

(by e-mail)

F.No. J-22012/36/2020-CS(W)
Government of India
Ministry of Environment, Forest & Climate Change
(Wetlands Division)

Indira Paryavaran
Bhawan,
Jor Bagh, Aliganj
New Delhi - 110003
Date: 15.11.2021

To

The Registrar
Hon'ble National Green Tribunal (NGT)
Faridkot House,
Copernicus Marg,
New Delhi - 110 001
Email: judicial-ngt@gov.in

Sub: Report submitted in compliance to Hon'ble National Green Tribunal order dated 22.07.2021 in Original Application No. 351/2019 in the matter of Raja Muzaffar Bhat Vs State of Jammu & Kashmir & Ors-Regarding.

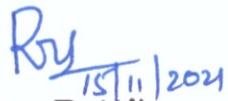
Sir,

This has reference to the Hon'ble NGT order dated 22.07.2021 in the matter of Raja Muzaffar Bhat Vs State of Jammu & Kashmir & Ors. in Original Application No. 351 of 2019.

In compliance to the above mentioned order, the status report in respect of significant wetlands in the country' as received inputs from States/UTs is enclosed herewith for perusal of Hon'ble National Green Tribunal (NGT).

This issues with the approval of competent authority.

Yours faithfully,


(Rajasekhar Ratti)
Scientist D

**REPORT IN COMPLIANCE TO HON'BLE NGT ORDER DATED
22.07.2021 IN O.A. NO. 351/2019 IN THE MATTER OF RAJA
MUZAFFAR BHAT VS. STATE OF J&K & ORS**

1. Wetland (Conservation and Management) Rules 2017 mandate the State Wetland Authorities inventorise and notify wetlands. The Ministry advises and facilitates this process by providing services relating to Capacity Building, engagement of knowledge partners, rolling out of wetland portal etc.
2. MoEFCC requested the Space Applications Centre (SAC) to provide the State wise inventory of the 2,01,503 (>2.25 ha) wetlands identified under the National Wetlands Inventory and Assessment exercise. The analysis provided by SAC has been uploaded on the website of the Ministry in March, 2017 itself. Further, the shape files/vector data of the wetlands identified in the inventory, as provided by SAC has been shared with the States/UTs which requested for the same.
3. In the context of Hon'ble NGT order dt 22nd July 2021, the analysis of wetlands covered by different statutes has been undertaken. As per the Rule-3 of the Wetland Rules, 2017, wetlands which are already protected under some other Acts like the Indian Forest Act 1927, Wild Life (Protection) Act 1972, Forest (Conservation) Act 1980, the State Forest Acts and Coastal Regulation Zone Notification, 2011 etc., need not be notified under the Wetland Rules as they are already protected under these other Acts. The broad details regarding the protection status of the 2.01 lakh wetlands as asked for by Hon'ble NGT is as follows:

S.No	Type of wetlands	Number	Area
	Wetlands >2.25 ha	2,01,503	14705015 ha
1	Wetlands protected under the Forest Act i.e., falling inside the Recorded Forest Area	27,905	2758580 ha

2	Wetlands protected under the Coastal Regulation Zone notification	13,033	4140116 ha
3	Tanks/Ponds -separate programs being run by other Ministries of GOI for their conservation and rejuvenation	1,22,370	1310443 ha
4	Man made wetlands protected by the Departments under which they were created	20,442	263389 ha
	Total wetlands with protection	1,83,750 (91%)	8472528 ha
	Balance	17,753	6232487 ha

4. It is also pertinent to bring to the kind notice of the Hon. Tribunal that many states already have certain Acts protecting the wetlands in their States like the Kerala Conservation of Paddy Land and Wetland Act, 2008, the Haryana Pond and Waste Water Management Authority (Amendment) Act, 2020, the Bombay Irrigation (Gujarat Amendment) Act in Gujarat etc.
5. The East Kolkata Wetlands (Conservation and Management) (Amendment) Act, 2017 is one example of an act for a specific wetland.
6. A **series of Virtual Conferences** were held for five groups of states and UTs between 13th to 17th September 2021. These meetings, chaired by the Additional Secretary, Ministry of Environment, Forest and Climate Change, have been held with the agenda to review the status of compliance and clarify any queries on implementation.
7. All Secretaries/Principal Secretaries (Environment) dealing with the subject matter of wetlands with representatives from State and UT Wetland Authorities as well as from the State Remote Sensing Agencies have attended the review meetings. The Office Memorandum for the same and the list of participants is at Annexures I & II respectively.

STEPS TAKEN BY THE MINISTRY FOR FACILITATING THE STATES FOR IMPLEMENTATION OF THE WETLAND RULES 2017 AND CONSERVATION OF WETLANDS

REGULATORY INITIATIVES-

8. The **Guidelines for implementing the Wetlands (Conservation and Management) Rules, 2017** (Annex-IV) were published in January 2020 to support the State Governments/UT Administrations in the implementation of the Rules by providing guidance on various aspects like identifying wetlands for notification under the Rules, delineating wetlands, wetland complexes and zones of influence, preparation of Brief Document, developing a list of activities to be regulated and permitted, constitution and operational matters of the Wetlands Authorities among other issues.
9. The Guidelines clarify the concepts to be taken into account while filling the brief documents, the format to be used and the step by step process. A format for draft notification of wetlands under the Rules and how to fill it is also a part of the Guidelines followed by a draft format for reporting status of notified wetlands. Issues like overlapping regulations and notifications in a wetland site and applicability of Rules are also explained. Since April 2020-21, only the plans submitted in accordance with the IMP format prescribed in these Guidelines are being considered for financial support under the scheme.

CAPACITY DEVELOPMENT

10. Continuous workshops have been organised by the Ministry for all the SWAs region wise to guide them on all aspects of wetland management including implementation of the wetland Rules, 2017.
11. To sensitise officers on the importance of wetlands and the technicalities of wetland conservation, it was decided to catch them young and a wetland module has now been introduced for the probationers in the **Indira Gandhi National Forest Academy (IGNFA)**.

WEB PORTAL

12. As required under the 2017 Rules, **a dedicated web portal for wetlands to host the digital inventory from the State and UT Wetland Authorities, has been prepared and was made public on 2nd October, 2021.** The portal *indianwetlands.in* is a publicly available information and knowledge platform to facilitate knowledge sharing, information dissemination, host capacity building material, and provide a single-point access data repository. It is a system for processing information and making it available to the stakeholders in an efficient and accessible manner. One of the primary features of the portal is the Management Information System (MIS) login for each and every state/UT wherein information pertaining to the wetlands in their administration needs to be uploaded. This information would be linked with the public front of the portal and will be available for the public with varying access rights. Login credentials to the MIS have been provided to the States and UTs which have provided their web portal nodal point information.
13. This technology driven platform has been created for Force multiplier impact. The platform would help in regular sharing of good work being done in different geographies and providing visibility to relevant stakeholders involved in wetland restoration. This way the local initiative in one wetland shall be visible to others for replication.

RAMSAR SITES – cover more than 10.83 lakh ha area

14. The **number of Ramsar sites in India have increased to 46 covering an area of 10,83,322 ha.** India has the largest number of Ramsar sites in South Asia. Further, about 10 more sites covering an area of about 6.87 lakh ha would soon be declared as Ramsar sites increasing this area covered to 17,71,134 ha. Therefore, about 12 % of the area of wetlands is notified under the Ramsar Convention.

FOCUSSED FOUR PRONGED APPROACH

15. One of the transformative ideas taken up by the MoEF&CC as part of the PM's 100 days program was to start work on the restoration and rejuvenation of at least 100 major wetlands across the country wherein over 130 wetlands were targeted using the 4 – pronged approach of preparing Brief Documents, preparing Ecosystem Health Cards, involving all stakeholders by instituting Wetland Mitras and formulating Integrated Management Plans.
16. For the first time, **Health Cards** (Annex – V) have been prepared for wetlands and targeted IMPs were prepared based on the health and specific threats facing the wetlands. The health cards were prepared based on the 500 more health cards have been prepared since then. The basic criteria checked for preparing the health cards is percentage of **Area** of wetland converted, the Hydrological regimes ie the Ratio of natural inflows choked and diverted to total number of natural **Inlets**, Ratio of natural outflows choked and diverted to total number of natural **Outlets**, percentage of **Water Quality** samples conforming to desired Biological Oxygen Demand / Dissolved Oxygen levels, Percentage wetland area covered by **Invasive Macrophytes**, Annual January **Water Bird Count** as a proportion to maximum count observed count in last 10 years and the status of Governance

KNOWLEDGE PARTNERS AND WETLAND RESEARCH INSTITUTE

17. Knowledge Partners have been identified to help the Ministry as well as the State Wetland Authorities in the preparation of Brief Documents and Health Cards. Each State has been allotted a knowledge partner to guide it in preparing the details for the notifications.
18. Wetlands International South Asia(WISA), Worldwide Fund for Nature(WWF), Chilika Development Authority(CDA), Gujarat Ecological Education and Research Foundation (GEER Foundation), Centre for Water Resources Development and Management, Cochin(CWRDM), Environmental planning and Coordination Organisation, Bhopal

(EPCO), Salim Ali Centre for Ornithology and Natural History, Coimbatore (SACON), Wildlife Institute of India, Dehradun(WII), Indian Institute of Technology, Roorkee are some of the organisations working as knowledge partners for the Ministry.

19. To help the Ministry in taking up research programs related to wetlands and help the State Wetland Authorities in the technical matters relating to wetlands, the **National Centre on Sustainable Coastal Management (NCSCM)**, Chennai has been asked to work as the wetland Research arm of the Ministry.

INCLUSIVE APPROACH TOWARDS ACHIEVING HIGHER OUTREACH WITH LIMITED BUDGET

20. While the Ministry has the National Program on Conservation of Aquatic Ecosystems, **the funds available under the same are just to the tune of about Rs. 50 crs which is not enough for the conservation of wetlands.** It is for this reason that the **Ministry has taken up an inclusive approach** wherein it has taken the support of various stakeholders like the knowledge partners, the members of the public in the form of wetland mitras, various corporates etc.
21. Special focus is given on building convergence of wetlands management with the ongoing sectoral developmental programmes. Comprehensive mapping of all schemes which include funds available from Jal Shakti Mantralaya, Namami Gange, MGNREGA, Smart Cities Programme etc which can contribute to conservation of a particular site is encouraged.

AMRIT MAHOTSAVA IN 75 NOS OF SIGNIFICANT WETLANDS

22. The Ministry recently celebrated the Iconic week as part of the Bharat ka Amrut Mahotsava celebrations where activities were held in 75 prominent wetlands across the country.

- i. **Threats and Values signages** (Annex - VI) were got installed at 75 significant wetlands across the country. Boards were installed for local awareness and remedial action. The exercise has been undertaken to create awareness and flag wetland-wise threats and values to the local community and thereby create interest in the locals for the need for restoration of wetlands. The list of wetlands where the signages were to be installed, along with the actual design and content of the values and threats to each of these wetlands as well as the funding for it was all organised by the Ministry.
- ii. **More than 10,000 nos of wetland mitras registered (Annex- VII)** during the week. The State and UTs were encouraged to register wetland *mitras* during the week and beyond. A logo for the wetland *mitras* was designed by the Ministry and during the iconic week, the registered *mitras* were oriented about their roles and responsibilities. In many wetlands, *mitras* also did *shramdaan* to help clean up the wetlands and surrounding areas. The exercise has been done to have an inclusive approach where-in all the stakeholders take part in the process of conservation of wetlands
- iii. **Wetland Ambassadors identified** - Wetland Ambassador is an iconic species, habitat, or cultural heritage that demonstrates the uniqueness of the particular wetland. In consultation with the wetland *mitras* network, a 'Wetland Ambassador' was identified, maintaining which would be one of the core objectives of the wetland management. A series of twitter posts on the wetland ambassador selection was also carried out the official handle of the Ministry, giving the people a chance to vote for the suitable ambassador.
- iv. **Wetland pledge** in English and Hindi (Annex - VIII) was drafted centrally and shared with all the states and UTs. About **10,000 people/wetland mitras took this pledge at various wetlands of the country during the week** and some states and UTs also translated the pledge into regional languages. This was done to instil a psychological & moral commitment for restoration of wetlands in people.

The Hon'ble Minister of Environment & Forest Shri Bhupendar Yadav led the pledge at Wular. In addition, more than **12,500** nos. of people (a mix of locals, educators, students, administrators, foresters, NGOs etc.) participated in more than **250** nos. of physical and/or virtual activities

INTERNATIONAL RECOGNITION

23. The efforts taken by the GOI in wetland conservation has been recognised by the Ramsar Sectt and India was invited in the recent COP 26 held in Glasgow to talk about its wetland conservation program to a global audience.

