



Biodiversity Chronicle

Quarterly e-Newsletter

West Bengal Biodiversity Board



BHS : Company Bagan, Nadia
Page 4



Fishing Cat in Southern Bengal
Page 2



Traditional Crop Conservation
Page 3

Photo of the Issue
Page 3



First Year 🌻 Second Issue 🌻 April-June 2025

Why TRVs (Traditional Rice Varieties)?

Rice, being one of the most important staple foods of the globe, contributes to about 80% of the food requirement of 50% of the World's population (FAO, 2020). India with her varied climate, soil and



topography had been nurturing the magnificent crop diversity including the rice, since time immemorial and thus covers one of the centres of origin of crop plants. The great diversity of rice genetic resources in our country is indeed the outcome of a long legacy of the farmers through selection of important beneficial traits of crops, even from wild progenitors. Thus, the rice

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TRVs Documentation and Registration : Board's Initiatives

Traditional Rice Varieties (TRVs) in India face extinction due to the widespread adoption of high-yielding varieties (HYVs) and monocropping leading to genetic erosion and declining grain quality. Climate change, with frequent floods and droughts, has further worsened the crisis, as modern hybrids are highly vulnerable to extreme conditions. In contrast, TRVs, many of



which are naturally drought- and saline-tolerant, have demonstrated remarkable resilience.

West Bengal, once home to around 5,000 TRVs, now left

with fewer than 10%, primarily conserved by small farmers.

Towards conservation and protection of such precious resources, the Board, so far, has documented 112 TRVs. 15 of such TRVs formally registered under Protection of Plant Varieties and Farmers' Rights (PPV & FR) Act (2001), out of the applications of 73 TRVs forwarded to PPV&FR Authority.

BMC Capacity Building for Tribals

Three-days Pilot Capacity Building training programme for Biodiversity Management Committees (BMCs) of West Bengal was organised by Botanical Survey of India [EIACP-PCR (Flora)] in collaboration with West Bengal Biodiversity Board (WBBB) at Jhargram from 21st to 23rd February 2025 with participation of fifty BMC



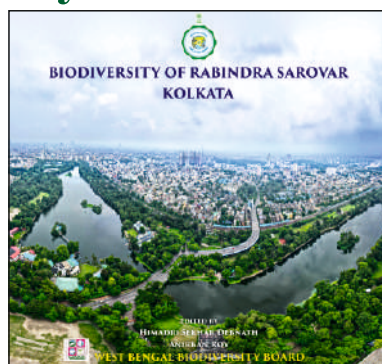
members from six districts of West Bengal, which was inaugurated by Dr. Himadri Sekhar Debnath, Chairman, WBBB. Mr. Subhrajit Gupta, SDO, Jhargram, Mr. Surajit Bhar, DP&RDO, Jhargram, Mr. Mridul Srimany, DNO (Biodiversity) Paschim Medinipur, Dr. J.S. Jalal & Dr. Manoj E. Hembrom Scientists of BSI, Dr. Anirban Roy, Research

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Biodiversity of Rabindra Sarobar

Rabindra Sarovar, in the southern part of Kolkata is the second largest waterbody of the city and becomes a lake of National importance. This fresh waterbody and its vicinity are indeed a haven for magnificent floristic diversity, both aquatic and terrestrial, that provides a natural carbon sink of the metropolitan city, apart from its pristine beauty and aesthetic value. It also serves as suitable habitats of different faunal components.

In the early 1920s, the Calcutta Improvement Trust (CIT), acquired about 192 acres (0.78 Sq. km) of marshy lands



mingled with thickets and shrubberies, for developing the area for residential use. An artificial fresh-water body was excavated and connected with few ponds along with the joining of few ponds of the then British period to develop a large lake, to

be served as recreational area in southern Kolkata. The excavated waterbody was popularly known as Dhakuria Lake. Later in May, 1958, CIT renamed it as Rabindra Sarovar, after the name of great Bengali writer and Nobel Laureate Rabindra Nath Tagore. The entire lake area is maintained by the Kolkata Metropolitan Development Authority (KMDA) and protection is provided by the Lake Police Station.

The aquatic and semi aquatic plants of Rabindra Sarobar are represented by 35 species; where terrestrial vascular plants are 398

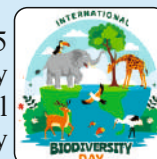
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22.04.2025
Earth Day

"Our Power, Our Planet"

22.05.2025
International Day
for Biological
Diversity



"Harmony with Nature and
Sustainable Development"



05.06.2025
World
Environment
Day

"Ending Plastic Pollution"

Chairman's Desk

Dear Readers

Thanks for your positive response on our inaugural issue!

Your appreciation motivates us to continue our journey in raising awareness about biodiversity and environmental conservation.

