SUMMARY REPORT

Asian Waterbird Census 2022

Results of Mid-winter Counts by
Biodiversity Management Committees
and
Asian Waterbird Census Network

Data Collection
Biodiversity Management Committees and Asian Waterbirds Census volunteers

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Asian Waterbird Census 2022

Results of Mid-winter Counts by Biodiversity Management Committees and
Asian Waterbird Census Network

Wetlands INTERNATIONAL

राष्ट्रीय जैव विविधता प्राधिकरण
National Biodiversity Authority, India
2003

BNHS India CONSERVING NATURE SINCE 1883

ACKNOWLEDGMENTS

We extend our deepest appreciation to the extensive network of Biodiversity Management Committees (BMCs), AWC volunteers, civil society and non-profit organisations who participated in conducting winter counts of Asian Waterbird Census (AWC), 2022. Their contribution towards field counts and preparation of this report is valuable. Also, we are thankful to the AWC coordinators and experts for guiding the BMCs on protocol for waterbird monitoring, wetland assessment and participating in AWC.

We are also grateful to all wetland managers and protected area managers for extending their time, energy and enthusiasm for successfully conducting AWC at their sites.

We are indebted to the officials of State Biodiversity Boards, Union Territory Biodiversity Councils and AWC India state coordinators for meticulously planning and implementing the program within their respective States/Union Territories. This collaborative endeavor of monitoring waterbirds as well as preparation of this report was not possible without their continued advice and guidance at all stages of the process.
We sincerely acknowledge the guidance provided by Dr V.B. Mathur, Chairman of the National Biodiversity Authority towards institutionalising of AWC within operations of Biodiversity Boards & Councils as an annual affair. We are also indebted to Secretary, NBA and the NBA team comprising of young professionals, consultants and interns for their contribution in both planning and implementation of this activity. We greatly value the support and guidance of the advisory board of the Wetlands International South Asia, Dr Sidharth Kaul (President), Dr Ajit K. Pattnaik (Vice President), Dr J.K. Garg (Honorary Treasurer) towards mainstreaming AWC efforts within national level conservation programmes and actions, and in preparation of this report.

Last but not least, we are thankful to our colleagues at Wetlands International South Asia and Bombay Natural History Society for successfully coordinating this collaboration, from the early stages of conceptualisation, to trainings and field counts leading to the release of this report.

CONTENTS

EXECUTIVE SUMMARY

The Asian Waterbird Census (AWC), a citizen science initiative is jointly coordinated by the Bombay Natural History Society (BNHS) and Wetlands International South Asia (WISA) in India. It fosters participation of local conservation enthusiasts in monitoring waterbird diversity and wetland conditions.

In order to institutionalise waterbird monitoring in wetlands across the country and beyond the sites designated as protected areas, the AWC network partnered with the National Biodiversity Authority (NBA), a nodal organisation on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits. The AWC network at the national and state-level collaborated with the State Biodiversity Boards (SBB), Union Territory Biodiversity Councils (UTBC) and Panchayat level Biodiversity Management Committees (BMC) to promote participation of their members in wetland conservation and waterbird monitoring, and use the census to strengthen People's Biodiversity Registers (PBR) as mandated under section 41(1) of National Biodiversity Act (2002).

Under the guidance of AWC Coordinators and officials of SBB and UTBC, over 650 BMC representatives and volunteers from 119 organisations participated in the mid-winter waterbird counts covering 142 wetlands from 19 States and Union Territories viz., Arunachal Pradesh, Assam, Chhattisgarh, Delhi NCT, Goa, Gujarat, Haryana, Maharashtra, Meghalaya, Mizoram, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand, and West Bengal. The nation-wide census reported a total of 179 waterbirds and wetland-dependent avian species, tallying around 1,22, 588 (one lakh twenty two thousand five hundred and eighty eight). Many of these species are classified as migratory and use the Central Asian Flyway to visit Indian wetlands during winters. The census also reported several IUCN red-listed threatened species such as Baer's Pochard, Common Pochard and Lesser Adjutant, underlining its significance as an important biodiversity and habitat monitoring tool.

The collaborative effort highlighted the need of building capacities of the BMC members to realise their full potential in sensitising local stakeholders on biodiversity conservation and preparing ground for community-based biodiversity conservation actions.