STATUS OF NOTIFICATION OF WETLANDS AND OTHER STEPS

24. The details of the compliance of rules by the States is at Annex III. A gist of the important works carried out by the States/UTs is as under –

WETLANDS NOTIFIED

- **IN REVENUE RECORDS**

Uttar Pradesh has added 1,33,484 wetlands in their Revenue Records which gives protection to these wetlands from being used for any other purpose.

- **IN IRRIGATION RECORDS**

All wetlands of Gujarat are notified under the Bombay Irrigation (Gujarat Amendment) Act

- **UNDER WETLAND RULES 2017**

Eight wetlands have currently been notified under the Wetland Rules, 2017. These are 6nos from Goa, 1 nos from UP and 1 nos from Chandigarh. Draft notification for 5 nos of more wetlands has been put in the public domain in Goa. UP has also identified 23,890 wetlands for notification under the Wetland (Conservation and Management) Rules 2017 and has already prepared brief documents for 118 nos of wetlands.

PREPARATION OF BRIEF DOCUMENTS

- a) Seventeen states have either prepared or initiated the process of brief document preparation for a total of about 834 wetlands.
- b) Delhi has mapped 1011 nos of waterbodies and has already prepared brief documents for 370 nos of wetlands. After the same are vetted by the technical committee of the State wetland authority, the notification process would start by the end of the year.
- c) Tamil Nadu Wetland Mission announced by CM in assembly and budget session, focusing on identification, mapping, notification and restoration. The State has prepared brief documents for 141 wetlands and has identified wetlands for notification.
- d) Bihar and Uttar Pradesh are prioritising wetlands in the Ganga floodplains under the National Mission on Clean Ganga (NMCG) and are employing the brief document format as prescribed by NPCA for their conservation. 279 nos. of wetlands in the Ganga Basin in UP (10 kms on both sides of the River Ganges) are being conserved using the four pronged method employed by the Ministry

OTHER INITIATIVES

- i. Maharashtra has prepared a Mobile app to record the information with respect to the Brief Document of Wetlands. The respective District Collectors have filled information of Brief Document in the Mobile app after site visit / ground truthing.
- ii. Efforts are on the reconcile the wetland inventory to identify those wetlands which may not already be covered under any other laws.

ANNEXURES:

Annexure - 1	Office Memorandum for VC
Annexure – II	List participating States and UTs and their Inputs
Annexure – III	Compliance status of States and UTs
Annexure – IV	Guidelines to Wetlands (Conservation and Management) Rules, 2017
Annexure – V	Sample Proforma- Health Card
Annexure – VI	Signage for Value and Threats
Annexure – VII	Wetland Mitra Registration Form
Annexure – VIII	Wetland Mitra Pledge

(by e-mail)

F. No. J-22012/36/2020-CS(W)
 Government of India
 Ministry of Environment, Forest & Climate Change
 (Wetlands Division)

Indira Paryavaran Bhawan
 Jor Bagh, Aliganj
 New Delhi -110 003
 Date: 08.09.2021

Office Memorandum

Sub.: Compliance of Hon'ble NGT Order dated 22.07.2021 in O.A. No. 351/2019 in the matter of Raja Muzaffar Bhat Vs. State of J&K & Ors- Meeting through VC -reg.

Hon'ble NGT vide the subject order had issued directions to all the District Magistrates, Chief Secretaries of States/UTs and this Ministry w.r.t compliance to Wetlands (conservation and Management) Rules, 2017 (**copy enclosed**).

2. The same was communicated to all the Wetlands Authorities of States and Union Territories vide email dated 03.08.2021. Further, Secretary, MoEF&CC had also written a D.O. letter dated 10.08.2021 to the Chief Secretaries/Administrators of all the States/UTs in the matter (**copy enclosed**).
3. In order to review the status of compliance and clarify any queries in the matter, Additional Secretary (Wetlands), MoEF&CC, would be chairing a meeting through VC from 13-17th September 2021. All Secretaries/ Principal Secretaries (Environment) who are dealing with the subject matter of wetlands along with the Member Secretaries of the State Wetland Authorities may attend the meeting as per the **enclosed schedule**. If possible, a representative of the State Remote Sensing Agency may also be asked to join the meeting.
4. It is also requested to provide information as per the **enclosed proforma** by e-mail in word document prior to the video conferencing. In addition to the said information, any other steps being taken by the States/UTs for conservation and management of wetlands may also be provided.


 (Rajasekhar Ratti)
Scientist 'D'
 Tel. 011-24695232
 Email: rs.ratti@gov.in

To

All Additional Chief Secretaries/Principal Secretaries of State Governments/UT Administrations (as per list attached)

Copy to:

All the Member Secretaries of State/UT Wetland Authorities (as per list attached)

Proforma: Details to be provided prior to attending Video Conferencing

S.No.	Name of State /UT	Wetlands details: as per Inventory of Space Application Center	Significant Wetlands details: as per State Govt./UT Administration	Whether the wetland protected by any other act? If so details	Status of Brief documents	Implementation of Wetlands (C&M) Rules 2017: Notification, IMP, Wetlands Mitras, Health Cards etc.

Schedule of Meetings through Video Conferencing:

S.No.	Group	State/UT	Meeting date and time
1	Group No.I	Delhi	13th September 2021 Time: 11:00 am
2		Haryana	
3		Punjab	
4		Himachal Pradesh	
5		Rajasthan	
6	Group No.II	Goa	13th September 2021 Time: 3:00 pm
7		Andhra Pradesh	
8		Tamil Nadu	
9		Karnataka	
10		Puducherry	
11		Arunachal Pradesh	
12		Kerala	
13		Meghalaya	
14	Group No.III	West Bengal	14th September 2021 Time: 4:30 pm
15		Assam	
16		Bihar	
17		Sikkim	
18		Chhattisgarh	
19		Andaman & Nicobar Islands	
20		Daman & Diu	
21		Lakshadweep	
22		Group No.IV	
23	Odisha		
24	Gujarat		
25	Tripura		
26	Telangana		
27	Uttarakhand		
28	Mizoram		
29	Group No.V	Madhya Pradesh	17th September 2021 Time: 3:30 pm
30		Manipur	
31		Maharashtra	
32		Dadra Nagar Haveli	
34		Jharkhand	
35		Ladakh	
36		Jammu & Kashmir	
37		Chandigarh	

Item No. 02

(Court No. 1)

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

(By Video Conferencing)

Original Application No. 351/2019

(With reports dated 19.01.2021 and 11.06.2021)

Raja Muzaffar Bhat

Applicant

Versus

State of Jammu and Kashmir & Ors.

Respondent(s)

Date of hearing: 22.07.2021

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE M. SATHYANARAYANAN, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

Applicant: Mr. Saurabh Sharma, Advocate

Respondent(s): Mr. Balendu Shekhar, Advocate for MoEF & CC
Mr. Pradeep Misra, Advocate and
Mr. Daleep Dhyani, Advocate for UP PCB

ORDER

1. The issue for consideration is prevention of unscientific dumping of waste and encroachment of Hokersar Wetland, Wular Lake and Kreentchoo-Chandhara Wetland in the Union Territory of Jammu & Kashmir. A factual and action taken report was sought from a joint Committee of Jammu & Kashmir Pollution Control Board ('State PCB'), Department of Wildlife Protection and Deputy Commissioners of Budgam, Srinagar and Bandipora.

2. The matter has been dealt with by the Hon'ble Supreme Court inter alia by order dated 3.4.2017 in *M.K. Balakrishnan & Ors. v. Union of India & Ors.*¹ as follows:

¹(2017) 7 SCC 805

“17. Be that as it may, for the reasons given below, we are compelled to direct that **the Wetlands (Conservation and Management) Rules, 2016 should be notified on or before 30-6-2017**. We are compelled to issue this direction since the matter has been pending with the Union of India for the last almost a year and there has to be some finality to the publication of the Rules. The comments/suggestions have been given by all stakeholders such as the State Governments including its organisations, individuals and civil society organisations. That being the position, there is obviously a great deal of interest in the Rules being formulated and notified. Under these circumstances, there is no justification why the Union of India should not have taken prompt action and constituted the Committee much earlier for the purposes of finalising the Rules. Finally, **the conservation of wetlands is of immense ecological importance**.

18. The learned counsel for the Union of India says that all efforts will be made to ensure compliance with this direction and to ensure that the Rules are notified on or before 30-6-2017. We are sure that both the Committee as well as the Union of India will take into consideration the comments and suggestions offered by the State Governments and its organisations, individuals and civil society organisations before taking a final decision.

19. With regard to the Central Wetlands Regulatory Authority, we are told that its term is expiring on 14-2-2017. We have been informed by the learned counsel for the Union of India that the Central Wetlands Regulatory Authority will be notified on 13-2-2017. The Union of India is bound by the statement made by the learned counsel for the Union of India, which statement has been made on instructions received by him from an officer of the Ministry of Environment, Forest and Climate Change.

20. In our order dated 31-1-2017 [Set out in paras 11 to 13, above.], we had required the Union of India to tell us the steps taken to preserve the 26 wetlands covered by Ramsar Convention, 1971. **The affidavit that has now been filed by the Union of India merely gives the disbursal of amount made by the Union of India from time to time. What specific steps have been taken including how the funds made available have been utilised and what is the impact of those steps have not been adverted to. We must have specific details. We direct the Union of India to file an affidavit within four weeks positively giving required specific details.**

21. The learned counsel for the petitioners has drawn our attention to an additional affidavit filed by the Union of India on or about 9-9-2014. The additional affidavit contains an information brochure “National Wetland Inventory & Assessment”. **This brochure indicates on p. 11 thereof that 2,01,503 wetlands have been mapped at 1:50,000 scale. All these wetlands have an area of more than 2.25 ha. As a first step, the “brief documents” with regard to these 2,01,503 wetlands should be obtained by the Union of India from the respective State Governments in terms of Rule 6 of the Wetlands (Conservation and Management) Rules, 2010. We are told that obtaining these “brief**

documents” may take some time. We are inclined to grant adequate time for this purpose. The Union of India should follow this up with the State Governments and inform us of the time-frame on the next date of hearing.

22. *The apprehension expressed by the learned counsel for the petitioners is that with the passage of time there is a possibility that some of the wetlands may disappear. On a reading of the information brochure, this apprehension is not unfounded.*

23. *Accordingly, we direct the application of **the principles of Rule 4 of the Wetlands (Conservation and Management) Rules, 2010 to these 2,01,503 wetlands that have been mapped by the Union of India. The Union of India will identify and inventorise all these 2,01,503 wetlands with the assistance of the State Governments and will also communicate our order to the State Governments which will also bind the State Governments to the effect that these identified 2,01,503 wetlands are subject to the principles of Rule 4 of the Wetlands (Conservation and Management) Rules, 2010, that is to say:***

“4. (1)(i) *reclamation of wetlands;*

(ii) *setting up of new industries and expansion of existing industries;*

(iii) *manufacture or handling or storage or disposal of hazardous substances covered under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 notified vide S.O. No. 966(E), dated 27-11-1989 or the Rules for Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms /Genetically Engineered Organisms or Cells notified vide GSR No. 1037(E), dated 5-12-1989 or the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 notified vide S.O. No. 2265(E), dated 24-9-2008;*

(iv) *solid waste dumping:*

Provided that the existing practices, if any, existed before the commencement of these Rules shall be phased out within a period not exceeding six months from the date of commencement of these Rules;

(v) *discharge of untreated wastes and effluents from industries, cities or towns and other human settlements:*

Provided that the practices, if any, existed before the commencement of these Rules shall be phased out within a period not exceeding one year from the date of commencement of these Rules;

(vi) *any construction of a permanent nature except for boat jetties within fifty metres from the mean high flood level observed in the past ten years calculated from the date of commencement of these Rules;*

(vii) any other activity likely to have an adverse impact on the ecosystem of the wetland to be specified in writing by the Authority constituted in accordance with these Rules.”

24. *The learned counsel for the Union of India has shown us a chart of proposals/brief documents that have already been received by the Union of India under Rule 6 of the Wetlands (Conservation and Management) Rules, 2010. The total number of wetlands covered in this document are 1683. Many of these proposals/brief documents received by the Union of India contain deficiencies which have already been identified in the document handed over to us. **The Central Wetland Regulatory Authority will take up the rectification of deficiencies with the State Governments with promptitude and ensure that all these deficiencies are removed and complete proposals/brief documents are furnished within the next about one month so that the Central Wetlands Regulatory Authority is in a position to take a final decision with regard to these 1683 wetlands and their notification, if required, on or before 31-3-2017.”***

3. Further, vide order dated 04.10.2017, the Hon'ble Supreme Court in *M.K. Balakrishnan, supra* observed:

“We have heard learned counsel for the petitioner and the learned Additional Solicitor General.

