



# INDIAN WILDLIFE

POST GRADUATE DEPARTMENT OF  
CONSERVATION BIOLOGY  
DURGAPUR GOVERNMENT COLLEGE

NEWSLETTER NO: CONB/ WILDLIFE/ 2024/ 2

Message from the Principal	1
Papers published around the globe	2
Participation in Pangolin Research Workshop	3
Participations in various events	4
Educational visits to Laboratories and Industry	5
Department's Initiatives from June to December 2024	6
Add on Course on Statistical and Ecological Modelling	8
Student Achievements	10
<b>News Corner: Conservation of Forest Birds in India</b>	<b>11</b>

## MESSAGE FROM THE PRINCIPAL

Dear Friends and Colleagues,  
Good morning to all!

It is a great pleasure to open the sixth newsletter of Department of Conservation Biology, Durgapur Government College. This newsletter is mainly published to highlight the academic and co-curricular activities carried out by the Department as a team or as an individual during the second half of the academic year 2024-2025. Apart from this, a news corner dedicated to the forest bird conservation in India is also a part of this endeavour. Through this newsletter, ideas and messages regarding wildlife conservation and threats will be dealt with and students of this course will learn a new approach to conservation and protection.

I wish all the best to the faculty members, research scholars and students.

**Dr. Debnath Palit**  
**Principal**

**Durgapur Government College**

**30<sup>th</sup> January 2025**

## NEWSLETTER OF CONSERVATION BIOLOGY

The Newsletter of Conservation Biology displays a compilation of information on the wildlife, their habitats and their conservation status around the globe in the news corner. Some information published here are obtained from free and publicly available sources such as the internet, newspapers and other publications. The publisher of this newsletter does not make any claim on the authenticity of the contents of the secondary sources of information. The information does not necessarily represent any official views of the publisher.

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*Header Photo: Dr. Rajib Biswas*



PAPERS PUBLISHED FROM THE DEPARTMENT AROUND THE GLOBE



Uttar Pradesh Journal of Zoology

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ISSN: 0256-870X (P)

## Macrophytes and Odonata of Man-made Lakes: Biodiversity Assessment in Raniganj-Asansol Belt, West Bengal, India

Snigdha Mukherjee <sup>1</sup>, Sanchari Sarkar <sup>2</sup>,  
Tapajit Bhattacharya <sup>3</sup>, Aloke Kumar Mukherjee <sup>4</sup>,  
Moitreyee Chakrabarty <sup>1</sup> and Rajib Biswas <sup>1</sup>

<sup>1</sup> Department of Conservation Biology, Durgapur Government College, JLN Avenue, Durgapur 713211, Paschim Bardhaman, West Bengal, India.

### AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. Authors MC and ABM contributed to the design and conceptualization of the study. Author SM did Data collection and curation. Authors TB and SS performed Data analysis and statistical analysis. All authors edited, prepared, read and approved the final manuscript.

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### Original Research Article

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### ABSTRACT

The ecological interplay between macrophytes and odonata in the pit lakes of the Raniganj-Asansol belt, West Bengal, was assessed for five (5) months. The study recorded a diverse array of 10 aquatic and 10 terrestrial macrophyte species from various families, as well as 22 Odonata species.

\*Corresponding author: Email: [snigdha.mukherjee@rediffmail.com](mailto:snigdha.mukherjee@rediffmail.com)

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Witkamp et al. *Environ Monit Assess* (2024) 180:100000. <https://doi.org/10.1007/s10661-024-20000-0>

Page  
12

Analysis of Venscore (AMODAL) revealed significant disparities in macrophyte density and abundance among the pit lakes. Notably, core lake was devoid of macrophyte, which was associated, as indicated by significant distance variable ( $F = 4.034$ ,  $P = 0.020$ ), and abundance variable ( $F = 4.034$ ,  $P = 0.020$ ). The findings highlight the presence of macrophyte diversity along with Odonata and suggest that reclaimed pit lakes can harbor such biodiversity. Also, inclusion of water quality assessment is the major limitation of this study.

Keywords: Macrophytes, Biodiversity, Odonata, macrophytes, Odonata.

### 1. INTRODUCTION

The formation of pit lakes from abandoned open-pit mining activities is a significant environmental concern, particularly in India. The world's third-largest coal producer, these artificial lakes, often deeper than natural counterparts, emerge from coal, iron, and groundwater mining operations (Coxon & Moore, 2009). While coal mining is crucial for energy production, it adversely affects the environment through contamination, land subsidence, water table disturbance, and pollution (Sarkar et al., 2019).