The information generated through this process is intended to be used for planning and execution of conservation activities within the country such as identification of wetlands of conservation significance, designation as Ramsar Sites and Flyway Network Sites, inclusion of priority wetlands within national and state level programmes, and promoting community ownership in wetlands management.

19 STATES & UNION TERRITORIES

142 WETLANDS

179 WATERBIRD AND WETLAND-DEPENDENT SPECIES

119 ORGANISATIONS AND 650 VOLUNTEERS

1. ASIAN WATERBIRD CENSUS

Waterbirds are an important component of wetland landscapes. Wetlands provide a biologically productive and diverse ecosystem, suitable to serve as essential breeding and feeding grounds for a diverse range of resident and migratory waterbirds. Several factors govern the relationship between wetlands and waterbirds, the key being inundation regime and quality of water; availability of food and shelter; and the presence or absence of predators. Conversely, waterbirds may function as indicators of the ecological productivity of wetlands.

Conservation of these species and their habitats needs to be based on quality data and recent information on their distribution and trends. To effectively address this need, AWC has been collating and disseminating information on waterbird counts and wetlands since 1987 to inform governments, conventions, and the public. The AWC runs in parallel with other waterbird censuses carried out in Africa, Europe, Central and West Asia, the Caribbean and Central and Southern America under the broad umbrella of the International Waterbird Census (IWC). The IWC is coordinated internationally by Wetlands International (except in the Caribbean and Central America) and is considered as one of the largest and longest-running internationally coordinated citizen-science biodiversity monitoring programmes in the world.

The primary objectives of IWC that it has successfully been achieving till now are:

- Monitoring changes in waterbird numbers and distribution by regular, standardized counts of representative wetlands.
- Providing the basis for estimates of waterbird populations (e.g., Bamford et al., 2006).
- Improving knowledge of little-known waterbird species and wetland sites.
- Increasing awareness of the importance of waterbirds and their wetland habitats at local, national, and international levels.

In India, AWC is jointly coordinated by the Bombay Natural History Society (BNHS) and Wetlands International South Asia (WISA). The census is carried out by volunteers, interested in collecting information on waterbirds and wetlands. Data collected by the AWC contributes to species and wetlands conservation, development of the National Biodiversity Strategy and Action Plan, identification and designation of ornithologically important sites (Important Bird and Biodiversity Areas and wetlands of international importance under Ramsar Convention) and studies on bird movements and relationships to avian diseases.

Gitanjali Kanwar

2. INSTITUTIONALISATION OF ASIAN WATERBIRD CENSUS IN NATIONAL BIODIVERSITY AUTHORITY PROGRAMMES AND ACTIONS

In order to institutionalise waterbird monitoring in wetlands across the country and beyond the sites designated as protected areas, the AWC network partnered with the National Biodiversity Authority (NBA), a nodal organisation on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits. The AWC network at the national and state-level collaborated with the State Biodiversity Boards (SBB), Union Territory Biodiversity Councils (UTBC) and their Panchayat level Biodiversity Management Committees (BMC) to promote the participation of citizens in wetland conservation and waterbird monitoring, use the census results to develop local People's Biodiversity Registers (PBR).

The process of institutionlisation started with a series of training sessions on the AWC for representatives of SBBs and UTBCs. These online training sessions were organised by the NBA, WISA, and BNHS on January 21st and 25th, 2022 (Image 1). The workshops were organised with the objective of training SBB and UTBC officials in conducting the AWC and using it for wetlands conservation planning and activities. It was attended by over 300 participants representing 28 SBB and 8 UTBC. A field-based orientation exercise was conducted on 12th and 19th February 2022 where 19 SBB and UTBC collaborated with the AWC India state coordinators and volunteer networks to perform waterbird census.

This summary report presents efforts put in by all volunteers, experts and organisations to undertake AWC and reports on the diversity of waterbirds at the surveyed wetlands. This report will serve as a primer to foster citizen participation in wetlands conservation and integrate the findings in respective state and panchayat level conservation action planning and execution.

