathew Varghese Invited as Panelist

STOGO Fest, organized by Tachyon Group, a global IT organization specializing in technology and education, is an international platform that celebrates innovation and creativity among students worldwide. It transcends geographical boundaries, bringing together students from diverse backgrounds and cultures. In 2024, it was organized on December 2-3 at the Holy Grace Group of Institutions at Mala, Thrissur with the Panel Discussion on Sustainability and the Art of Survival moderated by Shri. M.P. Surendran, Chief Deputy Editor of Mathrubhumi along with many experts. The session explored key issues on various aspects of sustainability and adopting practices for a greener future. Renjan Mathew Varghese, State Director (Kerala), WWF India was invited to be in the panel. We put an exhibition stall also at the venue. The outreach was around 1000.



Talks & Seminars

Anushreedha S.S., Project Officer attended the Two-day Workshop on Sustainable Wetland Management organized by State Wetland Authority of Kerala (SWAK) on 4 and 5th December at Kollam. She actively took part in the event and is now part of the Ashtamudi Workshop WA group where development of the wetland is discussed.



EDITORIAL BOARD

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Published by WWF-India, Kerala State Office, Vanchiyoor P.O., Thiruvananthapuram - 695035 For private circulation only • Phone: 0471-2302265 • email: klso@wwfindia.net • web: wwfindia.org Pre-Press: Soft and Soft, Sasthamangalam, Phone: 8547043499, Printed at: New Multi Offset, Tupm