Macrophytes play a pivotal role in aquatic ecosystems and are classified as either aquatic or terrestrial aquatic macrophytes, which are essential for the resilience of various aquatic species. They are categorized based on their life cycle into free-floating, submersed, and emergent types. These classifications have implications on the distribution of macrophytes (Bent et al., 1998; Alarcón et al., 2010). Terrestrial macrophytes, though not submersed, are crucial in the health of aquatic ecosystems, providing food and shelter to a range of faunal species. They also take up pollutants, resulting in the aquatic ecosystem as well as prevent shoreline erosion.

Odonata, belonging to the insect order that includes aquatic macrophytes for oviposition, exhibit a remarkable diversity across biogeographical realms, with no known species in Antarctica (Gherardi & Kalkman, 2009). India, part of the faunal realms, has reported over 500 species and subspecies (Andrew et al., 2008). West Bengal's diverse habitats contribute to its rich insect biodiversity and a variety of aquatic macrophytes. The study is limited to 22 Odonata species across 114 genera and 11 families (Datta, 2021), with the Libellulidae family being the most diverse. Even in highly urbanized areas like Salt Lake, Kolkata, a significant number of Odonata species thrive, demonstrating their adaptability to various environments (Mistry et al., 2016). The Asansol-Durgapur Industrial belt in West Bengal has

added 13 new species to its list, bringing the total to 57 (Mistry & Roy, 2013), further showcasing the remarkable resilience of this species.

Despite the evident correlation between Odonata and macrophyte vegetation, a comprehensive study in West Bengal's pit lakes is in focus on Odonata within pit lakes, a relatively unexplored area compared to established theories (Bent et al., 2010). This study aims to bridge this gap by exploring the relationship between macrophytes and Odonata within these ecosystems. The objective is to assess the density of macrophytes and Odonata in the Raniganj-Asansol pit lakes and to understand their relationship.

### 2. METHODS

Four open-cast pit lakes in Raniganj-Bardhaman were selected: Modhuri Dihara (MODP), Sankar (S-ODP), Karmali (KODP), and Naligram (N-ODP). The MODP observation station comprises of the now-abandoned Modhuri Dihara Open Cast Pit Mine (abandoned 45 years ago), and the estate area, lying within 150 m radius, encompassing the closed mine, with exception on its eastern side, where, this study was done only up to 250 m. In the proximity of the south alignment of the railway track of Asansol-Saltash Branch Railway Line, Sankar Mine (Sankar Mine) is the western side of the alignment site included in the observations. The KODP observation station is located at the Karmali Open Cast Pit Mine, which has been abandoned for the past 10 years. The study area encompasses the entire 170-hectare radio surrounding the closed mine, and the NODP observation station is located at the Karmali Open Cast Pit Mine, which has been abandoned for the past 12 years. The study area encompasses the entire 27-hectare radio surrounding the closed mine. Karmali ODP is strategically located by several experts to the west, Sonarpur Bazaar and Pundravardhan Area, to the east, Jhargra and Faridpur Durgapur (CD



### PROCEEDINGS OF THE WORKSHOP

## REGIONAL WORKSHOP ON PANGOLIN RESEARCH IN THE HIMALAYA

Sharing experiences on research methodologies and identifying research priorities  
08-09 November 2024 Darjeeling, West Bengal-India

- Mr. Debayan Gayen (Durgapur College, West Bengal, India) presented his work on the Indian Pangolin in South Bengal highlighting the low probability of pangolin detection requiring experienced, skilled field workers and large sampling. He demonstrated the use of climate models to study the habitat availability of the pangolin. Furthermore, he highlighted the lack of financial support, and resources available to pangolin researchers.



## PARTICIPATION IN REGIONAL WORKSHOP ON PANGOLIN RESEARCH IN HIMALAYA

The Ashoka Trust for Research in Ecology and the Environment (ATREE) organized a Regional Pangolin Workshop in Darjeeling from November 8th to 9th, 2024. This workshop, titled "Pangolin Research in the Himalaya: Regional Workshop-sharing experiences on research methodologies and identifying research priorities," was part of a project focused on pangolin conservation in the Kanchenjunga landscape and supported by Ocean Park Conservation Foundation, HongKong.