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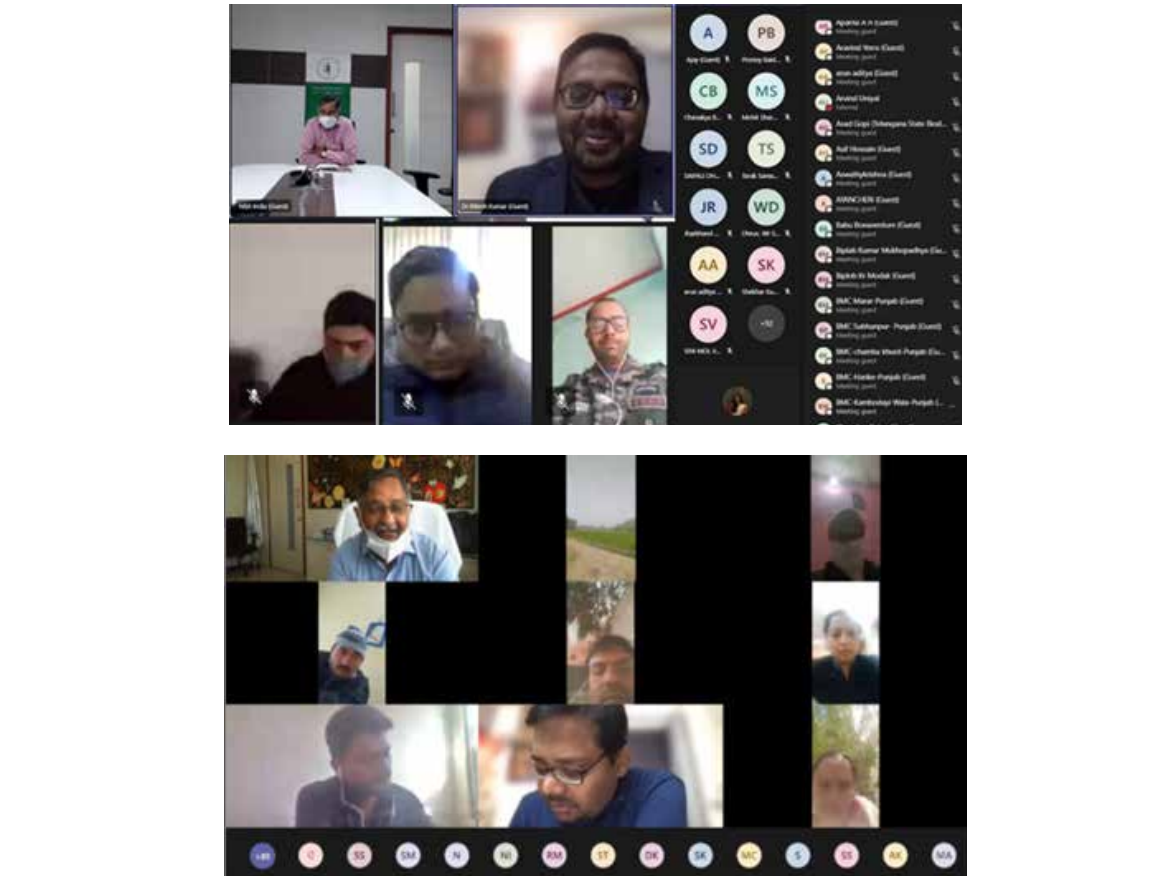


Image 1: Snapshots of the virtual training programme on Asian Waterbird Census

3. RESULTS

3.1 WETLANDS & WATERBIRDS REPORTED

The AWC was performed at least once in a total of 142 wetlands from 19 States and Union Territories viz., Arunachal Pradesh, Assam, Chhattisgarh, Delhi NCT, Goa, Gujarat, Haryana, Maharashtra, Meghalaya, Mizoram, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand and West Bengal. While mid-winter census had previously been conducted in many of the mentioned states, some like Meghalaya recorded their maiden AWC. Out of the 142 surveyed wetlands, many fall within the network of protected areas (PAs) and Important Bird and Biodiversity Areas (IBAs), while some are classified as Ramsar Sites including Nalsarovar Bird Sanctuary in Gujarat, Rudrasagar in Tripura, Sambhar Lake in Rajasthan and Bhindawas Wildlife Sanctuary in Haryana. The highest number of wetlands surveyed by BMC members and AWC volunteers during this joint effort were from Telangana accounting for 39 wetlands, while only a single wetland was surveyed each for states like Assam and Meghalaya. The highest number of waterbirds counts are reported from West Bengal (30, 235) while the lowest are for Meghalaya (57). State and union territory-wise number of wetlands and total waterbirds counts from the census are displayed in Figure 1 and Map 1.