We have been informed that the Wetland Rules have since been notified and they are now called the Wetlands (Conservation and Management) Rules, 2017. These Rules have come into force on the date of publication in the official gazette, that is, 26th September, 2017.

Learned counsel for the parties say that they have very serious objections to some of these Rules. It is submitted that it appears that the Central Government has abdicated its responsibility under the Environment (Protection) Act, 1986 and instead of delegating its powers, it has abdicated its power in favour of the State Governments. We have also been informed that the Central Wetlands Regulatory Authority has since been disbanded and the State Wetlands Authority and the National Wetlands Committee have been constituted under Rules 5 and 6 of the new Rules.

With regard to the expenditure on Ramsar Convention sites, we have been informed by learned Additional Solicitor General that the audited accounts have so far been received from the States of West Bengal, Madhya Pradesh and Odisha. Audited accounts have not been received from any other State with regard to the Ramsar Convention sites.

*We have also been informed that apart from Ramsar Convention sites, **further funds have been given to the States and the Union Territories for conservation of wetlands. No audited accounts have been received in regard to these funds disbursed as well as their expenditure by the State Governments and the Union Territories.***

With regard to the brief documents required to be furnished under the old Rules, it appears that only ten States and one Union Territory have responded. It appears that there is now no necessity of brief documents under the new Rules. We make it clear that this does not mean that the earlier brief documents already submitted can be discarded completely. The contents of these brief documents will still be followed as far as the implementation of the Wetlands (Conservation and Management) Rules, 2017 is concerned.

Finally, with regard to the satellite images, we are told that the Space Application Centre would require between 12 to 18 months to make an inventory of 1,75,740 wetlands as they exist today. We make no comment on this but request learned Additional Solicitor General to re-check with the Space Application Centre since the wetlands are diminishing in our country at a very fast rate. It is very likely that many more will disappear by the time the task is completed by the Space Application Centre.

*We make it clear and reiterate that in terms of our order dated 8th February, 2017, **2,01,503 wetlands that have been mapped by the Union of India should continue to remain protected on the same principles as were formulated in Rule 4 of the Wetlands (Conservation and Management) Rules, 2010.***

Learned counsel for the parties may file their objections to the new Rules within a period of two weeks. We direct that only one set of objections should be filed and both learned counsel should sit together and arrive at some consensus on the objections.

We further direct the State Governments that have not complied with earlier orders or directions given by the Central Government should do so within a period of four weeks from today failing which we will be constrained to require the presence of the Chief Secretaries of the State Governments in addition to imposition of heavy costs keeping in mind the necessity of conserving whatever water bodies are left in the country.

List the matter for further directions and for hearing on the objections to the new Rules on 9th November, 2017.

We would require the presence of a senior officer of the Ministry of Environment, Forests and Climate Change, Government of India to be present in Court on the next date of hearing so that any questions that may be raised can be answered immediately. Needless to say, the senior officer who should be present in Court should be well-versed with the subject. The files on the basis of which the new Rules have been framed may also be kept ready for perusal when the matter is taken up.

4. Thus, the Hon'ble Supreme Court, apart from directing the High Courts where Ramsar Convention sites are located to monitor the management of such sites, also directed application of Rule 4 of the

Wetland (Conservation and Management) Rules, 2010 to 2,01,503 wetlands already mapped by the Central Government. It was further directed that the Central Government will identify and inventorise the said wetlands with the assistance of the State Governments and communicate the order of the Hon'ble Supreme Court to the State Governments who will be bound by the said order. Rule 4 in question provides for protection of wetlands against any incompatible activity, including encroachment and dumping of waste which is to be ensured by the State Wetland Authorities.

5. The matter was earlier considered by this Tribunal on 16.12.2019 in the light of the report dated 09.12.2019 filed by the joint Committee of authorities of J&K in respect of certain wetlands in J&K. The report mentioned the steps taken to prevent dumping of solid waste and to remove the encroachments, apart from other steps for conservation of the wetlands. It was stated that the demarcation of the boundary of the wetlands had been done and map of the demarcated line prepared. The Tribunal also considered the Minutes of the Meeting held on 30.11.2019 wherein further decisions were taken for remedial action, to prevent menace to the environment. The Tribunal directed further steps in the matter and sought an action taken report. The Tribunal thereafter considered the matter on 27.08.2020 in the light of further the report of the joint Committee of officers of J&K dated 18.08.2020 which mentioned the measures taken in respect of Hokersar Wetland Conservation Reserve, Wullar Lake and Kreentchoo-Chandhara Wetland. The applicant gave certain suggestions as noted in the last order. The Tribunal directed the joint Committee to take further action.

6. Apart from the above, the Tribunal also directed the National Wetland Committee to compile information about the status of

compliance in respect of all significant wetlands in the country in the light of directions of the Hon'ble Supreme Court in *M.K. Balakrishnan, supra*. The operative part of the order is reproduced below:

"7. Conservation of wetlands in general and Ramsar sites in particular is a significant aspect of protection of environment. To give effect to the Sustainable Development and Precautionary Principles, which have been held to be part of right to life and are to be statutorily enforced by this Tribunal under Section 20 of the National Green Tribunal Act, 2010, effective action plan and its execution is imperative.

*8. One of the serious challenges is solid and liquid waste management, apart from encroachments. There are binding directions of the Hon'ble Supreme Court in *Almitra H. Patel Vs. Union of India & Ors*². and *Paryavaran Suraksha vs. Union of India*³ on the subject of scientific management of solid waste and sewage/effluents in accordance with the statutory provisions of the Water (Prevention and Control of Pollution) Act, 1974, ('Water Act') Air (Prevention and Control of Pollution) Act, 1981, ('Air Act) and waste management rules framed under the Environment (Protection) Act, 1986 ('EP Act'). There is large scale non-compliance of the said statutory provisions which has led this Tribunal to consider the issue of river pollution in OA No. 673/2018, News item published in "The Hindu" authored by Shri Jacob Koshy Titled "More river stretches are now critically polluted: CPCB" in view of acknowledged data of 351 polluted river stretches in the country. Apart from the said issue, large scale failure has been found in the matter of solid waste management as repeatedly recorded in O.A. No. 606/2018. The Chief Secretaries of all the States/UTs were required to remain present in person before this Tribunal for interaction and further planning. In O.A. No. 325/2015, Lt. Col. Sarvadaman Singh Oberoi v. UOI & Ors., the Tribunal has considered the issue of restoration of water bodies. In Original Application No. 593/2017, Paryavaran Suraksha Samiti & Anr. v. UOI & Ors., the issue of untreated sewage or effluent being discharged in water bodies have been taken up for consideration. There are several other matters dealing with such issues, including coastal pollution, pollution of industrial clusters etc.*

*9. There is discussion in the media about inadequacy of monitoring of action for restoration of lakes, wetlands and ponds which is certainly necessary for strengthening the rule of law and protection of public health and environment⁴. Several directions have been issued by the Hon'ble Supreme Court in *M.K. Balakrishnan and Ors. v. UOI & Ors.*⁵*

² (2000) 2 SCC 679

³ (2017) 5 SCC 326

⁴ <https://gradeup.co/lakes-in-india-i-4b99dc80-f6ce-11e7-9d78-07a242af4480>

<http://www.saconenvis.nic.in/publication/Lake%20Protection%20and%20Managemen%20of%20Urban%20Lakes%20in%20India.pdf>

http://www.worldlakes.org/uploads/Management_of_lakes_in_India_10Mar04.pdf

⁵ (2017) 7 SCC 805

10. *Wetland (Conservation and Management) Rules, 2017 contain elaborate provisions for protection of Wetlands and National and State Wetland Authorities have been set up. However, the fact remain that the wetlands are facing serious challenge of conservation as shown by the present case and other cases which are the Tribunal dealing with from time to time. Secretary, MoEF&CC heads the National Wetlands Committee with 18 other Members for integrated management of wetlands, monitoring implementation of the Rules and other allied functions. The Committee is statutorily required to meet once in six months. The State Wetlands Authorities are headed by Environment Ministers of the States with Chief Secretaries as Vice Chairperson and 16 other members. Likewise, the Union Territories Wetland Authorities are headed by the Chief Secretaries. They are required to statutorily plan and oversee necessary action for management of the Wetlands. In spite of high level authorities in place, there are widespread grievances of failure to manage some of the important wetlands, as in the present case and another matter dealt with today relating to Sambhar Lake in Jaipur.*

11. *Accordingly, the report received from the Joint Committee, showing the extent of challenges faced by the Wetlands in question, may also be forwarded to the Secretary, MoEF&CC and the CPCB as a feedback for further planning and action on the pattern of the problems depicted in the report.*

12. *We also direct that the National Wetlands Committee may compile data of status of compliance of environmental norms in respect of all significant wetlands in the country to ensure remedial action. The State PCBs/PCCs and State/UT Wetland Authorities in India may give the status of management of wetlands in their respective States to the Secretary, MoEF&CC within three months. On that basis a joint Committee of the Secretary and Chairman CPCB may give a consolidated report to this Tribunal before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.”*

7. Accordingly, we have two reports for consideration – Report of the J&K PCB dated 19.01.2021 and report filed by the Scientist -D, MoEF&CC dated 11.06.2021. The report of J&K PCB gives following information in a tabular form:-

“PROFORMA

S.No	Wetland name	District	Co-ordinates	Criteria for Significance (Ramsar Site/Within PA/Other-explain)	Applicable Environmental Laws (WPA/Wetland Rules/CRZ/Others)	Status of Compliance of all applicable environmental laws (Ongoing Cases in HC/SC/NGT regarding non-compliance)	Water Quality Data-Present (DO,BOD and pH)*	Water Quality Data-2016 (DO, BOD and pH)*	Management Plan (Implemented/Drafted/Not existing)	Major management challenges faced
a) J&K Wildlife Protection Department										
1	Hokersar Wetland Conservation Reserve	Srinagar/ Budgam	34° 06'.556"N 74° 43'.132"E	Notified as Conservation Reserve under the Wildlife Protection Act. This site is also notified as RAMSAR Site on 08-11-2005.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation, Encroachment.
2	Hygam Wetland Conservation Reserve	Baramulla	34° 14'.448"N 74° 30'.914"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation, Encroachment.
3	Shallabugh Wetland Conservation Reserve	Ganderbal/ Srinagar	34° 09'.583"N 74° 43'.433"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of	Turbid during rains & high flows otherwise clear having desired levels	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management	Silting, Flood, Weed infestation, Encroachment.

				<i>Act.</i>		<i>any order of HC/SC/NGT till date.</i>	<i>BOD and other parameters.</i>		<i>Action Plan for all the Wetland Conservation Reserves of Kashmir.</i>	
4	Mirgund Wetland Conservation Reserve	Budgam/Baramulla	34° 07'.472"N 74° 39'.437"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation, Encroachment.
5	Kranchoo Wetland Conservation Reserve	Pulwama	33° 59'.693"N 74° 56'.156"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation.
6	Chattalum Wetland Conservation Reserve	Pulwama	34° 00'.598"N 74° 56'.513"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation, Encroachment.
7	Freshkhoori Wetland Conservation Reserve	Pulwama	34° 00'.627"N 74° 55'.332"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation, Encroachment.