Pangolins, a group of eight scaly, insectivorous mammals native to the Afrotropical and Asian regions, are threatened primarily due to illegal wildlife trade and habitat loss. The workshop aimed to address the unique challenges in pangolin research and conservation across the Himalayan region by developing region-specific field methodologies, improving local capacity, and enhancing coordination between researchers. Mr Debayan Gayen, Research Assistant, WBZA project attended this workshop on invitation from the organizers.



Advanced Science (Bangalore), Northeast Regional Institute of Science and Technology, Asian Development Bank, Wildlife Conservation Society (India) and Durgapur Government College.



Participants shared their experiences, drafted a methodology protocol for pangolin research in the

Himalayas, identified priority research areas, and equipped themselves with the necessary skills for effective pangolin research and conservation in the region.

This collaborative effort marks a significant step forward in the conservation of pangolins in the Himalayan region, ensuring that these unique and endangered species receive the attention and protection they deserve.





## PARTICIPATIONS IN VARIOUS EVENTS

Our students have actively participated in various events from June to December 2024, showcasing their commitment to education and environmental awareness. Here is a detailed write-up on their involvement:



Neha Dey, Sneha Nandi, Rima Mondal, Chirasmita Das, Mou Karmakar, Puja Chatterjee, Priyanka Ghosh, Supriti Ghosh, and Uttam Kumar Gorai took part in the "Unite for Nature Pledge" organized by the Ministry of Environment, Forest and Climate Change, Government of India on 4th June 2024. This event highlighted their dedication to environmental conservation and their commitment to preserving nature.

Sneha Nandi, Neha Dey, Rima Mondal, Morali Biswas and Sharmila Soren participated in a three-day workshop on "R workshop with statistical methodology for biological sciences" from 20th to 22nd November 2024. This workshop, organized by the DBT Star

College Scheme and hosted by the Departments of Botany, Mathematics, and Physics at Durgapur Government College, enhanced their skills in statistical analysis and data interpretation in the context of biological sciences.

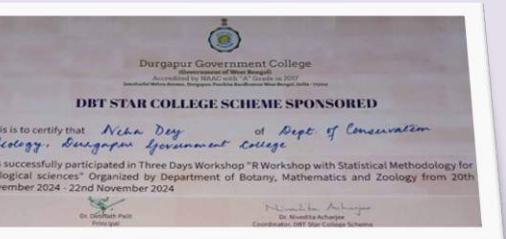
Neha Dey and Rima Mondal undertook an internship under the Grey Wolf Conservation Program from 8th to 30th October 2024.

This internship, organized by the Wildlife and Nature Guide Society, allowed them to gain hands-on to the protection of grey wolves.

Debayan Gayen participated as a trainer in an online training course on Occupancy Modelling with Presence Software on 22nd December 2024. This training, organized by Habitat Lens Private Limited, equipped them with essential skills in occupancy modelling and data analysis.



Lastly, Sneha Nandi participated in a one-month national level online training program on "Environmental Impact Assessment (EIA)" from 9th November to 18th December 2024. This program, organized by the Centre for Environmental Research, Education and Development (CERED) of Haripur Friends of Environment, provided her with comprehensive knowledge and skills in environmental impact assessment.





## EDUCATIONAL VISITS TO LABORATORIES AND INDUSTRY

On 23rd July 2024, Neha Dey, Sneha Nandi, and Rima Mondal from the Department of Conservation Biology participated in an online industry visit to the Central Sericultural Unit in Sriniketan. This visit, organized by the Department of Conservation Biology at Durgapur Government College, provided them with valuable insights into the sericulture industry and its conservation efforts.

Chirasmrita Das, Mou Karmakar, Puja

Chatterjee, Priyanka Ghosh, Supriti Ghosh, Uttam Kumar Gorai, and Abakash Kumar Sah visited the research laboratory of the Department of Biotechnology at The University of Burdwan on 21st June 2024. This visit, organized by the Department of Biotechnology at The University of Burdwan, offered them an opportunity to explore advanced research facilities and learn about cutting-edge biotechnological research.



Page  
15





## DEPARTMENT'S INITIATIVES FROM JUNE TO DECEMBER 2024

### Online Film Screening of Video Documentaries

**#Generation Restoration (5th June 2024)** On 5th June 2024, in celebration of World Environment Day, the department organized an online film screening of video documentaries titled #Generation Restoration. This event aimed to raise awareness about the importance of environmental restoration and inspire students and participants to take action towards a sustainable future.



