Biodiversity Chronicle

Quarterly e-Newsletter

West Bengal Biodiversity Board

Wild Patches in non-forest areas Page 3

Extended IBD Programme Page 2

Biodiversity Heritage Site: BaguranJalpai Page 4

Biodiversity in Rituals and Festivals Page 4

Second Year • First Issue • January-March 2026

An approach for conservation of native flora and associated butterflies involving school students

Butterflies play a vital role in maintaining the balance of nature. They contribute to the stability of food webs by functioning as herbivores, pollinators, and as food source

for other organisms. Because of their sensitivity to environmental changes, butterflies are widely regarded as reliable indicators of a healthy ecosystem.

These delicate and colourful creatures are not limited to forests or Protected Areas alone; they are equally a part of our everyday surroundings and can be found in human habitations, flying around host plants and nectar plants, often overlooked or considered as 'weeds'. However, butterfly populations are declining at an alarming rate. One of the primary reasons for the decline in butterfly populations is the loss of associated plant populations, which are essential for completing their life cycle. Host plants such as *Akanda*, *Ashseora*, *Varenda*, *Kulekhara* (In Bengali vernacular) etc. support egg laying and caterpillar development, while nectar plants like *Hati-sur*, *Atasi*, *Karamcha*, *Rangan* etc.

provide nourishment to adult butterflies. Establishing butterfly gardens with these plants creates a conducive habitat for

contd. pg.-2

Mission LiFE

Four Programme were organized on 'Mission LiFE' at D.N.C. College, Murshidabad; Ghoshpukur College, Darjeeling; Malda College, Malda; Govt. General Degree College, Lalgarh, Jhargram.

BMC Meeting

A meeting with the members of the Biodiversity Management Committees (BMCs) of Purba Medinipur district was held on 20th December 2025 at Amarpur village of Patashpur-I Block. The activities of the BMCs were discussed in detail along with the future plan of respective BMCs.

The Hidden Harvest: Wild Mushrooms in Traditional Culture of Lateritic Bengal

As first monsoon rains soak West Bengal's forests, spectacular mushrooms flourish within weeks, some edible and delicious, and still many remaining unveiled.

In the lateritic Sal forests, home to Santals for generations, women forage mushrooms in small groups each monsoon dawn, with inherited matrilineal knowledge guiding them precisely

which mushrooms to harvest, when, where, and the sustainable amounts: They collect egg & star-shaped *Putko* (*Astraeus hygrometricus*), termite associated *Uei*, *Sib* and *Bali Chhatu* (*Termitomyces* spp.), pinkish *Murgi Patra*, spicy *Jhal Patra* and

purplish *Jam Patra* from genus *Russula*, umbrella-capped whitish *Sal Patra* and yellowish *Tarmal Oat* (*Amanita* spp.), and many others, each identified through ancestral knowledge.

Modern science confirms these wild mushrooms possess antioxidant, anticancer, immunomodulatory etc. properties, supporting both nutrition and

contd. pg.-3

Chairman's Desk

In a dense, low-lying deltaic city like Kolkata, ditches, canals, ponds, and other small water bodies are not minor landscape features– they are critical components of the city's ecological and hydrological system.

Scientifically, these small water bodies act as natural storm water buffers. Kolkata receives intense monsoonal rainfall, and its clayey alluvial soil has low infiltration capacity. Ditches and ponds temporarily store excess rainwater, reducing surface runoff and urban flooding. Hydrological studies show that decentralised water storage systems are more effective in flood mitigation than only relying on large drains in flat terrains.

They also play a vital role in groundwater recharge. Even slow percolation through silt and clay layers contributes to maintaining shallow aquifers, which is crucial for a city facing groundwater stress and salinity intrusion from the coast.

Ecologically, small water bodies support urban biodiversity– plankton, fish, amphibians, insects and wetland birds. These organisms regulate mosquito populations and improve local ecological balance. Research confirms that urban ponds act as 'stepping-stone habitats', connecting fragmented green spaces.

Thermally, water bodies help moderate urban heat islands through evaporative cooling, improving microclimate and human comfort. They also function as nutrient sinks, filtering pollutants and improving water quality.

Protecting and restoring Kolkata's ditches and ponds is therefore a science-backed necessity, not an aesthetic choice, for urban resilience, climate adaptation, and sustainable city living.

