



KERALA STATE BIODIVERSITY BOARD

EKAA

Environment. Kerala. Awareness. Action
Quarterly Newsletter of the Kerala State Biodiversity Board

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NBA EXPO

CONSERVATION PROJECTS

GREEN AUDIT

INTERNATIONAL DAYS

Bharat Ratna for Dr. M.S. Swaminathan

The father of the Green Revolution in India, Dr. M.S. Swaminathan was conferred the Bharat Ratna posthumously in 2024. It became a matter of great pride for the agricultural fraternity and the scientists that the Government of India has bestowed upon Dr Swaminathan the Bharat Ratna, the highest civilian award. In the 1960s, Dr. Swaminathan advocated for sustainable agriculture practices as well as the need for diversifying crops. “Evergreen Revolution,” was the ideology focused on by the visionary, which is an eco-friendly approach to enhance agriculture production without causing harm to the environment and society. India could attain food security mainly because of the sincere efforts of the great scientist and his team. Addressing the environmental implications of mono-crops, Dr. Swaminathan advocates for global efforts in biodiversity conservation. In 1976, he established the National Bureau of Plant Genetic Resources. The World Food Prize, also known as the Nobel Prize for Food and Agriculture, was awarded for the first time in 1987 to Dr. M S



Swaminathan for his exemplary works in addressing famine and hunger. He played a pivotal role in developing the Protection of Plant Varieties and Farmers’ Right Act, 2001. The UNEP has addressed Dr. M.S Swaminathan as the “Father of Economic Ecology” and he has played a key role in drafting the Biological Diversity Act of 2002, which led to the establishment of the National Biodiversity Authority in 2003. The deficiency of minerals and vitamins among people, which he has addressed as ‘hidden hunger’ was another area focused by the eminent scientist. He emphasized on focusing on nutrition-sensitive agriculture and proposed a ‘Farming system for nutrition’ in 2014 to attain nutritional security. The architect of Kuttanad package, and at the same time a global leader of biodiversity conservation was recognized by prestigious awards such as Shanti Swarup Bhatnagar Award in 1961, the Ramon Magsaysay Award in 1971, the Albert Einstein World Science Award in 1986, the Padma Shri (1967), Padma Bhushan (1972) and Padma Vibhushan (1989) earlier.

First National Repository in Kerala under Biodiversity Act

Calicut University Herbarium –First National Repository in Kerala under Biodiversity Act



Specimen of *Amomum* sp. at the repository

The herbarium at the Department of Botany at Calicut University became the first national repository in

Kerala under the Biological Diversity. The herbarium has been elevated to the status of the National Biodiversity Authority (NBA). The herbarium preserves a total of 1,07,050 specimens including endangered species. The facility was started in 1968, is the 18th designated repository to be notified under Section 39 of the Biological Diversity Act, and is included in the nationwide network of institutions that preserve the germplasms of biological resources. The herbarium is one among the 45 herbaria in the country to be recognized by the New York-based Index Herbariorum. The facility consists of a vast set of specimens from biodiversity hotspots including Silent Valley National Park and Agasthyamala Biosphere Reserve. It also possesses several specimens of pteridophytes from south India, bryophytes from Kerala, and the complete set of voucher specimens used for the interpretation of *Hortus Malabaricus*.

KSBB participated in the PANACEA Expo conducted by the NBA

Kerala State Biodiversity Board actively participated in the 'PANACEA 2024-the 11th Natural Expo India' at the World Trade Centre, Mumbai, from 29th February-2nd March 2024, organized by the National Biodiversity Authority. Panacea aimed to showcase the indigenous products of India in an international expo. The KSBB could showcase selected GI-tagged products, seaweed products, wild and underutilized edible flower products, and value-added products from indigenous crops, along with posters and videos about the biodiversity success stories of Kerala. The products of the state could reach an international audience through the expo. Many of the products showcased by the state were an outcome of conservation projects funded by the Kerala State Biodiversity Board. Hundreds of participants visited the stall of the state during Panacea 2024.



NBA chairman visiting KSBB's Expo at PANACEA

NBA secretary Interacting with KSBB tem during the Expo

Best Video documentary award for KSBB

A video documentary entitled '*Biodiversity Conservation for a better future*'; produced by Kerala State Biodiversity Board and directed by Shri. K.S. Rajasekharan has secured the best video documentary award instituted by Govt. of Kerala. The documentary secured the award under the Science and Environment category for television programs telecasted in the year 2022. The documentary showcases the importance of biodiversity conservation to educate the public and students.