A total of 179 waterbird and wetland-dependent species were recorded during the survey period. As per the IUCN red list database of threatened species, majority of the species reported in this AWC are classified as LC (Least Concern). However, several threatened species such as Baer's Pochard (Critically Endangered), Common Pochard and Lesser Adjutant (Vulnerable) and a few Near Threatened species were also reported from this AWC, thereby underlining the significance of this survey for wetlands and waterbirds conservation. Many of the reported species also classify as migratory waterbirds as per the BirdLife International database (Birdlife International, 2022). The total waterbirds count reported during this joint census is 1,22,588 (one lakh twenty two thousand five hundred and eighty eight).

Although a number of terrestrial birds having conservation significance were also recorded during the survey, yet their counts have not been used for analysis and report preparation as it's beyond AWC's scope and purpose.

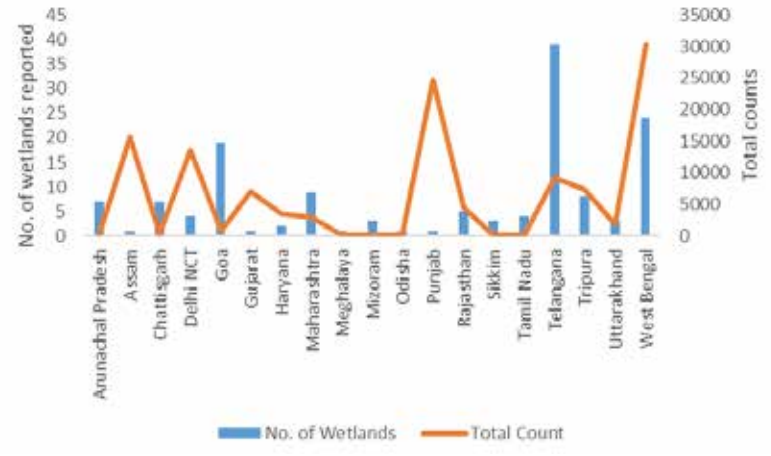
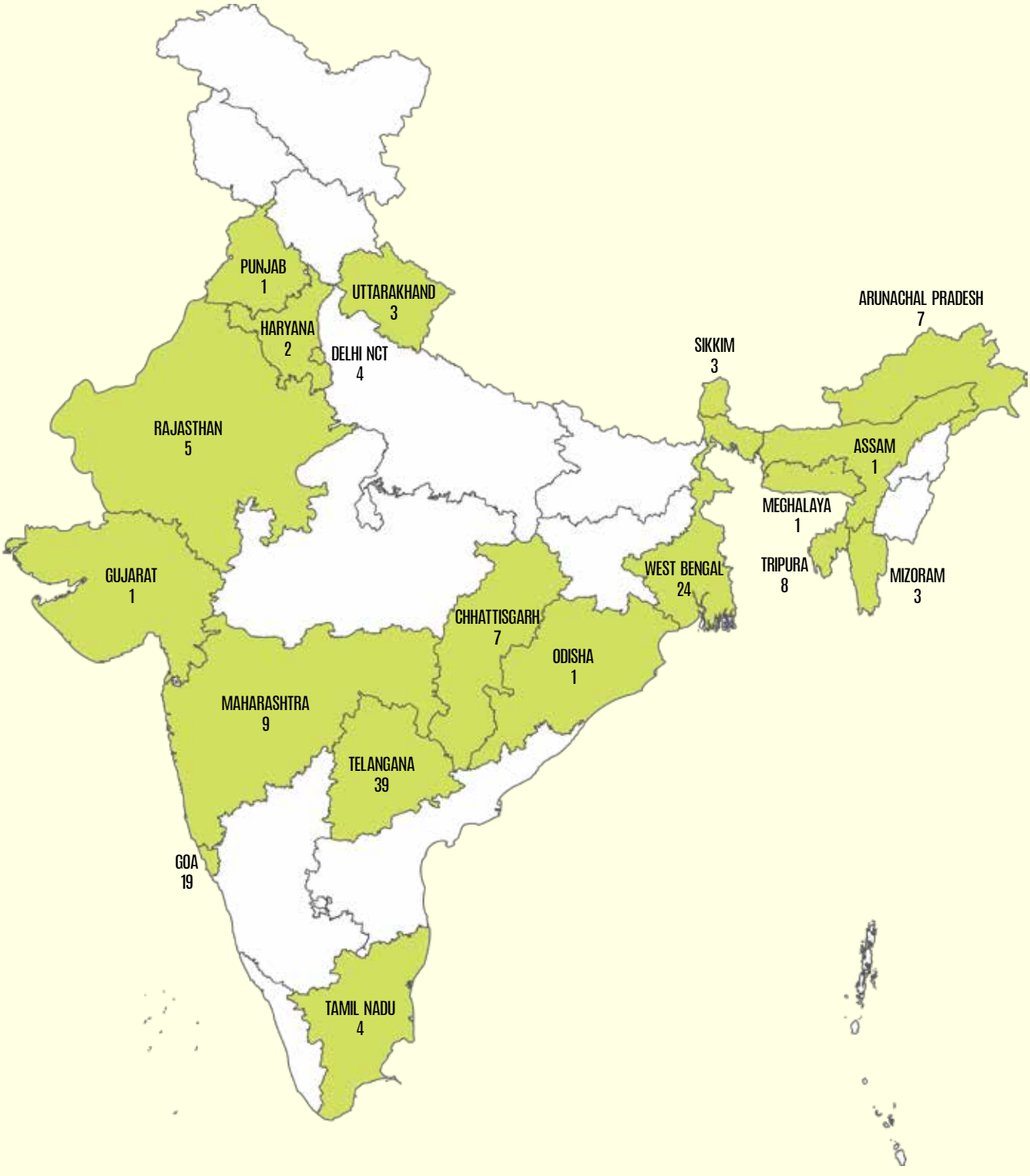