8	Manibugh Wetland Conservation Reserve	Pulwama	33° 59'.693"N 74° 56'.156"E	Notified as Conservation Reserve under the Wildlife Protection Act.	Wildlife Protection Act, 1972,	Applicable laws are being implemented and there is no report of non-compliance of any order of HC/SC/NGT till date.	Turbid during rains & high flows otherwise clear having desired levels BOD and other parameters.	Not available	Department of Wildlife Protection in Collaboration with National Institute of Technology Srinagar is working on formulation of an Integrated Management Action Plan for all the Wetland Conservation Reserves of Kashmir.	Silting, Flood, Weed infestation.
b) J&K Lakes and Waterways Development Authority										
1	Dal Lake	Srinagar	34.1106° N 74.8686° E	Others	J&K LAWDA Development Act, 1970	Complying	<p>Nehru Park Basin: pH:7.9 D.O: 6.0 mg/1 BOD: 9 mg/1</p> <p>Nishat Basin: pH: 8.0 DO: 5.0 mg/l BOD: 9.mg/1</p> <p>Hazratbal Basin: pH: 7.9 D.O: 6.7 mg/1 BOD: 8 mg/I</p> <p>Nigeen Basin: pH: 7.9 D.O: 6.5 mg/I BOD: 12 mg/1</p>	<p>Nehru Basin: pH: 8.1 D.O: 7.3 mg/I BOD: N.A</p> <p>Nishat Basin: pH: 8.0 DO: 6.4 mg/1 BOD: N.A</p> <p>Hazratbal Basin: pH: 7.9 D.O: 6.5 mg/1 BOD: N.A</p> <p>Nigeen Basin: pH: 7.9 D.O: 5.6 mg/1 BOD: N.A</p>	<ul style="list-style-type: none"> • 5 STPs constructed by LDA in the past. Three at Hazratbal, Habak and Laam on FAB Technology and are under refurbishment. And will be completed and commissioned by 30th November 2020. Two STPs at Nallah Amir Khan and Brari Nambal on SBR Technology. Total treatment of 36.1 MLD out of the required 50 MLD (approx.) is being carried out by these STPs. Now DPR for the construction of 14 MLD STP for left out i.e uncovered area of Tellbal/ Shalimar stands prepared. • Dredging of settling basin. • Catchments are management by plantation of trees/ construction of check dams and construction of 	<ul style="list-style-type: none"> • High ingress of nutrients into the lake. • Sewage management, uncovered areas and houseboats. • Rehabilitation of Dal Dwellers. • Vigorous/excessive weed growth

									<i>compost pits.</i> <ul style="list-style-type: none"> • <i>Dredging of outflow channels.</i> • <i>Selective deweeding.</i> <i>Aeration through surface aerators etc.</i>	
c) J&K Wular Conservation and Management Authority (WUCMA)										
1)	<i>Wular Lake</i>	<i>Bandipora/ Baramulla</i>	<i>34° 17' 45" to 34° 25' 30" N and 74° 31' 40" to 74° 40' 15" E</i>	<i>Ramsar site</i>	<i>Wetland Conservation Rules 2017; J&K Development Act and Wild Life (Protection) Act.</i>	<i>All complied with</i>	Statement enclosed	N.A	<i>Management Action Plan under implementation</i>	<i>Siltation/ Willow removal</i>

8. From the above, it is seen that while in the last column of 'major challenges', the challenges are mentioned, the status of remedial action has not been given. Thus, the report is incomplete and does not serve the required purpose. Let an action plan in respect of each of the wetland be prepared within one month for action in a time bound manner, with budgetary support and identified accountable persons. The plan may include among others remedial action against weed infestation, sewage discharges, solid waste disposal, encroachments etc. This may be overseen by the Chief Secretary, J&K in view of significance of the matter and continued violation of orders of the Hon'ble Supreme Court, noted earlier. The Chief Secretary, J&K to remain present in person on the next date, by video conferencing, with compliance status as on 31.10.2021.

9. We now take up the report of the MoEF&CC with regard to status of compliance of the environmental norms in respect of significant wetlands, based on the information furnished by the State PCBs, PCCs/Wetland Authorities of States/UTs.

10. The report mentions that the Wetland Division is implementing National Plan for Conservation of Aquatic ecosystems (NPCA) for Conservation and Management of Wetlands in the country on cost sharing basis between Central Government and respective State Governments with the object of National Plan for Conservation of Aquatic Ecosystems (NPCA). The Plan NPCA aims at holistic conservation and restoration of wetlands and lakes for achieving the desired water quality enhancement, besides improvement in biodiversity and ecosystems and to promote mainstreaming of wetlands in developmental programming with States by supporting formulation and implementation of integrated management plans, capacity development and research. Till date MoEF&CC has funded 92 nos. of wetlands in 24 States under NPCA

scheme. 100 days programme for rejuvenating and restoring wetlands was initiated wherein over 130 wetlands were targeted using the 4 – pronged approach of preparing Brief Documents, filling Ecosystem Health Cards, instituting Wetland Mitras and formulating Integrated Management Plans. Health Cards have been prepared for 115 nos. of wetlands covering an area of 24,55,321.91 ha. States were advised to prepare Integrated Management Plans (IMP) for these wetlands based on the health and specific threats facing the wetlands which ensures rejuvenation in an outcome-oriented manner. Phase II of this initiative is now underway. It is envisioned to include about 1000 wetlands and help identify synergies between different stakeholders. Over 500 health cards have been prepared with the help of knowledge partners and sent to states for validation. two wetlands, namely Sukhna (Chandigarh) and Raamgarh Taal (UP) have been notified under the Rules. Draft notifications for many other wetlands are at various stages of notification by the State Governments. Currently, India has 42 nos. of wetlands designated as Ramsar Sites (Wetlands of International Importance) covering 1,081,438 hectares area and spread across 19 states and UTs. MoEF&CC has provided financial assistance to States under various Centrally Sponsored Schemes (CSS), namely National Action Plan for Conservation of Aquatic ecosystems (NPCA), Integrated Development of Wildlife Habitat (IDWH) and Conservation and Management of Mangroves and Coral reefs (CMMC). Out of 42nos. of Ramsar sites, 35 nos. of sites were supported through financial assistance under various Centrally Sponsored Scheme by MoEF&CC for conservation and management. 16 nos. of Ramsar sites are being monitored by Central Pollution Control Board (CPCB) for water quality. According to the National Wetland Inventory and Assessment (NWIA) carried out through Space Applications Centre (SAC), Ahmedabad based on 2006-07 satellite data, **a total**

201503 nos. of wetlands have been mapped at 1: 50,000 scale which are >2.25 ha and cover an area of approx. 14.7 Million ha. Significant wetlands include the 42 nos. of Ramsar wetlands and other wetlands. The Ministry had earlier prepared a health card system, which provides the health status of the wetland based on a rapid study of health of each wetland ecosystem. Using health and threat score, 130 wetlands were rapidly assessed in a special drive of 100-day Programme. The nodal officers for 33 nos. of these wetlands which fell under Low Health and High Threat category, were guided for preparing and reviewing the management plans of these wetlands to mitigate the threats.

11. We have considered the report filed by the MoEF. 'Summary of data received' given in the report is hardly of any value as against most of the States, remarks are 'not responded'. Under the heading 'Examples of some best practices implemented for the rejuvenation of wetlands', reference has been made to certain steps taken only two places - Anusupa and Chilika Lakes, Odisha.

12. We are disappointed at inadequacy of the report filed almost 10 months after the last order and four years after the order of the Hon'ble Supreme Court. It is surprising to note that even after such long period, the National Wetland Authority is not able to get relevant information from the concerned States, inspite of categorical orders of the Hon'ble Supreme Court dated 08.02.2017, requiring the Central Government to inventorize 2,01,503 wetlands to which the principle of Rule 4 of the Wetlands Rules 2010 was made applicable. If even the relevant information with regard to compliance of the binding direction of the Hon'ble Supreme Court could not be compiled by the National Wetland

Authority, one wonders what meaningful action will be taken by the said Authority. It is a matter of serious great regret and failure.

13. The applicant has filed response to the report of the joint Committee dated 11.06.2021. Suggestion on the subject of performa for deciding which wetlands are significant wetland must include component like:

“8. ... (i) whether the concerned wetland is having any significance from livelihood sourcing point of view and if that has been affected for any reason, (ii) whether there exist any communities who possess traditional knowledge with respect to the wise use of wetlands, so that the same knowledge can be utilised for replication in similar type of wetlands elsewhere which are under threat and (iii) what enforcement action has been taken for each identified threat and how much of the threat has been addressed.”

It is further pointed out that only 363 wetlands have been identified as ‘significant wetlands’ out of 2,01,503 wetlands which are more than 2.25 ha.

14. Accordingly, we direct that the National Wetland Committee may expeditiously compile all relevant data about status of compliance of environmental norms in terms of directions of Hon’ble Supreme Court which covers 2,01,503 wetlands. Out of the said data, data in respect of ‘significant wetlands’ may be placed before the Tribunal. Under Rule 6(3) (c) of the Wetland Rules 2017, the National Wetland Committee has to monitor compliance of Rules by the State Wetland Authorities. The Committee needs to get action plans formulated and executed under control of DMs and District level Committees. The States may accordingly prepare annual reports and MoEF&CC may bring out National Annual Status Report as required under the said Rules. This exercise may be overseen by Joint Secretary, MoEF&CC to be nominated by the Secretary, MoEF&CC. Nomination may be done within one week from today. The suggestion that identification of significant wetlands could not be based

merely on the size but all factors, including the suggestion of the applicant, mentioned above. Report about status as on 31.10.2021 may be filed before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF. The said Joint Secretary may remain present in person by video conferencing on the next date.

A copy of this order be forwarded to Secretary, MoEF&CC, Chief Secretary, J&K and the National Wetland Committee by e-mail for compliance.

A copy of this order be also forwarded to Chief Secretaries and DMs of all States/UTs by e-mail for compliance.

List for further consideration on 17.11.2021.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

M. Sathyanarayanan, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

July 22, 2021
Original Application No. 351/2019
DV



आर पी गुप्ता
R P Gupta



सचिव
भारत सरकार
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

D.O. No. J-22012/36/2020 CS(W)

10th August, 2021

Dear Chief Secretary

I am writing to you in connection with the Hon'ble NGT order dated 22.07.2021 in OA No.351 of 2019 in the matter of Raja Muzafar Bhat Vs State Government of Jammu and Kashmir (copy enclosed).

NGT has asked for compliance of the National Wetland Conservation and Management Rules (2017) as per which, all States/UTs had to constitute State Wetland Authorities, inventorise all the wetlands in the State, make a list of wetlands which had to be notified under the Rules and then start the process of notification.

However, as per the status received from the States(enclosed), it is seen that while the SWAs have been constituted in all the States, the process of inventorisation and preparation of Brief Documents hasn't even started in many of the States. As on date, only two wetlands, Ramgarh Taal in UP and Sukhna Lake in Chandigarh have been notified under the wetland Rules though Goa has placed draft notifications of 11 wetlands in the public domain.

I would request you to please direct the SWAs of your State of which statutorily, the Chief Secretary is the Vice-Chairperson, to initiate the process of notification of wetlands in the State. Detailed guidelines for implementation of the Rules and how to go about the process of notification has already been circulated by the Ministry on 13th March, 2020 and the same is also available on our website www.moef.gov.in.

The status of compliance of rules and notification of wetlands is to be informed to the NGT in two months' time and therefore, the same may please be expedited. In case of any queries, the state may communicate with Smt. Manju Pandey, Joint Secretary (manju.pandey@nic.in).

With Regards

Encl: As above.

Yours sincerely,

R P Gupta

[R P Gupta]

Chief Secretaries / Administrators of all the States / Union Territories

Annexure II

List of Participating States and UTs and their Inputs

	State/UT	Major Inputs provided by State/UT Wetland Authorities during the VC
1	NCT Delhi	<ul style="list-style-type: none">• SWA has listed 1040 wetlands with 16 responsible agencies: UIDs given to them• List of the wetlands which are under some protection to be provided by SWA (~18)• Capacities of these agencies being developed to prepare BD, 539 already prepared, yet to be reviewed by Technical Committee• Shapefiles of all exist with SWA• Revenue record registration of these water bodies to be explored
2	Haryana	<ul style="list-style-type: none">• Statement submitted already but only for 3 wetlands, updated information would be sent• Pond Authority has allotted UID to 18000 ponds• Wetland Authority has identified 1216 (more than 2.25 hectares) water bodies as wetlands, these would be taken out of Pond Authority• Resource Mobilisation has been initiated by Irrigation Dept to recognise these water bodies as wetlands• 16 of more than 25 acres area: Step 1 will see their BDs being made• Confirmation needed whether the ponds are already registered in revenue record
3	Punjab	<ul style="list-style-type: none">• 1300 wetlands more than 2.25 hectares• District committees also formed• Fresh remote sensing exercise being done to supplement the NWIA, ground truthing pending• Panchayat level Mitras identified in all districts• Around 300 are already recorded as wetlands in revenue records, SWA to confirm
4	Rajasthan	<ul style="list-style-type: none">• National Atlas identifies more than 46000 wetlands in Rajasthan and more than 12000 that are larger than 2.25 hectares• Detailed information to be shared
5	Himachal Pradesh	<ul style="list-style-type: none">• 170 wetlands more than 2.25 hectares; 60-70% already protected• Details would be furnished
6	Tamil Nadu	<ul style="list-style-type: none">• Data already provided• Tamil Nadu Wetland Mission announced by CM in assembly and budget session, focusing on identification, mapping, notification and restoration