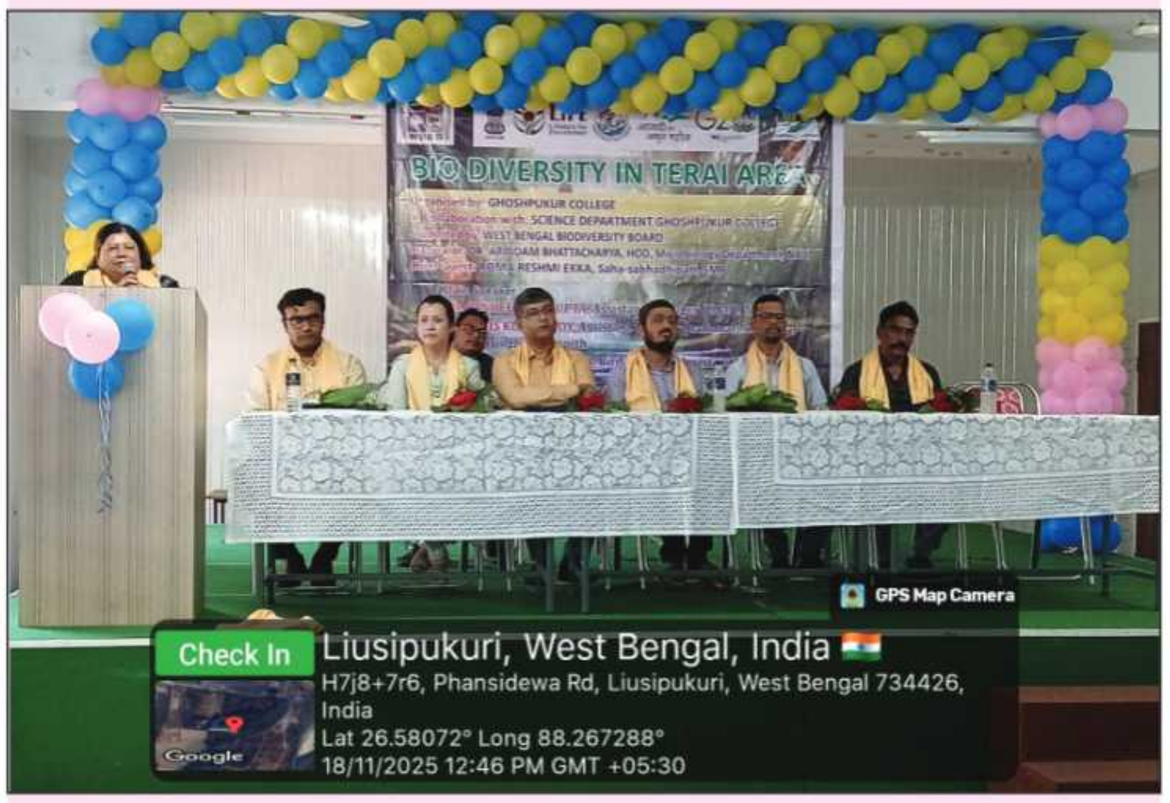
Dr. Himadri Sekhar Debnath

...An approach for conservation of native flora and associated butterflies involving school students

With biodiversity conservation as a major thrust area, the Board has initiated a Butterfly Conservation Programme in schools with active student participation. As the availability of host and nectar plants varies across habitats, conserving and restoring these plants helps protect butter-fly species native to each locality. Guided by this simple yet effective principle, schools are encouraged to establish butterfly gardens of at least 1,500 square feet, where selected host and nectar plants are systematically planted using a recommended list. Through this activity-based learning approach, students gain first-hand exposure to the intricacies of living organisms, nurturing curiosity, awareness, and a positive, long-lasting attitude towards biodiversity and environmental conservation.

The initiative has so far involved 84 schools across almost all districts of West Bengal.