Figure 1: Number of wetlands and total waterbird counts reported



Map 1: State and Union Territory-wise number of wetlands reported during AWC 2022.

The abundance pattern of waterbird species from the census shows that the Lesser Whistling Duck was most abundant followed by the Northern Pintail, and Green-winged Teal. The list of the five most abundant waterbird species and the number of wetlands they have been found in, is displayed in Figure 2. While most reported waterbird species are classified as LC (Least Concern) some are also classified as VU (Vulnerable) and NT (Near Threatened). The IUCN Red List contains explicit criteria and categories to classify the conservation status of individual species on the basis of their probability of extinction and current conservation status. Each category of the list serves as an essential indicator of the health of the wetland's biodiversity. Far more than a list of species and their status, it is a powerful tool to inform and catalyse action for biodiversity conservation and policy change, critical to protecting the avifaunal assemblage in the wetland ecosystem. This report enlists several birds under critical categories with the primary objective of focusing on their immediate conservation actions.

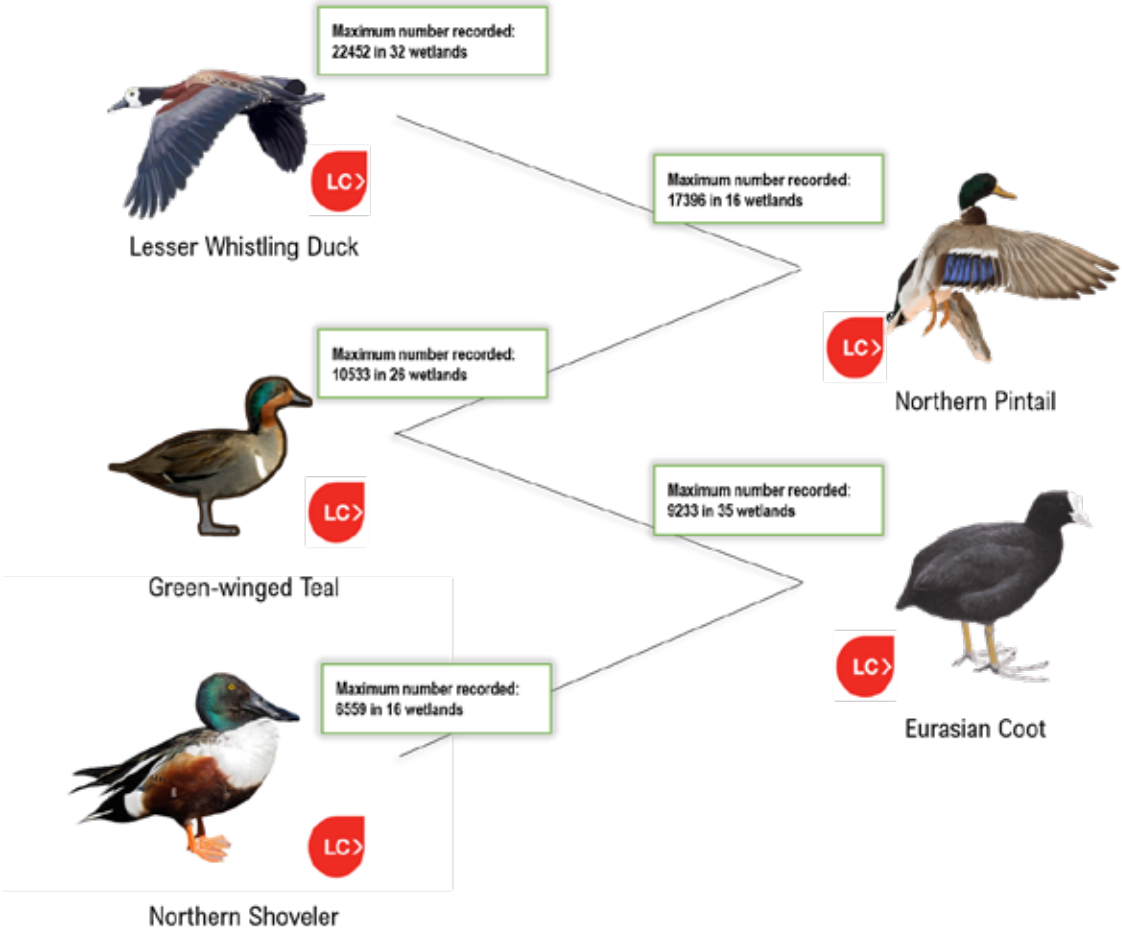


Figure 2: Five most-abundant waterbird species reported during the census (LC stands for Least Concern and indicates the IUCN Red List of Threatened Species category).

3.2 WETLANDS CONDITION