		<ul style="list-style-type: none"> • More than 42978 wetlands identified in SAC, around 5013 were being prioritised as natural and of more than 2.25 ha, 140 wetlands identified for notification, process for mapping initiated • Insisting a change analysis with updated GIS data • 100 wetlands identified for notification and restoration on 5 years using a multi-sectoral approach and state level monitoring system • 20 notifications under the Rules envisioned for this FY • 1090/5000 already in PA
7	Andhra Pradesh	<ul style="list-style-type: none"> • 31 wetlands prioritised for notification, 5 BD prepared to be approved by SWA • Details on all wetlands more than 2.25 ha yet to be shared
8	Goa	<ul style="list-style-type: none"> • Updating of atlas underway along with ground truthing & vetting by land survey etc. • Seasonal wetlands also being prioritised for their biodiversity • Biodiversity Committees supporting the Wetland Authority • 46 wetland detailed reports done, 24 of these are vetted, final notification of few underway • Public hearings were attended by 1000-2000 people • Wetlands being categorised depending on their use & dependence of people • Historical artificial wetlands discussions have been ongoing, the minutes of the same were upheld by NGT and notification of these wetlands would be allowed
9	Karnataka	<ul style="list-style-type: none"> • Wetland Authority was constituted on 2018, there was also an existing lake development authority which was later wound up and minor irrigation dept took over lakes/manmade wetlands. The issue of wetland authority constitution has only recently been resolved to some extent • Env Dept sought time to clarify the authority to take up wetlands
10	Meghalaya	<ul style="list-style-type: none"> • Information as shared before the meeting: 134 wetlands identified by NESAC (2 of the wetlands were misidentified in SAC and one was missing), 80 identified for notification under Rules, 70 of these are under autonomous district councils/communities/private individuals: BD for these will be prepared by Forest & Env Dept; BD for other 10 will be prepared by respective owners : Eastern Air Command Assam Rifle, NEEPCO, PHEW, Rural Research & Training Centre, MeECL • Draft notifications for 14 have been placed before SWA • 26 would be taken up in next FY

		<ul style="list-style-type: none"> • Water Quality assessments being carried out in prioritised wetlands and work being done in HC and IMPs for the same
11	Kerala	<ul style="list-style-type: none"> • 40 identified for notification under Rules: 4 BD prepared, rest under preparation; SWA has advised that local community hearings be held to finalise boundaries and rights • Most districts covered under Coastal Zone notifications; Conservation of Paddy Field and Wetlands, 2008 • Out of 1762, how many under PA and how many under paddy act to be shared
12	Puducherry	<ul style="list-style-type: none"> • Details on the breakup of wetlands and existing that are applicable awaited • Osudu already an identified wetland and a PA, 115 wetlands identified by SAC • Meeting of SWA to be held in a few days
13	Assam	<ul style="list-style-type: none"> • Information to be furnished • Maps of many wetlands have been prepared by forest dept
14	Bihar	<ul style="list-style-type: none"> • 28 identifiable wetlands have been prioritised: BDs under preparation, 2 uploaded, no notifications yet • Ground truthing of 133 wetlands has been initiated to confirm the local names, existence and extent of these • Reconcile with rural dept data on actions taken (e.g. removal of encroachment) • Checking up revenue records for wetlands already recorded
15	Chhattisgarh	<ul style="list-style-type: none"> • Charge of SWA to be transferred from Ministry of Housing to Biodiversity Board, no information currently present
16	Sikkim	<ul style="list-style-type: none"> • Out of 530, 135 prioritised for notifications as many are inaccessible, documentation of these assigned to IORA, of these 25 draft notifications will be shared in public domain soon
17	Lakshadweep	<ul style="list-style-type: none"> • Lagoons exist which are already covered under marine/coastal conservation laws
18	West Bengal	<ul style="list-style-type: none"> • East Kolkata Wetlands Management Act declared • 26 significant and more than 500 hectares wetlands; in 2017, 20 were identified during Balakrishnan case, BDs prepared using 2010 rules; After Wetland Authority, 6 prioritised, 3 are protected and 3 are outside • More than 9000 wetlands more than 2.25 hectares exist • Bifurcation of wetland that are already under some protection to be shared, information for the same to be procured from NCSCM, state remote sensing centre, Forest Dept etc.
19	Andaman & Nicobar Islands	<ul style="list-style-type: none"> • 2459 wetlands more than 2.25 ha as per SAC, most of these are coastal already covered under coastal acts, inland ones natural and man – made) are also mostly

		<p>protected under Forest Acts, few small water storage ponds exist for drinking water etc.</p> <ul style="list-style-type: none"> • Proforma to be shared
20	Gujarat	<ul style="list-style-type: none"> • HC direction to notify water bodies: consequent to this, state govt has notified water bodies in 2004, acc to this more than 8000 water bodies more than 2.25 hectares in rural areas, in municipalities, 264 water bodies notified under Bombay irrigation act • SWA newly re constituted, after meeting notification to be initiated, 12-14 being considered • Around 6000 wetlands need to be reconciled with ground truthing • Information to be added on portal
21	Mizoram	<ul style="list-style-type: none"> • Greater than 2.25 hectares, 88 wetlands exist, 11 identified as significant, notification process started for 2 • Ground truthing and ascertaining of ownership of all these to be shared]
22	Odisha	<ul style="list-style-type: none"> • 56 wetlands reconciled, rest yet to be reconciled, 2 of these Ramsar so deemed notified, 4 to be notified under Wetland Rules after meeting and approval of SWA meeting, 7 BD prepared to be uploaded do portal • Reconciliation of 1200 wetlands to be done
23	Telangana	<ul style="list-style-type: none"> • SAC atlas: around 200 natural out of 8000 more than 2.25 ha identified by SAC • Telangana weeded out the details of wetlands out of erstwhile Andhra Pradesh Atlas • Various departments were reached out to identify wetlands – but the depts have not reconciled any as wetlands; now ground truthing being carried out to ascertain how many water bodies exist and whether they qualify as wetlands under rules are not, only 6 of the natural around 200 under PA • Roadmap and details to be shared • Private sector partnerships to be explored for non-PA management implementation • Ramsar sites candidates identified
24	Tripura	<ul style="list-style-type: none"> • 432 more than 2.25 ha identified as per SAC; 7 – 8 prioritised • Roadmap for revenue record/notifications etc to be initiated
25	Uttar Pradesh	<ul style="list-style-type: none"> • BD and IMPs being prepared; several wetlands managed under NPCA, 8 wetlands identified as Ramsar sites • 139 wetlands from different agro-climatic zones, all the BS submitted to technical committee which approved only 50 of these, different stakeholders to be consulted by district wetland committees before notification process is initiated

		<ul style="list-style-type: none"> • 506 wetlands fall under forest area, one notified and 8 Ramsar sites; details of wetlands protected under other depts. to be shared • All wetlands recorded in revenue records
26	Chandigarh	<ul style="list-style-type: none"> • Other than Sukhna, there are few small water bodies • ground truthing to be done to reconcile with SAC
27	Daman & Diu and Dadra & Nagar Haveli	<ul style="list-style-type: none"> • Information on the wetlands protected under various acts would be furnished
28	Jammu & Kashmir	<ul style="list-style-type: none"> • 1411 wetlands as per SAC included Ladakh and other areas as well; details to be shared on how many in J&K now and how many of these in revenue records • It may be noted that the each wetland has a different characteristic and not all may require de-weeding since some wetlands are characterised by this vegetation and serves as habitat for different species • Water Quality Assessments carried out for different wetlands, sound health indicated • IMPs of the wetlands taken up in the Raja Muzaffar Bhat case prepared
29	Jharkhand	<ul style="list-style-type: none"> • No inputs as of now
30	Ladakh	<ul style="list-style-type: none"> • Wetland Authority only recently constituted, data unavailable currently • Ladakh to now weed out district wise from erstwhile J&K atlas • Once wetlands identified, screening of significant wetlands would be done
31	Madhya Pradesh	<ul style="list-style-type: none"> • SAC atlas more than 15152 wetlands more than 2.25 hectares, district officers and nodal points working in tandem with Wetland Authority for ground truthing • 29 BDs and 100 health cards prepared, one Ramsar site designated, 3 proposals underway • Information on breakdown of the wetlands falling under other acts etc to be shared
32	Maharashtra	<ul style="list-style-type: none"> • As per SAC, 44000 wetlands in the state; 15918 according to rules definition • A mobile app has been made with lat-long to all talathi levels at all district for ground truthing, who forwarded to tehsildars who finally shared with SWA. Thus, Phase 1 of ground truthing thus completed and now with SWA who have identified some discrepancies and now back at Talathi levels to work out the discrepancies. • 2 Ramsar sites, more under consideration • many wetlands also covered in Coastal Act: Information on this to be shared • MoEFCC: Wetlands that are not covered under Rules would still be referred to as wetland, just not to be notified under these Rules

33	Manipur	<ul style="list-style-type: none"> • As per SAC: 167 wetlands more than 2.25 hectares, 540 less than 2.25 hectares: 119 wetlands in total have already been verified by State Remote Sensing Centre, others still being verified • 23 wetlands studied for techno- feasibility, 7 prioritised, 2 already supported by NPCA, 2 more under consideration • Loktak Protection Act exists, details on whether any of 167 already protected under other rules to be shared like the Paddy and Wetlands Act
34	Arunachal Pradesh	<ul style="list-style-type: none"> • 1119 wetlands more than 2.25 ha (discrepancy in this as SAC said 1119 less than 2.25 ha); over 407 larger than 5 ha and 190 of these are protected under WP • 28 wetlands prioritised for which BD and Health Cards being prepared. • Details of how many out of 1534 fall under other Acts etc.
35	Uttarakhand	Meetings to be rescheduled.
36	Nagaland	

Annexure-III

Compliance Status of States/UTs

Sl.No	Name of State / UT	Wetlands details as per Inventory of Space Application Centre	Significant Wetlands details as per State Govt / UT Administration	Whether the wetland protection by any other act? If so details	Status of Brief documents	Implementation of Wetlands (C&M) rules, 2017, Notification, IMP Wetlands Mitras, Health Cards etc.	Additional information
1	Andaman & Nicobar Islands	-	-	-	-	-	During VC, it was reported that coastal already covered under coastal acts, inland ones are also mostly protected under Forest Acts, few small water storage ponds exist for drinking water etc.
2	Andhra Pradesh	Natural (Inland) Wetland, Permanent Streams / Creeks & Tree dominated Wetland	5 nos. of wetlands.	Wildlife (Protection) Act, 1972; Environment (Protection) Act, 1986; Biological Diversity Act, 2002	Brief documents were prepared for 4nos of wetlands.	Wetlands Mitras, Health Cards etc. were prepared for 4 nos. of wetlands.	One Ramsar site. During VC, it is reported that 5 Brief Documents prepared and placed for approval. 31 nos of wetlands have been identified for notification.

3	Arunachal Pradesh	1534 nos (above 2.25ha) Yet to be inventorised.	12nos of high altitude wetlands	Environment (Protection) Act, 1986,	-	-	During VC, reported that 28 nos of wetlands have been prioritized for preparation of BDs. State was requested to provide details under which the 1534 nos of wetlands are being protected.
4	Assam	Total Wetlands = 442 nos. (above 50 Ha.) Total area = 68611.49 Ha.	Preparation of inventory for 36 nos. of wetlands (both above and below 50 Ha.) is under process.	Environment (Protection) Act, 1986 Forest and Wildlife Acts	Preparation of Brief documents are under process	IMP, wetlands Mitra, Health Cards etc. under process	One Ramsar site. During VC, reported that maps for many of the wetlands are available with forest department of the states.
5	Bihar	133 nos of wetlands (Above 100 hectare)	28 nos.	7 nos. Wetlands under Wildlife (Protection) Act 1972	Brief documents for 36 nos of wetlands including significant wetlands (28 nos.) and other wetlands have been prepared	Notification of wetlands as per Wetlands (C&M) Rules, 2017 is under process. IMP of 7 nos of wetlands have been prepared as per the provision of wildlife protection act (1972).	One Ramsar site. During VC, reported that ground truthing of 133 nos of wetlands initiated. It was advised to reconcile revenue records and rural department data on wetlands.