World Water Day is an annual United Nations observance held on 22nd March that highlights the importance of fresh water since 1993. Recent studies show a distressing decline in groundwater levels due to unsustainable practices such as excessive extraction and land-use changes. With growing populations and increased water demands, it is vital to recognize our role in conserving this precious resource.

Plantation plays a pivotal role in recharging groundwater. Trees and vegetation absorb rainwater, facilitating its infiltration into the soil and replenishing aquifers, thereby promoting recharge. However, understanding the negative impacts of groundwater misuse, such as over-extraction, deforestation, paving and development, is crucial for fostering responsible water management.

We encourage local tree-planting initiatives, support conservation efforts, and sustainable practices within communities. By raising awareness and taking actionable steps, we can ensure that future generations inherit a pure and sustainable water supply. Together, let's commit to preserving our groundwater resources and nurturing biodiversity for a balanced ecosystem.

Thank you for being a part of Biodiversity Chronicle!

Best regards,

Dr. Himadri Sekhar Debnath



...Capacity Building for Tribals

Officer, WBBB were also present as resource persons. The technical session were dealt with management of local Biodiversity. In day two; field visits were conducted with BMC members in Chilkigarh Biodiversity Heritage Site (BHS) and Amlachati Medicinal Plant Conservation Centre to have experience on BHS Management and Medicinal plants. In the final day, BMC members had the discussion on future road map.

...Rabindra Sarobar

species in the life forms of 166 trees, 8 lianas, 14 climbers, 46 shrubs and 136 herbs. During the tree census, 7,900 individuals of trees were spotted and 50 species of macro-fungi have been recorded.

This Sarobar also nurtures rich faunal diversity of which avian diversity is represented by 107 species including long-distance migrants, local migrants, and summer visitors. Apart from the birds, 12 species of mammals, 11

species of reptiles, 5 species of amphibians, 57 species of butterflies and many other insect-fauna find their habitats in the lake.



The publication of 'Biodiversity of Rabindra Sarobar', Kolkata, presents a glimpse of the rich biodiversity heritage of the lake and its surroundings. This book would contribute to general awareness towards conservation of rich biodiversity of the state.

Awareness on Fishing Cats in Southern Bengal



The Board has initiated a programme, in collaboration with Department of Zoology (Calcutta University) on Generating awareness on fishing cats in Southern Bengal involving BMCs & NGOs. Twelve awareness camps were conducted across twelve districts of Southern West Bengal, involving approximately 600 students. Additionally, 13 awareness boards were installed in key habitats. Resource persons from each district have been connected via a WhatsApp group to monitor habitat conditions and Fishing Cat-related incidents. This initiative fosters knowledge dissemination and strengthens local participation in the protection of this endangered species.



Readers' Comment

- My heartiest congratulation for the first publication from WBBB. ✉ Dr. Projjwal C. Lama
- My heartiest congratulation to all of you for publishing the Newsletter. ✉ Dr. Vivekananda Mandal, UGB
- বাংলাতেও এরকম হলে ভালো হয়। ✉ Paribesh Parishad
- It is interesting and informative. ✉ Sheela Ghosh, Scientist, ZSI
- A very good initiative by WBBB. ✉ Soumya Ray
- It is nicely composed and informative. ✉ Dr. Subrata Raha

Editor's Column

As we celebrate the release of 2nd edition of e-newsletter, we



reflect on the progress made and look forward to continuing our conservation initiatives. I recently visited the East Kolkata Wetlands (EKW) and was struck by its beauty and resilience. In this editorial, I delve into the importance of this vital habitat.

Located next to Kolkata, EKW, is a natural treasure providing numerous ecological, economic, and social benefits. Its uniqueness is that its world's largest sewage fed aqua-culture system and is a remarkable example of community led conservation. The sewage generated in the City is fed into its bheries where in presence of sunlight, oxidation takes place making the water conducive for algal and plankton growth on which fish feed. It is therefore rightly called Kolkata's kidneys.

EKW saves our city from floods and inundation during heavy rains, helps in water recharge, provides food and livelihood support, conserves biodiversity and helps in mitigating climate change.

However, today it faces challenges such as encroachments, pollution and climate change that pose substantial risk to its existence.

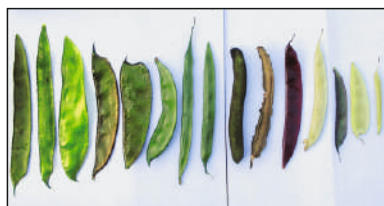
We must understand that the well being of our city depends on the well being of this unique wetland. It's the need of the hour to protect and preserve the EKW for our future generations. Together, we can make a difference and safeguard this incredible ecosystem.