In addition to the waterbird counts, the AWC reports on waterbirds habitat features, threats and uses as a standard protocol. During AWC 2022, all major wetland types of India such as mountain lakes, large reservoirs, marshes, mangrove forests, mud flats, inter-tidal zones etc. from 19 States and Union Territories were surveyed. The assessment reported some of the most common yet pertinent threats to these waterbirds' habitats, including rampant pollution by disposal of solid and domestic wastes, agricultural run-off, encroachment over fringes due to urbanization and catchment level land-use changes. Few wetlands were reported to be affected by altered water regime (rise and fall in water levels), mass tourism, and proliferation of invasive species such as water hyacinth.

This first hand account on the situation of waterbird habitats highlights the pivotal role that AWC and it's network of enumerators play in mitigating the process of wetlands degradation through statutory means mentioned in Biological Diversity Act, 2002.

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3.3 CENSUS PARTICIPATION

Over 650 volunteers and BMC representatives from 119 organisations across 19 States and Union Territories viz. Arunachal Pradesh, Assam, Chhattisgarh, Delhi NCT, Goa, Gujarat, Haryana, Maharashtra, Meghalaya, Mizoram, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand and West Bengal participated in the census. The highest number of participants that took part in the census were from Telangana (300), followed by Goa (60) and Maharashtra (49). The respective SBBs of the concerned states were the primary reporting bodies besides other notable national-level organisations, universities, colleges, civil society groups, and community-based associations. The number of participating organisations and participants/attendees from each state is demonstrated in Figure 3.