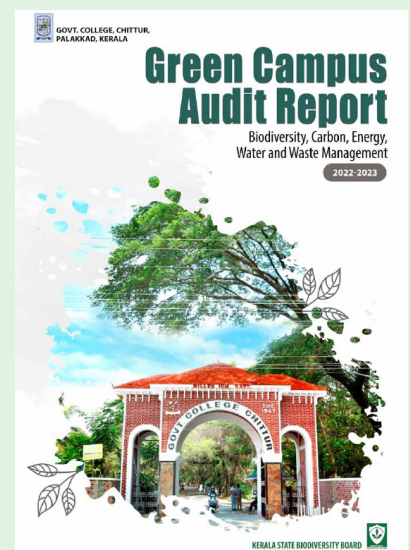
Webinar Series to Observe International Forest Day, World Water Day and World Meteorological Day

Kerala State Biodiversity Board organized a webinar series to commemorate International Day of Forests, World Water Day, and World Meteorological Day on March 21st, March 22nd, and March 23rd respectively. Shri. Pramod G. Krishnan IFS, Additional Principal Chief Conservator of Forests, Kerala Forest Department, Govt. of Kerala delivered a lecture on *'Forests and Innovation: New Solutions for a Better World'* in connection with the International Day of Forests 2024, organized by the Kerala State Biodiversity Board on March 21st 2024. Dr. Sunny George, Director, SCMS Water Institute, SCMS School of Engineering Technology, Ernakulam delivered a lecture on *'Urban water Security – Case studies from Kerala'* in connection with the World Water Day 2024. Dr. Pradeepan Periyat, Associate Professor, Department of Environmental Studies, Kannur University delivered a lecture on *"Sustainable Green Technologies for Reducing Carbon Emission and Climate Change"* in connection with the World Meteorological Day on March 23rd, 2024. Scientists, Lecturers, Students and Researchers from different universities in Kerala, Board members and Officials of Kerala State Biodiversity Board, District Coordinators of Biodiversity Board, Convenors and Members of Biodiversity Management Committees, Technical Support Groups (TSG's) and Biodiversity Club members participated. Dr. Akhila S. Nair (Senior Research Officer) of Kerala State Biodiversity Board delivered the welcome address. Dr.V. Balakrishnan, Member Secretary, of Kerala State Biodiversity Board presided over the meeting and Dr. K. Sreedharan (Research Officer) delivered the vote of thanks.



Green audit by KSBB

A green audit can play a crucial role in promoting the environmental sustainability of a firm. Kerala State Biodiversity Board has conducted its first Green Campus Audit at Government College, Chittur, Palakkad District, Kerala. In this comprehensive study, environmental practices and sustainability were meticulously examined across five key domains: Biodiversity, energy, carbon storage, water quality, and waste management. The biodiversity audit highlights the importance of preserving and enhancing the campus's ecological diversity, recommending initiatives such as green space development, native plant promotion, and conservation programs. The floristic analysis of the study area revealed the presence of 185 angiosperms. The Shannon Wiener Index H' (1.24942) indicated that the plant community in the Chittur Government College campus is relatively heterogeneous with no dominance of a particular species. The faunal aspects covered in the assessment include selected groups of invertebrates and vertebrates. The Energy audit identifies opportunities for



optimizing energy consumption through infrastructure upgrades, behavioural adjustments, and the integration of renewable energy sources, aligning the institution with the principles of efficiency and environmental stewardship. The Waste Management audit emphasizes the importance of a circular economy approach, urging the implementation of robust recycling programs, waste reduction strategies, and responsible disposal practices. Water audit evaluates water use and management practices and identifies interventions for improved water use. Carbon Audit assessed the institution's carbon storage, providing recommendations to minimize emissions through sustainable practices, green transportation initiatives, and carbon offset programs. The report of the green audit prepared by the KSBB team serves as a holistic roadmap for transforming the campus into a model of environmental responsibility and sustainability.



Green audit team @ Chittur College

The report of the green audit prepared by the KSBB team serves as a holistic roadmap for transforming the campus into a model of environmental responsibility and sustainability.

Nature Camp by Chelannur BMC

Chelannur Grama panchayath organized a Nature Camp for students from the Biodiversity Clubs of the district. The participants of the team include BMC members, panchayath members, teacher co-ordinators and students from the biodiversity clubs, KSBB Kozhikode district co-ordinator, resource persons, and sponsors. “Karutham thannerthadangal” was the theme of the Nature camp organized by the BMC on the month of World Wetland Day.



Chelannoor BMC's Nature Camp

Turtle conservation at Veliyancode BMC in Malappuram Dist.