						<p>Wetland Mitras registered for 2nos of wetlands 2 (Begusaria and Bhagalpur)</p> <p>Health Cards prepared for 8 nos of wetlands.</p>	
6	Chandigarh	01	01	<p>Wetlands (Conservation & Management) Rules, 2017.</p> <p>Construction and Demolition Waste Management Rules, 2016</p> <p>Environmental (Protection) Act, 1986</p>	<p>Brief Documents copy is attached in e-mail</p>	<ul style="list-style-type: none"> • Sukhna Wetland has been notified. • IMP is under preparation. • Wetlands Mitras are registered. • Health Card is prepared. 	<p>One notified wetland. Other than that, ground truthing being done for existing water bodies.</p>
7	Chhattisgarh	-	-	-	-	-	<p>During VC, it was reported that Charge of SWA to be transferred from Ministry of Housing to Biodiversity Board, no information currently available.</p>

8	Daman & Diu and Dadra & Nagar Haveli	-	-	-	-	-	During VC, it was informed that wetlands of the UTs are already covered under various the coastal regulations
9	Delhi	1040 water bodies listed	5 nos of waterbodies	In process of notification under Wetland (Conservation and Management) Rules, 2017	539 nos of brief documents prepared out of 1040 water bodies.	<ul style="list-style-type: none"> • Wetland Authority was notified vide notification dated 23.04.2019. • Listed 1040 nos of wetlands and UID numbers allotted. • Mapped 1011 nos out of 1040 nos of Water bodies. • Prepared 539 brief documents • The Technical Committee under Wetland Authority has been 	<p>During VC, reported that 1040 wetlands have been provided with UIDs and capacities of the 16 agencies responsible for them are being developed.</p> <p>539 BDs placed for technical committee review</p> <p>Process of notification to start after that</p>

						<p>constituted on 01.07.2021.</p> <ul style="list-style-type: none"> • Review of the brief documents is under process. • Process of notification will start immediately after the brief documents are reviewed. • 27 nos of Wetland Mitras identified after public notices • First meeting of the Wetland Mitras convened on 31.08.2021. 	
10	Goa	550 nos.	46 nos.	Only one wetland (Carambolim Lake) is managed by	Brief Documents of 46 waterbodies	<ul style="list-style-type: none"> • 6 nos of wetlands notified. 2 nos of 	Updating of wetlands atlas underway along with ground truthing and land survey.

				Forest Department of Goa under High court order dated 13/08/2003	prepared out of which 25 BDs are approved by Technical Committee and GSWA and remaining are in progress of technical revisions	<p>wetlands are under revision.</p> <ul style="list-style-type: none"> • 3 nos of wetlands are in progress of revised ground truthing. • 14 nos of wetlands are approved by GSWA for draft notification. • Remaining 21 nos wetlands are yet to be placed before TC for approval. 	Biodiversity Committees are supporting Wetlands Authority.
11	Gujarat	11433 inland wetlands and 2750 coastal wetlands of more than 2.25 ha	14nos.	The Coastal wetlands are protected under the Coastal Regulation Zone Notification Most of the water bodies are protected under the Bombay	-	-	<p>3 nos Ramsar sites During VC, the following are reported.</p> <ul style="list-style-type: none"> • 14 nos of wetlands considered by SWA as significant • In compliance to the Direction of Hon'ble High Court, water bodies have been notified in 2004 under

				<p>Irrigation (Gujarat Amendment) Act, 1962,</p> <p>Besides this, wetlands are protected under the Wildlife Protection act, 1972 Environment (Protection) Act 1986</p>			<p>the Bombay Irrigation Act. 8265 nos of water bodies (>2.25 ha) have notified in statutes.</p>
12	Haryana	18000 nos of ponds including 1216 nos of water bodies (>2.25 ha)	3nos of wetlands	<p>Wildlife (protection) Act 1972 applicable for 2 nos of wetlands.</p> <p>The Haryana Pond and Waste Water Management Authority Act, 2018.</p> <p>Haryana Water Resources (Conservation, Regulation and Management)</p>	IMP and BD is under process for 3 nos of wetlands One wetland is transboundary wetland sharing with state of Delhi	State Govt. constituted SWA and Technical Committee.	<ul style="list-style-type: none"> • 2nos of wetlands are recognized as Ramsar sites. • During VC, it was reported that the extant Pond Authority has allotted UIDs to 18000 ponds and that SWA has initiated the exercise of shifting 1216 of these into their listing and outside Pond Authority • Haryana SAC is geotagging all these ponds and preparing their kml files • 54 ponds have been given for rejuvenation to

				Authority Act 2020			corporates under the CER funds
13	Himachal Pradesh		6 nos of wetlands	Forest (Conservation) Act 1980,		-	3nos of Ramsar sites During VC, i reported that 60-70% of the 170 wetlands >2.25 ha are already protected under Wildlife Protection Act and the Forest Act.
14	Jammu & Kashmir	As per- Updated inventory of water bodies (2021), 3745 water bodies including wetlands, lakes, ponds, etc.) 532 wetlands/ water bodies are located within forest/ protected areas while	18 nos of significant wetlands	<ul style="list-style-type: none"> • 2 nos. of wetlands protected under authorities constituted by UT administration. • 11nos of wetlands are protected under Wildlife (Protection) Act, 1972 	IMP (including BD) were finalized for 13 nos of wetlands. BDs are under review for 5 nos. of wetlands.	IMP for 13 nos of wetlands are prepared. Conservation and Management activities are ongoing.	3 nos of Ramsar sites. During VC, reported that <ul style="list-style-type: none"> • 1411 nos of wetlands as per SAC which include Ladakh and other areas as well. • Detailed status on number of wetlands after reorganisation of J&K now and how many of these in revenue records is yet to be assessed. • Wetlands health in respect of water quality is sound and de-weeding is not required for all wetlands.

		142 wetlands are outside such areas					
15	Jharkhand	-	-	-	-	-	During VC, it is mentioned that no inputs as on date.
16	Karnataka	-	-	-	-	-	During VC, it was reported that Wetland Authority constituted in 2018, there was also an existing lake development authority which was later wound up and minor irrigation dept took over lakes/manmade wetlands. The issue of wetland authority constitution has only recently been resolved to some extent. Env Dept sought time to clarify the authority to take up wetlands
17	Kerala	As per the Kerala Wetland Atlas prepared by Space Application Centre 1762 nos of	<ul style="list-style-type: none"> • Draft list of 40 nos wetlands selected for Notification 	Wetlands protected under Coastal Regulation Zone Notification, 2011 And, The Kerala Conservation of	<ul style="list-style-type: none"> • Brief documents prepared for 4 nos of wetlands. • Brief documents under preparatio 	<ul style="list-style-type: none"> • 40 wetlands selected for notification with geo-coordinates and placed before SWA or approval. • IMP were prepared for 	3 nos of Ramsar sites. Notification of wetlands <ul style="list-style-type: none"> • Draft list of 40 wetlands selected for notification (copy enclosed) with geo-coordinates. • This list was placed in SWAK authority meeting held on 18.06.2020

		<p>wetlands have been delineated.</p> <p>In addition, 2592 nos of wetlands smaller than 2.25 ha have also been identified.</p>		Paddy land and Wetland Act 2008	n for 36 nos of wetlands	<p>3nos. of wetlands.</p> <ul style="list-style-type: none"> • IMP is under process for one wetland. • Wetland Mitras are registered for 4nos of wetlands. • Health Cards are prepared for 19 nos. of wetlands. 	<ul style="list-style-type: none"> • The approved minutes of the SWAK Authority meeting held on 18-6-2020 is also attached. • Online meetings conducted for 4 District. Process for rest of 8 districts SWAK is underway. • • Wetland Mitras: Wetland mitras registered for Vembanad-Kol, Sasthamkotta and Ashtamudi lake. Vellayani lake. • Health Cards: Vembanad-Kol, Sasthamkotta, Ashtamudi lake, Vellayani lake prepared under Phase I of 100 Transformative Ideas. Under Phase II of 100 Transformative Ideas Programme :
18	Ladakh	-	-	-	-	-	<p>2 nos Ramsar sites</p> <p>During VC it was reported that after bifurcation of erstwhile J&K state, Ladakh Wetland</p>

							Authority constituted recently UT now weeding out district wise from erstwhile J&K atlas
19	Lakshadweep	-	-	-	-	-	During VC it was reported, lagoons exist which are already covered under marine/coastal conservation laws
20	Madhya Pradesh	1552 nos (>2.25ha)	4nos	2296 wetlands already protected by the Forest Act	29 nos of brief documents are under review	1.Health Card - 120 Wetland Health Card prepared 2.Five wetlands identified for notification	One Ramsar site. # wetlands under process for designation as Ramsar sites During VC it was reported, district officers and nodal points working in tandem with Wetland Authority for ground truthing.
21	Maharashtra	44714 nos.of Wetlands	15918 Wetlands are identified under Wetland Rules Rest under other Acts	Coastal Regulation Zone Forest and Wildlife Acts	• Prepared a Mobile app to record the information with respect to the Brief Document	SWA has been constituted.	2 nos of Ramsar sites. The phase-1 of ground truthing with the App has been completed, validation being done.

					<p>of Wetlands.</p> <ul style="list-style-type: none"> All collectors have been advised to revise the information through the mobile app to finalise the BDs. 		
22	Manipur	119 nos of wetlands verified by State Remote Sensing Centre	23 nos of which 7 nos of wetlands were prioritized		<p>Environment (Protection) Act 1986;</p> <p>The Manipur Loktak Lake (Protection) Act, 2006;</p> <p>The Manipur Conservation of Paddy Land and Wetlands Act, 2014</p>	7nos.	<p>1 Ramsar site;</p> <p>During VC, it is reported that</p> <ul style="list-style-type: none"> 119 nos of wetlands in total have already been verified by State Remote Sensing Centre , others still being verified
23	Meghalaya	134 nos.of wetlands identified through North East Space	Initiated process for notification of 80 nos. wetlands.	NIL	80 nos. of wetlands identified for notification under the Wetlands	<ul style="list-style-type: none"> SWA has been constituted. Technical Committee and 	<p>During VC it was reported that of the 80 identified for notification under Rules, 70 BDs of wetlands under autonomous district</p>

		Application Center (NESAC).			(Conservation and Management) Rules, 2017, Preparation of 'Brief Documents' is under process.	Grievance Committee. <ul style="list-style-type: none"> Water samples are being collected from the wetlands identified for notifications to assess quality of waters. Information are being collected to prepare Integrated Management Plan (IMP) and Health card for wetlands identified for notification. Health card for one wetland has been prepared. 	councils/communities/private individuals would be prepared by Forest Dept. and for the rest 10, respective owners would prepare BD. Draft notifications for 14 have been placed before SWA and 26 would be taken up in next FY. Water Quality assessments being carried out in prioritized wetlands
24	Mizoram	88 nos. of wetlands	11 nos of wetlands	Wildlife (Protection) Act, 1972,	Prepared BDs for 5 nos of wetlands;	Process has been initiated for notification.	During VC it was reported that 11 nos of wetlands

				Mizoram Forest Act, 1955 and Forest (Conservation) Act, 1980	BDs preparation for 6nos of wetlands under preparation.	IMP are prepared for 3nos of wetlands Wetland Mitras are Constituted for 3nos of wetlands. Health Cards Completed for 3nos of wetlands.	out of 88 nos identified as significant, notification process started for 2 nos.
25	Nagaland	-	-	-	-	-	-
26	Odisha			Protected under the Coastal Management Zone Regulation		76 Health Cards prepared Wetland Mitras registered	2 nos Ramsar sites 3 more being processed During VC, it was reported, 4 identified to be notified under Wetland Rules after meeting and approval of SWA meeting, 7 BD prepared to be uploaded to portal
27	Puducherry	-	-	-	-	-	During VC, it was reported that Osudu already an identified wetland and a Protected Area.
28	Punjab	1381 wetlands 2.25 ha, 414 of	7 nos. of wetlands	Wildlife (Protection)Act, 1972	Brief Documents have been prepared for	Draft IMP, Health Cards have been prepared and Wetlands Mitras	6 nos of Ramsar sites Further, panchayat level Mitras identified in all districts.