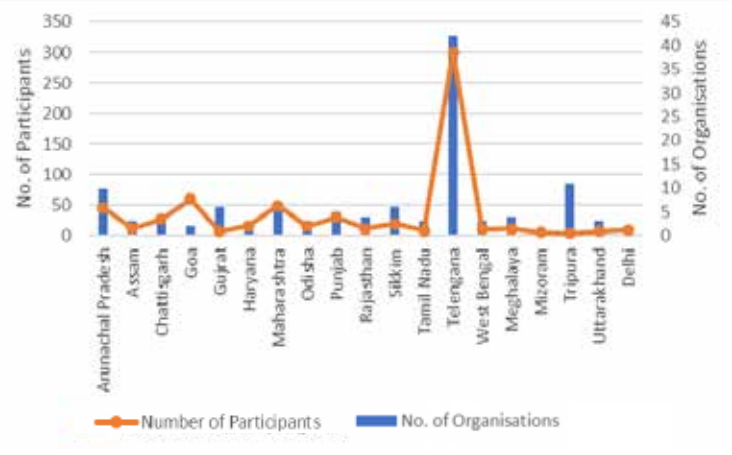

Figure 3: State-wise participation of volunteers and organisations in AWC-SBB joint exercise in January-February 2022

Image 2: Participants of the Asian Waterbird Census 2022 in Meghalaya

Image 3: Participants of the Asian Waterbird Census 2022 in Arunachal Pradesh

Image 4: Media coverage of the Asian Waterbird Census 2022 in Odisha (top) and Sikkim (bottom)

Image 5: Participants of the Asian Waterbird Census 2022 in Goa (top), Assam (middle) and Punjab (bottom)

4. OPPORTUNITIES AND CHALLENGES

The citizen-led AWC fosters community participation in monitoring and conservation of waterbirds and their habitats. It provides an opportunity to BMC members and other concerned citizens to strengthen People's Biodiversity Registers with systematic information on wetlands and waterbirds, and documenting traditional knowledge associated with their conservation and wise-use. The information generated through the AWC can be used to maintain healthy wetlands and promote their sustainable management through livelihood linkages. This joint effort between AWC and NBA network highlighted that such initiatives can help in raising awareness on waterbirds and their conservation issues, effecting behaviour change towards biodiversity conservation, upscaling community-based habitat conservation activities and preparing People's Biodiversity Registers. Albeit, the survey is primarily focused on assessing waterbird counts, the methodology involved often goes beyond the margins of conventional habitat monitoring, delving into the details of the significant aspects of wetland functioning.

In spite of multi-faceted opportunities and benefits associated with the annual census directed primarily at the conservation of wetlands and waterbird habitats, it encounters a number of challenges in its implementation. Primarily, inexperience in waterbirds identification, difference in bird nomenclature and counting, quality and uniformity in the data reported are some major issues that can be addressed through regular engagements in terms of capacity building programmes and field visits. Finally, the census coverage of major Indian states has not been reported indicating a significant void in data representation and major bias in competitive interpretation.

5. WAY FORWARD

The following measures can help in increasing participation of BMC members in AWC India:

1. Identifying AWC Champions in each BMC to undertake the census and update the People's Biodiversity Registers.
2. Training of AWC Champions and local community in waterbirds identification, wetlands conservation and wise-use.
3. Enhancing coordination and reporting mechanisms between BMC members and AWC network of coordinators and volunteers.
4. Devising participatory conservation action plans for priority wetlands and species.
5. Improving AWC coverage in the Himalayan and Northeast region of the country.
6. Institutionalising the AWC programme into BMC operations.
7. Improving technology interface in the census process and database management for fair access and use.

ANNEX
SUPPLEMENTARY DATASET

STATE	WETLAND	TOTAL COUNT
Arunachal Pradesh	Borguli	116
	Gochhon Hii	1
	Jeepghat	89
	Pilomukh	28
	Samten	1
	Swkhe Lake	20
	Wagrong	4
Assam	Pobitora Wildlife Sanctuary	15,553
Chhattisgarh	Bangoli Water Dam	32
	Belodi Tank	40
	Bhoramdeo Wildlife Sanctuary	4
	Gudhiyari	38
	Kopra Tank	123
	Wetland X	41
	Wetland Y	66
Delhi NCT	Delhi Zoo	1,279
	Najafgarh Jheel	10,239
	Sanjay Lake	134
	Yamuna River	2,005
Goa	Agacaim Tidal Mudflats	11
	Batim Tank	138
	Canacona Wetlands	60
	Carambolim	11
	Chapoli Reservoir	52
	Chapora Estuary	63
	Curtorim Church Lake	35
	Dhado Wetland	36
	Divar Island	14
	Durga Lake	25
	Maimollem	39
	Maina Wetland	19
	Morjim Beach	45