Olive ridley sea turtle (*Lepidochelys olivacea*) is one among the seven species of sea turtles live in the Indian Ocean, categorized under the vulnerable status. In Kerala, the nesting followed by egg laying of Olive ridley has been observing in coastal areas of Kasargod and Veliyamcode-Ponnai- Chavakkad belts, for decades. The nesting season is between December to March month of every year. The BMC noticed the various threats faced by the turtle eggs such as predation by animals such as stray dogs, Jackal, cats, birds. Earlier, local people superstitiously believed that the consumption of turtle eggs can cure some diseases. In this situation, the Veliyamcode BMC decided



to start efforts to conserve the vulnerable species and submitted a proposal to KSBB. KSBB sanctioned Rs. 5 lakhs for the conservation project and the project started with an awareness program for the local community on the Importance of Sea turtle conservation. The BMC has appointed turtle watchers and coordinators for observation, egg collection and hatchery management. During the sea turtle nesting season between December 2023 to March 2024, turtle eggs were collected from coastal areas of Veliyamcode and conserve it in the hatcheries established in metal cages in the coast itself. 165 eggs hatched primarily and the baby turtles were released into the Sea during ‘the sea turtle release program’ conducted by the BMC on 9th March 2024 at Veliyamcode – Pathuthura coast. The program was inaugurated by the BMC Chairperson Mr. Shamsu Kallattel and the program was presided over by Mr Anilkumar R., District Coordinator of KSBB, Malappuram. Members from local community, Social forestry, Coastal police, Research students, Environmental activists and BMC members were present at the event.

Women's Day Celebration of KSBB

International Women's Day 2024 was celebrated by the Kerala State Biodiversity Board by organizing an online talk by Prof. T.S. Swapna (Board member of KSBB & Professor, Dept of Botany, University of Kerala) on the topic 'Women as Biodiversity Champions'. Prof. Swapna has specifically mentioned the role and significance of local, national, and international women who have acted for the cause of the Environment and Biodiversity. Several examples of women forerunners of biodiversity conservation were put forward during the presentation were thought-provoking and motivating to the entire KSBB fraternity.



Inland fish conservation project

In Kerala, the beginning of the Monsoon season is the main breeding period of inland fishes. At this time the mature fishes were moved to nearby tributaries and paddy fields for laying eggs and this massive movement for the next generation is known as "Ootha ilakkam or Ootha kayattam". During Ootha ilakkam, the people catch these fishes (*Ootha pidutham*) on a large scale for their food and livelihood. This uncontrolled harvesting of the fishes became a threat to the existence and survival of inland fishes. KSBB addressed this issue by sanctioning an Inland fish conservation project in association with selected BMCs of the state. The live and mature fishes were collected from fish catchers at the time of "Oothkayattam" and allowed to breed in nearby ponds. Later the mature fish and seedlings were released to the Pampa, Meenachilar, Periyar, and Chaliyar rivers to enrich the inland fish population.

The project is implementing in BMCs of Mallappuzhasserry and Thottappuzhasserry Grama Panchayaths of Pathanamthitta District, Mannar and Pandanad Grama Panchayaths of Alappuzha District, Koruthod Grama Panchayath of Kottayam District, Ramamangalam and Valakam Grama Panchayaths of Ernakulam District, Annamanada and Kuzhoor Grama Panchayaths of Trissur District.

Horabagrus brachysoma (Manjakoori), *Heteropneustes fossilis* (Kaari), *Anabas testudineus* (Kallemutti), *Amblypharyngodon melettinus* (Vayamb) seedlings were dispersed



in river Pampa as part of the first stage of the project. 'Manjakoori' under Vulnerable, 'Kallemutti' under Data Deficient, and 'Kaari' and 'Vayamb' under the Least Concern status of the IUCN list. The fish seedlings release program was inaugurated by Sri. R Ajayakumar, the Standing Committee Chairperson (Health and Education) of the Pathanamthitta District Panchayath on 7th March 2024 at Parappuzha in Pathanamthitta. The board members of KSBB Sri. K V Govindan presided over the function and Dr. K. Satheeshkumar offered a Keynote speech. The Chairperson of Mallappuzhasserry BMC Smt. Mini Jiju Joseph welcomed the audience and the KSBB District Coordinator Mr. Arun C Rajan expressed the vote of thanks. KSBB Research Officer Dr. K Sreedharan, BMC members, LSG representatives, and the public were present.