IBD Extended Programme



Govt. General Degree College, Lalgarh, Jhargram and West Bengal Biodiversity Board (WBBB) jointly organized a seminar on the topic 'Biodiversity and Bio-resource management for future generations' on 3rd November 2025. In the Darjeeling district two WBBB supported seminars were organized in the colleges, one in the mountain region (Topic: Biodiversity and Sustainable Development at Darjeeling Government College on 14th November 2025); another one held at Terai-Dooars region (Topic: Biodiversity in Terai Area at Ghoshpukur College on 18th November 2025). A two-day seminar on 27th and 28th

contd. pg.-4

Editor's Column

Trees play a crucial role in reducing air, water and noise pollution, making them one of the most effective and affordable tools for environmental protection. In India, several native and commonly grown tree species are especially known for their pollution-control abilities.

Neem (*Azadirachta indica*) is one of the best natural air purifiers. It absorbs harmful gases like sulphur dioxide and nitrogen oxides while releasing oxygen and possessing anti-bacterial properties that improve overall air quality.

Peepal (*Ficus religiosa*) is remarkable for its high oxygen-releasing capacity. It helps remove carbon dioxide and other airborne pollutants, making it ideal for urban and roadside planting.

Banyan (*Ficus benghalensis*) has a large canopy and dense foliage that trap dust, smoke and particulate matter, thus reducing air pollution and providing cooling shade.

Arjun (*Terminalia arjuna*) is highly effective in absorbing carbon dioxide and is often planted along highways and industrial areas to control vehicular pollution.

Ashoka (*Polyalthia longifolia*) and Amaltas (*Cassia fistula*) are excellent dust and noise barriers, making them suitable for city roads and residential areas.

Jamun (*Syzygium cumini*) and Mango (*Mangifera indica*) not only provide fruits but also absorb toxic gases and improve urban air quality.

Planting and protecting these trees in cities, schools, parks and along roads can significantly reduce pollution, improve public health, and enhance biodiversity. Promoting native and pollution-resistant tree species is an important step towards creating cleaner and greener Indian cities.

Mr. R.P. Badana, IFS
Member Secretary

Wild Patches in non-forest areas: The 'Local Biodiversity Hotspots'

While we talking about 'Biodiversity Hotspots', the 'Himalayas' or the 'Western Ghats' containing dense forest with magnificent biodiversity, quickly appear in our mind, especially in Indian context. Norman Myers, first coined the term 'Biodiversity Hotspots' in 1988 for the biodiversity rich regions which have high endemicity of vascular plants (higher group of plants which are not found elsewhere) and are severely threatened due to habitat loss. Conservation International (CI) has adopted this concept and through rigorous analysis fixed criteria for the areas to be qualified for Biodiversity Hotspots [The region should have at least 1500 vascular plants and more than 70% area must have lost its original habitat/ natural vegetation]. So far, 36 regions of the globe are designated as 'Biodiversity Hotspots' of which India covers 4 regions : Himalaya, Western Ghats and Sri Lanka, Indo-Burma, Sundaland (covers Nicobar regions).

Now, if we move from global context to local perspective, especially in the village or urban landscapes, there can be spotted some small areas of wild patches, rich in local biodiversity elements. These may be the shrubberies or bushes or thickets, sparsely distributed in the vast agricultural matrix, along pond banks, river/canal banks, road sides, in the sacred

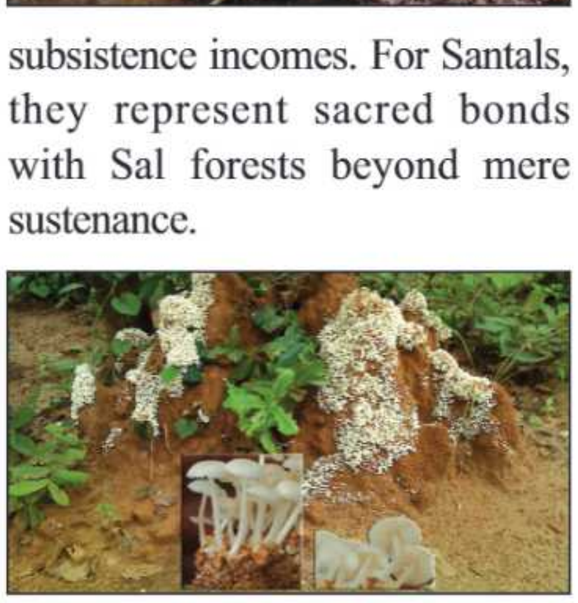
groves and even abandoned places. Such patches have been naturally structured since ages, initiated with some small trees or shrubs, gradually associated with mosaic of climbers and herbs. Climbing plants with the creepers, weak and woody climbers make the canopied structure of such small patches. The shape of the patch depends on the major shrubs or small trees and co-existing climbers. Special architecture of the patches makes conducive to the habitats of many wild animals. Wide diversity of larval host and nectar plants of this unique structure are nurturing many butterflies and other insect pollinators. Avian species, especially smaller birds, find suitability in such vegetation assemblage for their roosting and nesting places. Moreover, lizards, snakes and amphibians are also residing in these small patches. Even the mammals like Jackel, fox, jungle cat, civets, mongoose, porcupine, fishing cat, rodents, squirrel and other smaller ones are very comfortable to take shelter in these wild areas. The plants, once were very abundant and traditionally used in local health care, can easily be spotted in the special habitat with their utmost taste, fragrance and efficacy. Such wild patches are indeed the reservoir of local gene pool and an ecosystem sustaining wild populations– plant, animals, fungi and microbes.