Mrs. Tripti Sah, IFS
Member Secretary

Steps towards Traditional Crop Conservation

West Bengal, renowned for its rich biodiversity, has been nurturing indigenous crops suited to diverse agro-climatic conditions. The Board has launched conservation initiative of indigenous crop varieties across different agro-climatic zones. The cultivation of such crops species/varieties like *Kabirajsaal* and *Bhutmuri*

besides other traditional agricultural inputs. It has been estimated that the farmers have achieved yields nearly 1.25 times higher than conventional chemical-based practices, with input costs of just ₹3,000 per acre per season. Following successful implementation, the program has been expanded to Hingalganj, Sonamukhi, Habibpur, Harirampur, Raiganj,



(Rice), *Chaite Mug* and *Deshi Beuli* (Pulses), *Sarisha* and *Tishi* (Oilseeds), and *Altapatisim* and *Kanta Makrabegun* (Vegetables) etc. is being carried out in Hirbandh (Bankura), Bolpur-Sriniketan (Birbhum), Dantan-I (Paschim Medinipur), and Kultali and Basanti (South 24 Parganas), without any chemical input.

Farmers are using microbial fertilizers and plant defence materials, developed under the technical guidance of University of Calcutta and the Board,

Kumargram, Nayagram and Sankrail. While enthusiasm among the farmers grows, securing strong market linkages remains a key challenge.

This initiative is promoting sustainable farming, conserving crop diversity, and generating rural livelihoods with the active participation of the farmers. With continued support, indigenous crops can thrive, ensuring food security while conserving the agricultural heritage of West Bengal for generations to come.

■ Sudipta Mukherjee

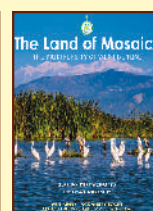
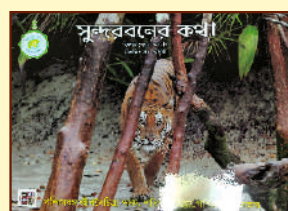
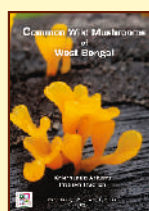
Photo of the Issue



'Biodiversity of Wetlands' Photo : Antara Sarkar
Theme for Next Issue : Biodiversity for Life (April-June, 2025);
Interested persons may send photograph, sharing name, phone no., complete postal address through e-mail : biodiversity.wbbb@nic.in

Last date- 30.05.2025

Publication of the Board



Interested persons are requested to enquire :

West Bengal Biodiversity Board

Contact No.: 033 2335 2731 / Email: biodiversity.wbbb@gmail.com

Activity Based Students' Awareness

A Nature Study was conducted at Digha Coast with 100 students of Bajkul Balai Chandra Vidya-pith, Purba Medinipur and 10 teachers of the school on 7th February, 2025. Students were grouped into five, each with twenty heads and two teachers. After a brief introduction and necessary instruction, every group moved to the intertidal zone to know about the beach animals. The habitats of



different crab species and their foraging activities and other behaviour were closely observed by the students with necessary guidance of the teachers. Students also had deep quest of the Bivalves and

other Molluscs, Star fish and even curious animals like Jelly fish, Sea cucumber, etc. After the very experience of searching beach animals, students had focused on the amazing formation of dunes with dense mat of



sand binding creepers. As the scrubs at the back side of sand dunes are known to be important habitats, each group silently stood near the bushes to sense the bird's call, observe their flight, see the foraging of butterflies and other insects on different plants, movement of smaller mammals etc. After lunch, all groups were assembled and shared their delightful experience before stepping to home.

Biodiversity Heritage Site

State Horticulture Research and Development Station BHS, Krishnanagore, Nadia, Horticulture Research Station was established in the year 1934, previously, called 'Company Bagan'. The soil of this station is fertile with gangetic alluvials thus be able to nurture diverse horticultural crops. Among these horticultural species the significant ones are Mango, Guava, Citrus, Litchi, Water apple, Jujube, Chiku, etc. Besides, the station also boasts several spices, aromatic and ornamental plants. The significant indigenous fruit plants of the station are Bainchi (*Flacourtia indica*), Deon (*Artocarpus lakoocha*), Falsa (*Grewia asiatica*), Kamranga (*Averrhoa carambola*), Ansphal

(*Euphoria longana*), Jam Lekur (*Ficus virens*), Jogga Dumur (*Ficus racemosa*), Bual (*Cordia myxa*), Tamal (*Diosyros montana*), Bokul (*Mimusops elengi*), Muchkunda (*Pterospermum acerifolium*), Kusum (*Schleichera oleosa*), Tentul (*Tamarindus indica*), Rudraksha (*Elaeocarpus serratus*), Parul (*Steriospermum chelenoides*, etc. The spreading canopy of these age-old trees nurtures different species of birds, butterflies and other insects.