		<p>which are natural</p> <p>All these wetlands have been listed and named village-wise</p> <p>Ground truthing of 350 wetlands completed</p>			7nos of wetlands	have been enrolled.	Around 300 nos of wetlands are recorded in revenue records, SWA to confirm.
29	Rajasthan	13321 nos of wetlands	71 nos of wetlands	17 nos of wetlands under Wildlife (Protection) Act 1972,	54 nos. of wetlands are under process for notification	-	2 nos of Ramsar sites
30	Sikkim	-	25nos.	State Forest Act, and Forest Conservation Act, 1980. Wildlife Protection Act, 1972	Brief documents of the wetlands are awaiting approval of State Government .	<p>IMPs for 2 nos. of wetlands have been prepared.</p> <p>All 25 nos. of wetlands have been approved by the state</p>	<p>During VC reported that many wetlands are inaccessible proving data collection difficult and slow.</p> <p>135 nos of wetlands have been prioritised for notifications.</p>

						government/state wetland authority, to be notified in the first phase.	Documentation of these assigned to IORA. Out of these, draft notifications for 25 nos of wetlands will be shared in public domain soon.
31	Tamil Nadu	Inland Wetlands Natural - 4609 Man-made - 19480 Coastal Wetlands Natural - 404 Man-made - 191 Wetlands (<2.25 ha) Mainly tanks - 18294 Total – 42978 (9,02,534 ha)	The State of Tamil Nadu has identified 141 prioritized wetlands (Natural – 95 and Man-made – 46) for protection, conservation and management	The following falls under the Tamil Nadu Forest Act, 1882, Wildlife Protection Act, 1972, Biological Diversity Act, 2002 and Forest (Conservation) Act, 1980 <ul style="list-style-type: none"> • 248 nos of inland natural wetlands, • 743 nos of inland man-made wetlands, • 104 nos of Coastal natural wetlands • 428 nos of wetlands 	<ul style="list-style-type: none"> • Brief documents prepared for 141 nos. of prioritized wetlands. • Brief documents of another 100 wetlands shall be prepared in consultation with SACON, Coimbatore 	<ul style="list-style-type: none"> • Tamil Nadu State Wetland Authority was reconstituted • Draft notification proposal for 20 nos of wetlands prepared for public consultation as per Wetlands (Conservation and Management) Rules, 2017 • 70 nos. of wetland Health cards are prepared. • Community wetland 	<p>1 Ramsar site</p> <ul style="list-style-type: none"> • Government of Tamil Nadu for the first time has launched “Tamil Nadu Wetland Mission” during August 2021 under the dynamic leadership of the Hon’ble Chief Minister for the ecological restoration of 100 wetlands in a period of five years. • The mission would focus on identification, mapping, notification and restoration. • 100 nos of wetlands identified for notification and restoration on 5 years using a multi-sectoral approach and state level monitoring system

						coordinators from the local communities for every natural wetlands designated as Wetland Mitras	<ul style="list-style-type: none"> • 20 nos of notifications under the Rules envisioned for this Financial Year (2021-22)
32	Telangana		2 nos of wetlands	Telangana Forest Act, 1967 and Wildlife (Protection) Act, 1972	Prepared for 2nos of wetlands	-	<p>During VC it was reported that Telangana weeded out the details of wetlands out of erstwhile Andhra Pradesh Atlas.</p> <p>Ground truthing being carried out to ascertain how many water bodies exist, Around 200 nos of wetlands under PA</p>
33	Tripura	No. of wetlands identified (Having area greater than 2.25 ha) – 608 Aquatic Vegetation found 57%	-	-	-	-	1 Ramsar site During VC it was reported that out of the 432 nos of wetlands > 2.25 ha identified as per SAC, 7-8 prioritised

		<p>Turbidity of Water</p> <p>a. High - 12%</p> <p>b. Moderate - 74%</p> <p>c. Low - 14%</p>					
34	UP	10945 wetlands >2.25 ha	8 Ramsar sites 339 significant wetlands	Protected under the Wildlife and Forest Act Entered in Revenue Records		Over 200 Brief Documents prepared Health Cards prepared Wetland Mitras registered	One wetland notified 133484 wetlands already entered in Revenue Records
35	Uttarakhand	-	-	-	-	-	1 Ramsar Site
36	West Bengal		26 significant wetlands East Kolkata Wetlands (EKW) and Sundarban Biosphere Reserve	East Kolkata Wetlands (Conservation and Management) Act, 2006 & Wetlands (Conservation and Management) Rules, 2017.	Prepared	IMP is prepared for EKW	2 nos of Ramsar sites. During VC it was reported that there exists an East Kolkata Wetlands Management Act. Further it was informed that More than 9000 nos of wetlands > 2.25 hectares exist.

				Coastal Management Zone Regulation Wildlife Act			The Wetlands Authority prioritized 6 nos, 3 nos of which are in Protected Areas.
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Guidelines for implementing Wetlands (Conservation and Management) Rules, 2017

**MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
GOVERNMENT OF INDIA**

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I. Guidelines Purpose and Scope

1. The Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified **Wetlands (Conservation and Management) Rules, 2017** (hereinafter **Wetlands Rules**) under the provisions of the Environment (Protection) Act, 1986 as regulatory framework for conservation and management of wetlands in India. These guidelines have been drafted to support the State Governments / Union Territory (UT) Administrations in the implementation of the Rules by providing guidance on:
 - a) Preparing a list of wetlands in the State / UT
 - b) Identifying wetlands for notification under Wetlands (Conservation and Management) Rules, 2017
 - c) Delineating wetlands, wetlands complexes and zone of influence
 - d) Preparation of Brief Document
 - e) Determining 'wise use' and ecological character
 - f) Developing a list of activities to be regulated and permitted
 - g) Developing an Integrated Management Plan
 - h) Constitution and operational matters of the Wetlands Authorities
 - i) Overlapping provisions.
2. These guidelines were drafted by a committee constituted by the MoEF&CC vide OM dated August 10, 2018. The committee comprised Mr U.A.Vora (former CCF Wildlife, Government of Gujarat), Dr Arvind Kumar (President, India Water Foundation), Dr B.C. Jha (Former Director (Wetlands), Central Inland Fisheries Research Institute), Dr P. S. N. Rao (Director, School of Planning and Architecture), Dr Afroz Ahmad (Member, Environment and Rehabilitation, Narmada Control Authority) and Dr Ritesh Kumar (Director, Wetlands International South Asia). The committee met on five occasions at MoEF&CC, New Delhi for the said purpose, and submitted final version of the guidelines to the Ministry on December 5, 2018. The draft guidelines were subsequently sent for comments to all State Governments / UT Administrations, and have been finalized after due consideration of the comments received. The Committee immensely benefitted from the discussions held with Ms Manju Pandey (Joint Secretary). The Committee also acknowledges the support received from Ms Rita Khanna (Scientist 'F'), Dr M. Ramesh (Scientist 'E'), Mr Chandan Singh (Scientist 'D'), Dr Anu Chetal (Research Assistant) and Ms Pallavi Mukherjee (Research Assistant) during the guidelines preparation process.

II. Wetlands to be regulated

3. The provisions of Wetlands Rules apply to:
 - a) Wetlands designated by the Government of India to the List of Wetlands of International Importance under the provisions of the Convention on Wetlands (Ramsar Convention). [Ref. Rule 3 (a) of Wetlands Rule]
 - b) Wetlands notified under the rules by the Central Government, State Government and UT Administration. [Ref. Rule 3 (b) of Wetlands Rule]

4. All wetlands, irrespective of their location, size, ownership, biodiversity, or ecosystem services values, can be notified under the Wetlands Rules, except:
 - a) River channels;
 - b) Paddy fields;
 - c) Human-made waterbodies specifically constructed for drinking water purposes;
 - d) Human-made waterbodies specifically constructed for aquaculture purposes;
 - e) Human-made waterbodies specifically constructed for salt production purposes;
 - f) Human-made waterbodies specifically constructed for recreation purposes;
 - g) Human-made waterbodies specifically constructed for irrigation purposes;
 - h) Wetlands falling within areas covered under the Indian Forest Act, 1927; Forest (Conservation) Act, 1980; State Forest Acts and amendments thereof;
 - i) Wetlands falling within areas covered under the Wildlife (Protection) Act, 1972 and amendments thereof;
 - j) Wetlands falling within areas covered under the Coastal Regulation Zone Notification, 2011 and amendments thereof.[Ref. Rule 2 (g) and Rule 3 of Wetlands Rules]
5. Human-made wetlands are defined as wetlands that are planned, designed and operated to meet a specific purpose (such as providing water for irrigation, producing fish through culture operations, producing salt, recreation, preventing salinity intrusion, flood control etc.). Only those human-made wetlands that have been built for purposes, mentioned at paras 4c) - 4g) above, are excluded from notification under these Rules.
6. Natural wetlands, partly or wholly used for purposes as mentioned at 4c) - 4g), attract the provisions of the Wetlands Rules.
7. Wetlands designated as Ramsar Sites may be notified under the Rules as per the process mentioned in paragraphs 57-65, even when partly or wholly overlapping with areas covered under the Indian Forest Act, 1927; Forest (Conservation) Act, 1980; State Forest Acts and amendments thereof; Wildlife (Protection) Act, 1972 and amendments thereof; Coastal Regulation Zone Notification, 2011 and amendments thereof. Regulations for parts of wetlands overlapping with 4h-4j (supra) will, however, be as per the corresponding regulatory framework. Ramsar site areas, not covered under any of the overlapping laws and rules, will attract the provisions of the Wetlands Rules (Refer illustration 1 below).

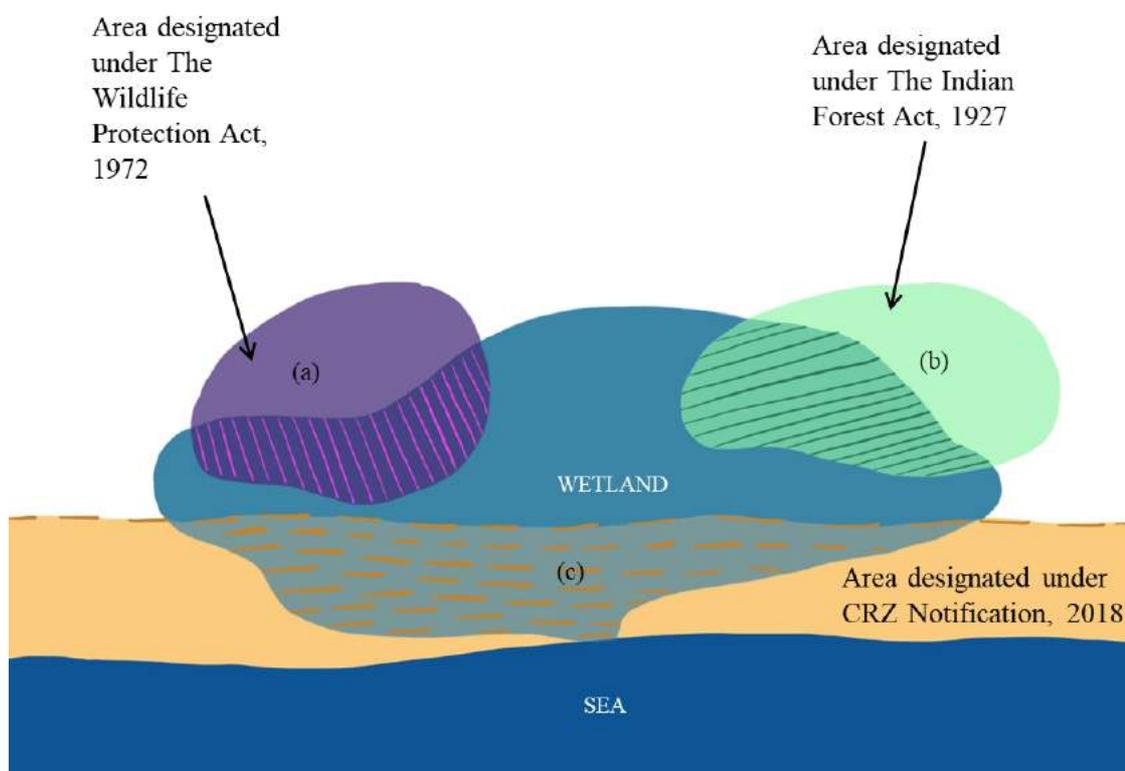


Illustration 1: Using the Wetlands Rules to fill in the gaps in situations of multiple regulations in a Ramsar Site. In the situation above, wildlife sanctuary (indicated as a) and a reserved forest (indicated as b) partly overlap with the Ramsar Site boundary. Being a coastal wetland, a part (indicated as c) also falls under Coastal Regulation Zone. In such cases, it is recommended that the entire Ramsar Site, inclusive of overlapping areas, is delineated and notified under the Wetlands Rules. The overlapping areas shall continue to be regulated as per respective Acts and Rules, and the remaining area may be regulated as per the provisions contained in Wetlands Rules. Similar approach can be taken even for wetlands that have not been designated as Ramsar Site.

8. For wetlands falling within the criteria 3 (b) (supra), the exclusions mentioned at para 4 a) - 4j) shall apply only in cases wherein the entire wetland falls under the said category. In cases wherein areas falling within para 4 a) - 4 j) form a part of larger wetland or wetlands complex, and exclusion may result in impeded ecological contiguity and connectivity, such areas may be included within the boundary of wetland being notified. Regulations within the boundaries of areas mentioned at para 4 h) - 4 j) will, however, be as per the corresponding regulatory frameworks (Refer Illustration 1 and 2).
9. Though Protected Areas and areas falling within the purview of Coastal Zone Regulation have been excluded from notification under the Wetlands Rules, management of such wetlands may benefit through the application of 'wise use' approach (within the framework of existing laws and rules) as outlined in Section VII of these guidelines.