Since few decades, there has been a gradual change in land use pattern through alteration of habitats for which the wild areas in rural and urban landscapes are being dwindled. This results to create critical habitat crisis for wildlife outside the forest areas. Only few fragmented landscapes with such tiny forest are still accommodating many wild life populations. The abundance of wild populations of which many are of scheduled species (under Wildlife Protection Act) or under IUCN red list category are restricted to these patches maintaining interpatch population dynamics. Thus from the local perspective, many species are 'endemic' to some specific patches which are not beyond the anthropogenic threats of habitat loss due to gradual encroachment, destruction of bushes by fire or using herbicides, fear psychosis from wild animals etc. Thus, these wild patches are indeed the 'Local Biodiversity Hotspots' which are probably the only landscape elements in rural or urban areas that sustain locally threatened species.

It would be wise to shift our mindset from 'Bush' to 'Local Biodiversity Hotspot' to save these important Biodiversity Treasure Trove.

...The Hidden Harvest: Wild Mushrooms

subsistence incomes. For Santals, they represent sacred bonds with Sal forests beyond mere sustenance.



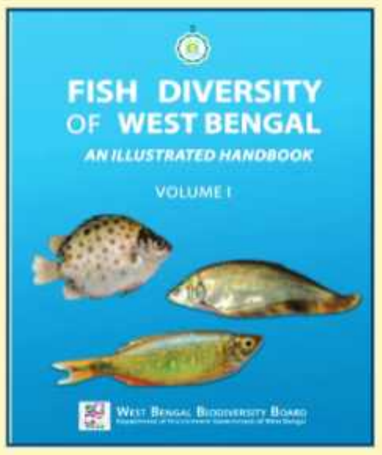
However, forest degradation, and youth migration are steadily eroding this ethno-mycological knowledge, threatening nutritional security, local subsistence livelihoods, causing a gradual disconnect that challenges the

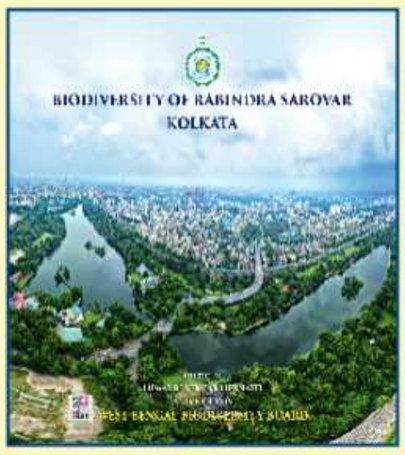
continuity of long-standing human–forest relationships. Safeguarding these precious resources and their habitats is crucial for ecological, socio-economic, cultural, and nutritional security of forest-dependent communities and mankind.

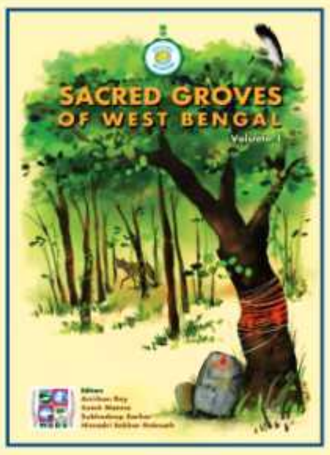
Award to Chandannagore Jagadhatri Puja Committees

Biodiversity Management Committee, Chandernagore Municipal Corporation and Chandernagore Municipal Corporation jointly conferred awards to five Jagadhatri Puja Committees of Chandannagore for spreading awareness on environmental protection and biodiversity conservation. The West Bengal Biodiversity Board supported this endeavour.