### Nature Study Camp (11th July 2024)

The department organized a Nature Study Camp on 11th July 2024, under the MoU with Bonding with Animals and Nature Foundation (BAN), in

collaboration with the Durgapur Forest Division. This camp offered students a unique opportunity to explore and study nature in its natural habitat, fostering a deeper connection with the environment.

**Wings Unfurled: A Hands-on Birdwatching Guide (7th June 2024)** On 7th June 2024, we conducted "Wings Unfurled: A Hands-on Birdwatching Guide" under the Memorandum of Understanding (MoU) signed by the Bird Watcher's Society. This event provided participants with practical knowledge and skills in birdwatching, enhancing their appreciation for avian biodiversity.



**Nature's Candid Moments: A Glimpse into the Wild through Camera Trap (13th July 2024)** On 13th July 2024, we held a workshop titled "Nature's Candid Moments: A Glimpse into the Wild through Camera Trap," focusing on the use of camera traps and CCTV in wildlife monitoring. This workshop, organized under the MoU with Wildlife and Nature Guide Society (WINGS),

Durgapur, equipped participants with essential techniques for wildlife research and conservation.





**Interactive Session on Snake Identification and Snakebite Management (15th to 16th July 2024)** In celebration of World Snake Day, the department organized an interactive session on snake identification and snake bite management from 15th to 16th July 2024. This session, conducted under the MoU with Bonding with Animals and Nature Foundation (BAN) and Wildlife and Ecology (WNE), provided valuable insights into herpetology and snakebite safety measures.

Butterfly walks in a college campus are an enriching and educational experience for students and nature enthusiasts alike. With more than 20 butterfly species fluttering through Durgapur Government College campus, these walks offer a unique opportunity to observe and study the diverse array of butterflies and the intricate relationships they share with the environment. The campus houses a rich diversity of habitats, supporting a wide variety of butterfly species. By participating in butterfly walks, students can gain a deeper understanding of the importance of biodiversity and the role of each species in the ecosystem. Butterfly walks also foster a sense of appreciation and respect for nature. Observing these delicate and colorful creatures in their natural habitat can be both awe-inspiring and therapeutic, promoting mental well-being and reducing stress. Additionally, these walks serve as a practical learning experience, allowing students to apply theoretical knowledge from their conservation biology courses to real-world observations.



**Online Topper's Interaction 3 (23rd November 2024)** On 23rd November 2024, we conducted the Online Topper's Interaction 3, an event aimed at facilitating interactions between students and top performers. This platform enabled students to gain insights from their peers' academic achievements and experiences.



**Butterfly Walk (23rd October 2024)** The Butterfly Walk held on 23rd October 2024, was another significant event organized by the department. This event allowed participants to observe and learn about various butterfly species, promoting biodiversity awareness and conservation.



**Alumni Lecture 4 (28th November 2024)** The department also organized Alumni Lecture 4 on 28th November 2024. This lecture series provided current students with the opportunity to learn from the experiences and expertise of our distinguished alumni, fostering a sense of community and continuity.

#### MoUs Signed by the Department: 04

Additionally, during this period, the department successfully signed four MoUs, taking the initiative to collaborate with the Bird Watcher's Society, Wildlife and Nature Ecology (WNE), Bonding with Animals and Nature (BAN), and Manbhum Ananda Ashram Nityananda Trust (MANT). These collaborations have significantly enriched our programs and provided valuable