Kohitur Mango Trees

Bahera (*Terminalia belerica*), Kurchi (*Holarrhena pubescens*), Bel (*Aegle mermelos*), Swet Chandan (*Santalum album*), Rakta Chandan (*Pterocarpus santalinus*), etc. The campus also harbours many indigenous trees like Bat (*Ficus benghalensis*), Aswattha (*Ficus religiosa*), Pakur (*Ficus rumphii*),

This old campus is really a conservatory of horticultural crops and other biodiversity components.

Thus it has been notified as BHS for better conservation and sustainable use of its precious biodiversity resources.

...Why TRVs?

diversity, commonly known as Traditional Rice Varieties (TRVs), are the farmer's varieties in different geo-climatic landscapes. More than one lakh TRVs were widely cultivated in India, nearly 50 years ago, while in West Bengal it was 5,000 plus during that period.

The erosion of such precious genetic resources in the country and our state, as well, results presently to 5000 and 500 respectively, though most of the varieties possessed beneficial traits like nutritional and medicinal properties. The varieties having high amylose content (like *Malabati*, *Bhutia*) are more energy provider; whereas, some varieties rich in micronutrients (e.g. *Kabirajsai*, *Kalabhat*, *Morichsal* etc.) have high nutritional and medicinal values. Many TRVs are popular for their aroma, which may vary according to climate and soil. *Tulaipanji*, *Kalonunia*, *Badshahbhog*, *Gobindabhog*, *Tulsibhog*, *Gayasur* etc. are notable aromatic TRVs of West Bengal. These TRVs are considered to have immense potentiality in health security by combating malnutrition. In many cases, the selection of such farmer's varieties is prioritized considering climatic stress like- flood, drought and salt tolerance. West Bengal having such climatic stress in different parts of the state, is nurturing TRVs like *Raygarh*, *Bhadoi*, *Bhasamanik*, *Don Bhutia* etc. (Flood tolerant), *Bhutmuri*, *Nyata*, *Asanlaya*, *Kelash* (Drought tolerant), *Kamini*, *Malabati*, *Nona Bokhra*, *Nona Sal*, *Talmugur*, *Khejurchhori* (Salt Tolerant), *Tyangrasal* (Wind tolerant) etc. These climate resilient TRVs are very essential for combating post-climatic catastrophe, especially after flooding, saline intrusion and during drought, storms etc. for food security. Moreover, many of the TRVs have resistance to several pests like *Asanlaya* (Bacterial Leaf Blite), *Hanumanjata* (Bacterial Leaf Spot) which reduces the indiscriminate chemical-based pesticide application, thus ensuring our health security and sustainability of agro-ecosystem. Besides the great genetic variability, these TRVs are also important source for crop improvement towards future prosperity. Conservation and promotion of TRVs cultivation need prioritized attention, especially for the agro-based Indian civilization.

■ Himadri Sekhar Debnath

■ Anirban Roy

Biodiversity in rituals and festivals: Conservation ethics

Punnipukur Broto ('Punni'- Pure or sacred, 'Pukur'- Pond and 'Broto' refers to Rituals) is a traditional observance in West Bengal, rooted in the agrarian and nature-centric cultural practices of the region.

Water bodies like ponds are central to rural Bengal's ecosystem. They serve as sources of irrigation, drinking water, and fish cultivation and hold cultural and spiritual importance.

Nature plays a pivotal role in the rituals and symbolism of Punnipukur Broto. The devotees utilize elements from their surroundings, making it a deeply eco-centric tradition.

The pond is central to the Broto. Women clean and decorate its banks as a mark of respect. Water from the pond is used for rituals, signifying purity and life. Clay from the pond is often used to craft small idols or symbols of deities like Lakshmi or Ganesha.

Sacred plants such as tulsi (holy basil), banana, and mango leaves are integral to the rituals. Offerings include seasonal fruits, flowers, and

grains, signifying gratitude towards nature's bounty. Marigold, hibiscus, and other locally available flowers are used to adorn the idols and surroundings. They symbolize beauty, purity, and the cycle of life. Women use natural dyes made from turmeric, vermilion, and rice paste to create alpona (ritualistic designs) around the pond.

The brata instills a sense of responsibility among the community to maintain and conserve

ponds. The exclusive use of biodegradable materials ensures minimal environmental impact. By involving the community, the brata raises awareness about the need to sustain nature for future generations.

In today's context, where environmental degradation and water scarcity are

pressing issues, the practices of Punnipukur Broto impart lessons in sustainability and reverence for nature. Revival and promotion of such traditions can inspire communities to adopt eco-friendly lifestyles and foster a deeper connection with the environment.



Photo taken from 'Pather Panchali' directed by renowned film maker Satyajit Ray