New Publications of the Board







For purchase related queries please contact :
West Bengal Biodiversity Board
Contact No.: 033 2335 2731 / Email: biodiversity.wbbb@gmail.com

Biodiversity Heritage Site : Birampur to Baguran Jalpai Inter-tidal Coastal Stretch

The inter-tidal coastal stretch from Birampur to Baguran Jalpai in Majilapur Gram Panchayat of Contai I Block, Purba Medinipur District measuring nearly 7.3 km in length is an intertidal zone (from low tide mark upto high tide mark during spring tide) providing habitat for of Red Crabs (*Ocypode macrocera*), Dotilla Crab (*Dotilla-myctiroides*), Fiddler Crab (*Uca lactea*) and many littoral fauna. The dunes and coastal scrubs at the supra littoral region of the said stretch also provides the habitats of many wild scheduled animals under Wild Life (Protection) Act, 1972 (as amended up to date) such as Monitor Lizard (*Varanus* sp.), Mongoose (*Herpestes* sp.), Golden Jackle (*Canis aureus*), Jungle Cat (*Felis chaus*). The habitat of Red Crab associated with other littoral faunal components is very significant for coastal resilience through stabilizing the sandy beach. Moreover, the dunes and coastal scrubs have the immense role for nurturing many wild animals.

...IBD Programme

November 2025 was organized by Malda College and WBBB on the topic 'Emerging Trends in Biodiversity in India: Challenges and Solution'. Focusing on 'Biodiversity Conservation and Sustainable Livelihoods', a seminar was organized jointly by D.N.C. College and Biodiversity Board at Murshidabad on

5th and 6th December 2025. In all the seminars students, teachers, researchers, administrators were actively participated. The message on Biodiversity Conservation, Livelihood promotion and role of student teachers in sustainable development has been deiminated to the young minds.

Biodiversity in rituals and festivals: Tusu and Bhadu

Dr. Himadri Sekhar Debnath

Tusu-Vadu, also known as **Tusu Parab**, is a traditional folk harvest festival celebrated mainly in the rural districts of West Bengal such as Purulia, Bankura, Bardhaman, and Medinipur, along with adjoining regions of Jharkhand and Odisha. Observed during the Bengali month of Poush and culminating around Makar Sankranti, the festival marks the end of the winter harvest season and reflects the deep bond between agrarian communities and nature.

Tusu is essentially a thanks giving celebration, expressing collective gratitude for a successful harvest. Unlike temple-centric festivals, it is rooted in village life and community participation, especially involving young girls who sing Tusugeet– folk songs rich with themes of nature, seasons, love, and social aspirations. These songs, along with Jhumur and other folk dances, transform fields, village paths, and riverbanks into spaces of cultural expression.

Nature plays a central role in every aspect of Tusu-Vadu. The festival begins with the worship of the last sheaf of harvested paddy, symbolizing agricultural fertility and abundance. Rice husk (tush) is used to shape the symbolic Tusu figure, while offerings include rice, flattened rice, puffed rice, and jaggery– direct products of the harvest. Homes are decorated with alpona made from rice paste, and seasonal flowers, durba grass, and local plants are used in rituals.

Water is a vital element, highlighted through the immersion of the Tusu idol and bamboo choudal in rivers or ponds, symbolizing renewal, purification, and the completion of the agricultural cycle. The timing of the festival during Makar Sankranti also emphasizes the importance of the sun, seasonal transition, and longer days, reinforcing Tusu-Vadu as a living celebration of nature, ecology, and rural life in West Bengal.

Published by the Chairman, West Bengal Biodiversity Board [Deptt. of Environment, Govt. of WB, Prani Sampad Bhawan (5th floor), LB-2, Sector-III, Salt Lake City, Kolkata-700106, West Bengal, India; Phone : 033 2335 2763 / 2731, E-mail : biodiversity.wbbb@nic.in; Website : www.wbbb.wb.gov.in] and designed by S. Ghosh