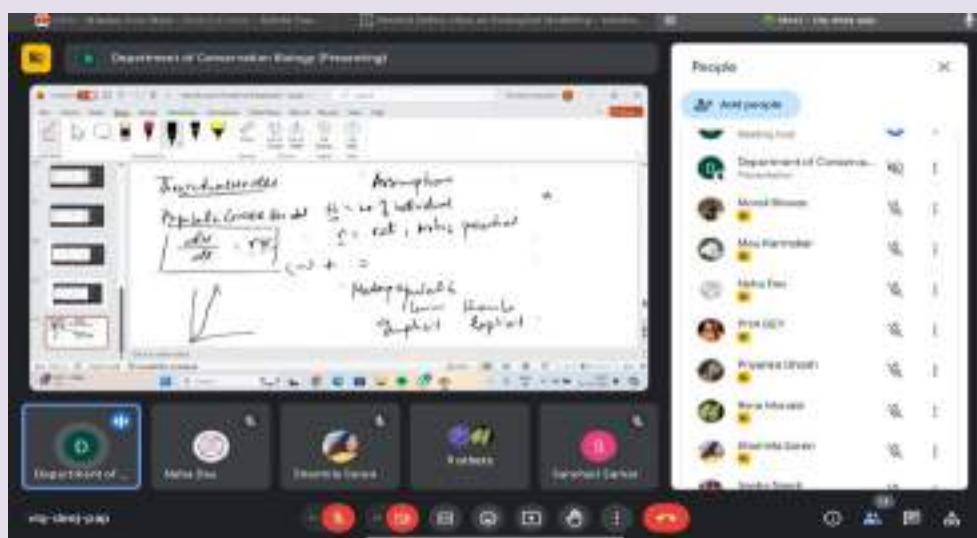
## ADD ON COURSE ON STATISTICAL AND ECOLOGICAL MODELLING: A NEW INITIATIVE



An Online Addon Course in Statistical and Ecological Modelling initiated by Department of Conservation Biology, Durgapur Government College from 9th July to 17th August 2024. This course was designed to address the curricular gap in the academic field by providing students with essential knowledge and practical skills in time series analysis and ecological modelling. A total of 15

students attended and passed the course.

The primary objective of the course was to enable students to utilize various data analysis tools, program-oriented software, and online resources for predicting future outcomes based on past observations. The course aimed to bridge the gap between theoretical knowledge and practical applications in fields such as ecology, environment, natural resource management, tourism, business, and hospital management.



The course was open to undergraduate and postgraduate students of the Science stream who possessed basic computer knowledge and were proficient in handling online mobile apps. The course was delivered fully online using the gnomio (MOODLE) class and Google Meet Platform. The curriculum was designed to leverage open-source online software accessible via laptops, computers, and mobile phones.



### Who can apply?

All students of science stream from UG and PG Departments of Durgapur Government College.

### How to apply?

#### Registration Link

Enrolled students will be added in the Whatsapp group of the course. Students can also enroll offline by contacting Department of Conservation Biology

### Course Coordinator

Dr. Monireya Chakraborty  
Department of Conservation Biology  
Durgapur Government College

Queries (if any) regarding the course should be sent by e-mail to the Course Coordinator by email to

hdcconb@geocities.com

After attending the course, students gained a basic understanding of statistical concepts and their applications in biology. They acquired knowledge of different global ecological models and learned how to use STELLA for managing the environment and

Page 19

wildlife. They developed skills in trend analysis and forecasting in various fields such as science, humanities, and commerce through the application of time series and machine learning. Students received hands-on experience with R software, which included generating time series graphs, polar plots, forecast models using artificial neural networks (ANN) and machine learning (ML), and understanding cross-validation and goodness of fit analysis. They also learned about population models and their applications in real-world problems, particularly in wildlife conservation of threatened species and habitats. Additionally, they became proficient in using software such as PAST and R for ecological statistics, biodiversity, and natural resource management.

The online add-on course successfully provided students with valuable knowledge and practical skills, preparing them to meet the demands of modern science-based statistical approaches. The course was well-received, and all 15 students who participated passed with flying colours. This initiative reflects the institution's commitment to enhancing the academic and professional capabilities of its students and addressing the gaps in the current academic curricula.





## STUDENT ACHIEVEMENTS

**Subhradeep Chakravarty**, a student of our department, has made us proud by qualifying for the National Eligibility Test (NET) in Life Sciences in 2024. He achieved an impressive All India Rank of 135, reflecting his dedication and academic excellence in the field of life sciences.

### Placements in Jobs and Academics

#### 1. Subhradeep Chakravarty (2022 Pass Out):

Subhradeep Chakravarty, after completing his studies in 2022, has joined the prestigious SN Bose National Centre for Basic Sciences in Kolkata. He began his tenure under the guidance of Dr. Subhasish Halder, Associate Professor, Department of Chemical and Biological Sciences, on 30th December 2024. This placement marks a significant milestone in his academic career, providing him with valuable opportunities for research and professional growth.

#### 2. Priyanka Ghosh (2024 Pass Out):

Priyanka Ghosh, who graduated in 2024, has secured a teaching position at Narayana School in Asansol. Her commitment to education and her passion for teaching have led her to this rewarding career, where she will inspire and educate future generations.

#### 3. Anisha Sharma (2023 Pass Out):

Anisha Sharma, a 2023 graduate, has embarked on her teaching career as a Primary Teacher at LOKA: Imagine the Impossible in Magadh, Bihar. Her dedication to primary education and her innovative teaching methods will significantly contribute to the development of young minds in her community.