	Navelim Wetland	111
	Raia Wetland	11
	Ribandar Causeway	34
	St. Cruz Wetland	22
	Velim Tank	67
	Verna Ambulor Lake	39
Gujarat	Nalsarovar Bird Sanctuary	7,099
Haryana	Bhindawas Lake Bird Sanctuary	1,277
	Mandothi Wetland	2,202
Maharashtra	Aarmori Tank	514
	Allapalli	48
	Cha Prala Tank	122
	Gadchiroli	485
	Gorewada Wetland	508
	Kirkasal Tank	603
	Lonar Wetland	139
	Sironcha	251
	Sonwad	230
Meghalaya	Umiam Lake	107
Mizoram	Pala Wetland	90
	Serlui B Reservoir	32
Odisha	Sisupathar Dam & Satkosia Wildlife Sanctuary	164
Punjab	Keshopur- Miani Community Reserve	24,700
Rajasthan	Bharni Wetland	1,691
	Chavandia Pond	912
	Dhand Wetland	1,518
	Sambhar Lake	114
	Tandi Shoanpura	267
Sikkim	Khecheopalri Lake	51
	Rangit River (Rangit Valley)	30

	Teesta River (Golitaar, Singtam)	30
Tamil Nadu	Aamoor Lake	57
	Kattoor Lake	1
	Manampathy Lake	25
	Sirudavoor Lake	63
Telangana	Ankusapoor Lake	92
	Adda Guduru Cheruvu	80
	Amarachintha Peddacheruvu	435
	Ameenpur Lake	270
	Annasagaram Lake	200
	Ashok Nagar Cheruvu	550
	Ashok Sagar	120
	Bimunipadam Cheruvu	270
	Cheruvu Madaram Lake	200
	Enugal Lake	156
	Gundrapelly Cheruvu	823
	Hussain Sagar Lake & Peeram Cheruvu	111
	Ibrahimnagar Pedda Cheruvu	235
	Kalabgur Peddacheruvu & Manjeera Dam	70
	Mankapoor Lake	1,270
	Meerpet Cheruvu	98
	Mukhra Cheruvu	400
	Muthnoor Talab & Gurudev Talab	66
	Neknampur Lake	127
	Nizam Sagar Lake	350
	Paleru Reservior	500
	Panagal Reserviour	229
	Parada Project	515
	Pasmamula Lake	450
	Peddareddypet Lake	165
	Ramunipatla Cheruvu	55
	Regulapally Vura Cheruvu	463
	Rudrur Lake	425
	Singoor Dam	309
	Somvari Kunta	8
	Tirumalagiri Lake	150
	Venkatapoor Lake	68

Tripura	College Tilla Lakes	1,240
	Gumti Reservoir Wildlife Sanctuary	832
	Jirania NIT College	1,000
	Rudrasagar	973
	Satar Mias Haur	56
	Sipahijala Wildlife Sanctuary	388
	Sukh Sagar Wetland	393
	Trishna Lake Sanctuary	2,442
Uttarakhand	Asan Conservation Reserve	1,654
	Bhogpur	111
	Jhilmil Jheel Conservation Reserve	29
West Bengal	Adra Saheb Bandh	1,717
	Ahiran	1,269
	Ballvapur Wildlife Sanctuary, Bolpur	3,715
	Baruipur Tangtala	871
	Basatpur On Bhagirathi River	488
	Char Balidanga On Bhagirathi River	280
	Char Torsa Near Cooch Behar Town	13
	Falimari Beel	341
	Futiyari Dam	103
	Golamara Dam	93
	Gopalpur	55
	Gorumara Rhino Camp, River Jaldhaka And River Diana.	4,172
	Jhilli Pakhiraloy	3,217
	Kankana Baor	1,647
	Lipania Dam	700
	Lohasol Dam	69
	Machranga Island, Kumirmari	684
	Majra Dam	246
	Nibaran Sayar (Saheb Bandh)	67
	Panishala Beel	673
	Patloi Dam	2,329
	Ranjandih Jogmaya Sarobor	7,024
	Tara Dam	440
	Teledih	22

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