Heteropneustes fossilis

Horabagrus brachysoma

Anabas testudineus



Inland fish conservation project inauguration @ Parappuzha

Online trainings for Biodiversity clubs

Biodiversity Board is organizing several programs to strengthen the activities of registered Biodiversity clubs. As part of this, a monthly webinar series has been initiated by KSBB from June 2023 for the biodiversity club coordinators. Webinars on 'Traditional knowledge' and 'International Day observances' were carried out in January and February 2024 and the expert talks were offered by Dr. C.S. Vimal Kumar, the Principal Scientific Officer of KSBB, and Dr. K. Sreedharan, the research officer respectively. Around 400 biodiversity club coordinator teachers actively participated in the sessions.

PBR second volume

Maruthongara BMC in Kozhikode District

Maruthongara Gramapanchayath became the third BMC in the district after Kadalundy and Kayanna, released the updated People's Biodiversity Register (volume II) (PBR-II). Also, Maruthongara was positioned as the fifth BMC in the State that attained this reward. The Updated PBR was released on 13th March 2024 by Sri. P. Suredhran Master, the Welfare Standing Committee Chairperson of Kozhikode Jilla Panchayath at Maruthongara Family Health Centre Auditorium. He handed over the new release of PBR to the Board member of Kerala State Biodiversity Board, Sri. K. V. Govindan. The event was presided over by the Maruthongara grama panchayat President, Sri. Sajith. K.K. A welcome address was given by the Maruthongara grama panchayat Secretary, Sri Sujith. T. V. The KSBB Member, Shri. K. V. Govindan delivered his Keynote address on Biodiversity conservation, activities, and about PBR. Smt. Shoba Asokan, Maruthongara gramapanchayath Vice president, Sri. Baburaj. CP, the Developmental Standing Committee Chairperson; Smt. Reena. VP, Welfare Standing Committee Chairman; Denny Thomas, Health & Education Standing Committee Chairperson; Thomas Kanjirathingal, Member and

Dr. Manju KP, Kozhikode district Co-ordinator KSBB shared their thoughts and wishes for the program.



PBR 2nd volume release @ Maruthongara BMC

PBR second volume

Chemmaruthi BMC in Thiruvananthapuram District

The release of the updated PBR second volume of Chemmaruthi BMC was held at Chemmaruthi Grama Panchayath auditorium on 13/03/2024 by the BMC Chairperson Smt. Priyanka Biril. Chemmaruthi BMC became the first one in the Thiruvananthapuram District BMCs to release the updated PBR second volume.

The program was presided over by Mr. Liniss, The vice president of the Panchayath and the keynote address was given by Dr. C.S. Vimal Kumar, the Principal Scientific Officer of KSBB. KSBB district coordinator Smt. Akshaya Anil and BMC representatives greeted

the event. Agriculture Officer Smt. Roshna welcomed the audience and BMC Secretary Sri. Shanikumar expressed a vote of thanks.



PBR 2nd volume release @ Chemmaruthi BMC

Biopark inaugurated-Mananthavady BMC, Wayanad

A biodiversity park at Mananthavady BMC in Wayanad district, funded by Kerala State Biodiversity Board was inaugurated by Sri K.V. Govindan, the Board member of KSBB on 9 March 2024. The BMC has established the biopark at Choottakkadavu, near the Kabani River, by planting more than 100 plants comprised of medicinal plants, endemic fruit plants, and butterfly host plants. The QR codes of the plants provide the visitors with detailed information on the significance of the plants in the park. A library comprises books on environment and biodiversity conservation, a selfie point and two ponds are other attractions of the biopark. Deputy Chairperson of Mananthavady Municipality Mr. Jacob Sebastian presided over the function. KSBB district coordinator Mr. Shine Raj, BMC representatives, and the local public attended the event.

World Wetland Day celebrations by BMCs

To address the vital role of wetlands for the well-being of nature amidst the critical climate change, the

commemoration of World Wetland Day was convened at various platforms across the World on 2nd February 2024. To create awareness about the worthiness of wetlands among the general public and students, various programs were conducted at BMCs across the state as per the direction of the Kerala State Biodiversity Board. The BMCs in association with Biodiversity clubs organized several awareness programs focused on the Wetland Day theme 2024 ie., Wetlands and human well-being. Seminars, symposia, workshops, rallies, competitions for students, river walks, visits to natural ecosystems, etc were conducted by the BMC. Thousands of the general public and students attended the wetland day events conducted by BMCs across the state.



GHSS Mogral Puthur, Kasrgod District



Pullampara, Tvm District



Vannappuram, Idukki District



Chemanjery, Kozhikode District

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3. Principal Secretary, Fisheries Department
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