These achievements reflect the hard work and dedication of our students, as well as the high-quality education and support provided by our institution. We are proud of their accomplishments and wish them continued success in their future endeavours.



भारत सरकार  
विज्ञान एवं प्रौद्योगिकी मंत्रालय  
Council of Scientific & Industrial Research

JOINT CSIR - UGC NET JUNE 2024

National Testing Agency - Score Card

भारत सरकार  
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National Testing Agency  
विज्ञान एवं प्रौद्योगिकी मंत्रालय

Application Number:	747870000823	Roll Number:	1402095651
Candidate's Name:	SUBHRADEEP CHAKRAVARTY		
Mother's Name:	SIBRAMONI CHAKRAVARTY		
Father's Name:	SUDHAKAR CHAKRAVARTY		
Category:	GENERAL	Persons with Disability (PwD):	NO
Gender:	MALE	Date of Birth:	02-02-1998
Subject:	LIFE SCIENCES (705)		
No. of Candidates in this Subject:	Registered: 9863	Appeared: 6283	
Applied Post:	JRF/JUNIOR RESEARCH FELLOWSHIP/ASSISTANT PROFESSOR (Ph.D. ONLY)		



Paper	Percentile Score (Ranking)	Normalized Score (Ranking)
Total Part A, B and C	90.48/87015	117.47/4869
Total Percentile Score (in words)	Ninety Nine point Four Six Eight Seven Nine One Five	One Hundred Seventeen point Four Seven Three Four Three Eight Nine One
Result:	QUALIFIED FOR CSIR-UGC NET ELIGIBILITY FOR ASSISTANT PROFESSOR	
Rank:	138	

\*Marks are normalized for exams conducted in multiple shifts.

Dated: 11.09.2024/14.10.2024

Score Card (PTC)





## News Corner Theme: Conservation of Forest Birds in India

### INDIA TOOK MAJOR STEP IN VULTURE CONSERVATION



In a major step for vulture conservation, the Indian Government has prohibited the use of Nimesulide, a commonly used veterinary painkiller that is harmful to birds. The SAVE Partnership, which includes BirdLife International, Bombay Natural History Society (BNHS – BirdLife in India), Bird Conservation Nepal (BirdLife in Nepal), NatureLife Cambodia (BirdLife in Cambodia), and the RSPB (BirdLife in the UK), has been instrumental in achieving this ban. For over 20 years, they have been dedicated to conserving vultures in Asia. The ban on Nimesulide was based on research

conducted by the Indian Veterinary Research Institute (IVRI) in collaboration with BNHS, the Salim Ali Centre of Ornithology, Pretoria University, and the RSPB.

<https://www.birdlife.org/news/2025/01/10/vulture-conservation-in-india-boosted-by-additional-veterinary-drug-ban/>

### INDIA LEADS INITIATIVE TO PROTECT MIGRATORY BIRDS ALONG THE CENTRAL ASIAN FLYWAY



© Shutterstock/ Nejib Ahmed

Government of India, with strong support from BirdLife International, has led the way in establishing an Initiative for the Central Asian Flyway under the UN Convention on Migratory Species (CMS COP14). This groundbreaking Initiative will unite governments, BirdLife Partners, and other stakeholders

to ensure the safe passage of migratory birds across 30 countries, from Siberia to the Maldives. Despite being the shortest of the global flyways, the Central Asian Flyway boasts stunning landscapes, including the majestic Himalayas, icy Tundras, vast Arabian deserts, and the open waters of the Indian Ocean. Regrettably, over 240 species of migratory birds in the Central Asian Flyway are experiencing population declines, with 48 species classified as globally Threatened or Near Threatened. Many of these migratory birds hold cultural significance for the communities that have coexisted with them for centuries, such as the White Stork in Uzbekistan, the Black-Necked Crane in Bhutan, and the Steppe Eagle in Kazakhstan.

<https://www.birdlife.org/news/2024/02/17/the-government-of-india-leads-a-new-era-for-bird-conservation-in-central-asia/>



*Back Cover Photo: Debayan Gayen*

#### ANNOUNCEMENT

- ♦ The theme of the next issue (June 2025) of Newsletter of Conservation Biology will be “**Conservation of Butterflies in India**”. Contributions may please be submitted to **Dr. Moitreyee Chakrabarty**, Assistant Professor and Head, PG Department of Conservation Biology at Durgapur Government College, Durgapur ([hodconb.dgc@gmail.com](mailto:hodconb.dgc@gmail.com)) by 1 May 2025

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