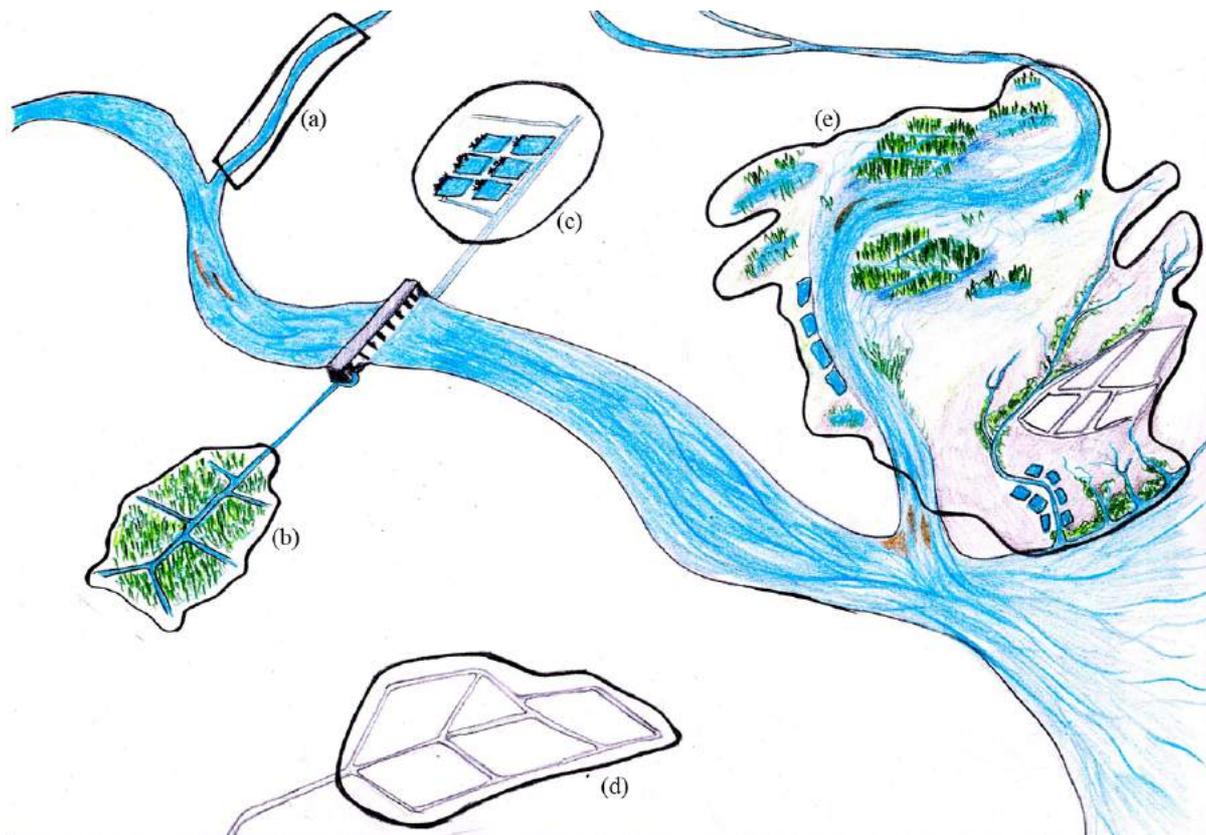


Illustration 2: Considering river stretch and human-made wetlands for notification. In situations when the entire wetland, to be notified, is a river stretch [indicated as (a)], paddy fields [indicated as (b)], human-made wetland waterbodies for irrigation [indicated as (c)], and human-made waterbodies created for aquaculture purposes [indicated as (d)], these may not be notified under the Wetlands Rules. However, in cases as in (e), wherein river channels, paddy fields, and human-made wetlands such as aquaculture areas form a part of a larger wetland or wetland complex, and excluding such area may fragment the wetland regime, the area to be notified may include river channels, paddy fields or any other human-made wetland.

10. Should the State Governments/UT Administrations be desirous, any wetland, even if included within the list of wetlands excluded from notification under Wetlands Rules, may be notified under the relevant state laws. In this regard, the approach/mechanism outlined in Wetlands Rules and these guidelines may be suitably adopted.

III. Wetlands Authorities

11. As per Rule 5 of Wetlands Rules, 2017 the Wetlands Authorities within States and UTs are deemed as constituted with the following members:
 - a) Minister In-charge of the Department of Environment/Forests of the State Government or Minister In charge of the Department handling wetlands - Chairperson;(Administrator or Chief Secretary of the UT - Chairperson in the case of UT);
 - b) Chief Secretary of the State or Additional Chief Secretary equivalent - Vice Chairperson;
 - c) Secretary in-charge of the Department of Environment - Member ex-officio; (Vice-Chairperson in the case of UT)
 - d) Secretary in-charge of the Department of Forests - Member ex-officio;
 - e) Secretary in-charge of the Department of Urban Development - Member ex-officio;

- f) Secretary in-charge of the Department of Rural Development - Member ex-officio;
 - g) Secretary in-charge of the Department of Water Resources - Member ex-officio;
 - h) Secretary in-charge of the Department of Fisheries - Member ex-officio;
 - i) Secretary in-charge of the Department of Irrigation and Flood Control - Member ex-officio;
 - j) Secretary in-charge of the Department of Tourism - Member ex-officio;
 - k) Secretary in-charge of the Department of Revenue - Member ex-officio;
 - l) Director, State Remote Sensing Centre - Member ex-officio;
 - m) Chief Wildlife Warden - Member ex-officio;
 - n) Member Secretary, State/UT Biodiversity Board - Member ex-officio;
 - o) Member Secretary, State Pollution Control Board/UT Pollution Control Committee - Member ex-officio;
 - p) Additional Principal Chief Conservator of Forests of the Regional Office of Ministry of Environment, Forest and Climate Change - Member ex-officio;
 - q) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the State Government / UT Administration
 - r) Additional Secretary/Joint Secretary/Director in the Department of Environment/Forests or Department handling wetlands - Member Secretary
12. The Department of Environment / Forests or Department handling wetlands shall designate one expert each in the following fields for a period not exceeding three years: [Ref. Rule 5 (2) (xvi) of Wetlands Rules]
- a) Wetlands ecology
 - b) Hydrology
 - c) Fisheries
 - d) Landscape planning
 - e) Socioeconomics
13. The Wetlands Authority may co-opt other members, not exceeding three in number. It is recommended that at least one member may be drawn from civil society to enable stakeholder representation.
14. The Authority shall exercise following powers and perform the following functions:
- a) Prepare a list of all wetlands of the State or UT within three months from the date of publication of these rules;
 - b) Prepare a list of wetlands to be notified, within six months from the date of publication of these Rules, taking into cognizance any existing list of wetlands prepared/notified under other relevant State Acts;
 - c) Recommend identified wetlands, based on their Brief Documents, for regulation under these rules;
 - d) Prepare a comprehensive digital inventory of all wetlands within one year from the date of publication of these rules and upload the same on a dedicated web portal, to be developed by the Central Government for the said purpose; the inventory ought to be updated every ten years;
 - e) Develop a comprehensive list of activities, to be regulated and permitted within the notified wetlands and their zone of influence;
 - f) Recommend additions, if any, to the list of prohibited activities for specific wetlands;
 - g) Define strategies for conservation and wise use of wetlands within their jurisdiction;
 - h) Review Integrated Management Plan for each of the notified wetlands (including trans-boundary wetlands in coordination with Central Government), and within these plans to

consider continuation and support to traditional uses of wetlands that are harmonized with ecological character;

- i) Recommend mechanisms for maintenance of ecological character through promotional activities for land within the boundary of notified wetlands or wetlands complex have private tenancy rights,;
- j) Identify mechanisms for convergence of implementation of the management plan with the existing State/UT level development plans and programmes;
- k) Ensure enforcement of these rules and other relevant Acts, rules and regulations and on a half-yearly basis (June and December of each calendar year) inform the concerned State Government or UT Administration or Central Government on the status of such notified wetlands through a reporting mechanism;
- l) Coordinate implementation of Integrated Management Plans based on wise use principle through various line departments and other concerned agencies;
- m) Function as a nodal authority for all wetland-specific authorities within the State or UT Administration;
- n) Issue necessary directions for the conservation and sustainable management of wetlands to the respective implementing agencies.
- o) Undertake measures for enhancing awareness within stakeholders and local communities on values and functions of wetlands; and
- p) Advise on any other matter suo-motu, or as referred by the State Government/UT Administration.

[Ref. Rule 5 (4) of Wetlands Rules]

15. The State Government or UT Administration shall designate a department as nodal department for wetlands. Such department shall provide all necessary support and act as Secretariat to the Authority. The State Governments / UT Administrations may allocate sufficient budget and human resources to ensure smooth functioning of the Authority and conduct of its various activities. The Authority and the nodal department may identify a professional institute(s)/organization(s) that would assist them in their various functions such as preparing a list of wetlands, Brief Documents for notification etc.

16. The Authority shall meet at least thrice in a year. State Government / UT Administration may decide an appropriate quorum, not less than half of the members. Minutes of meetings of the Authority may be placed in the public domain within a period not exceeding two weeks from the day on which meeting has been convened. [Ref. Rule 5 (2) (8) of Wetlands Rules]

17. Each Wetlands Authority shall constitute:

- a) Technical Committee to review Brief Documents, Management Plans and advise on any technical matter referred by the Wetlands Authority; and,
- b) Grievance Committee, consisting of four members, to provide a mechanism for hearing and forwarding the grievances raised by the public to the Authority.

[Ref. Rule 5 (6)(b) of Wetlands Rules]

18. The composition of these committees may be decided by the concerned State / UT Wetlands Authority. Meetings of these committees shall be held **at least once every quarter**, and proceedings presented in the next meeting of the Authority.

19. The Wetlands Authority may empower the Grievance Committee to redress grievances at the local level and to recommend to the Authority for the finality of decisions. The State Government

/ UT Administration may consider appointing at least one member with a legal background in the Grievance Committee. [Ref. Rule 5(6)(b) of Wetlands Rules]

20. State or UT level Wetlands Authorities constituted before notification of Wetlands Rules, shall be deemed dissolved for the purpose of these Rules.
21. State / UT Wetlands Authorities shall serve as nodal authority for authorities / agencies created for specific wetlands. Management plans and notifications pertaining to the specific wetland shall be subject to approval and endorsement of the State / UT Wetlands Authority. Administrative matters, however, may continue to be dealt by the nodal department specified within the constitution of the wetlands specific authority.

IV. Preparing a list of wetlands

22. The State / UT Wetlands Authorities are expected to prepare a list of wetlands within the boundaries of their respective States / UTs. This list should be comprehensive, and not just focus on wetlands that qualify for notification under these Rules. Therefore, it is recommended that the list is developed based on wetlands definition of the Ramsar Convention (to which India is a Contracting Party).

22.1 The Convention, ratified by Government of India, defines wetlands as ‘areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which, at low tides, does not exceed six meters’. In addition, to protect coherent sites, Article 2.1 of the Convention provides that ‘wetlands may include riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands.’

23. The National Wetlands Atlas prepared by Space Application Center under the National Wetlands Inventory and Assessment project, and available at https://vedas.sac.gov.in/vedas/downloads/atlas/Wetlands/NWIA_National_atlas.pdf has spatial data on wetlands for each State and UT.

23.1 The GIS data has already been made available by the Wetlands Division of the MoEF&CC to the representatives of the State Governments / UT Administrations during the regional consultation workshops held during 2016-18.

23.2 Wetlands Authority may seek the assistance of District Administration to validate the information provided in the Atlas. Existing land records may also be considered while developing the list of wetlands.

23.3 The final list of wetlands/wetland complexes may be prepared under the following heading:

- a) Wetland Name
- b) Geographical coordinates (latitude and longitude of the centre of the wetland)
- c) Wetland type (inland and coastal) and sub-type (natural or human-made)
- d) District(s) within which the wetland is located
- e) Approximate area of the wetland
- f) Whether the wetland falls within the category of regulated wetlands as per Wetlands Rules.

A format for compiling the list of wetlands is at **Annex 1**. This list may also contain trans-boundary wetlands (at the end) with additional details such as the bordering State/UT under which wetland is falling along with corresponding area.

24. In addition to the National Wetlands Atlas, it may also be helpful to consider the list of wetlands studied and described by various agencies, including revenue records (particularly areas recorded as any of the wetlands types such as ponds, lake, *talab*, *sarovar* etc.). The States/UTs may seek the assistance of State Remote Sensing Agencies and local experts for preparing such wetland inventory expeditiously. State Governments/ UT Administrations are also encouraged to make use of satellite images available at National Remote Sensing Center's Geo-platform Bhuvan, accessible at <http://bhuvan.nrsc.gov.in/data/download/index.php>.

V. Delineating wetlands

25. After the wetlands have been identified for notifications under the Wetlands Rules, the next step involves delineation of each of these wetlands (or wetlands complexes) and their zone of influence.
26. For delineating wetlands, it is essential to be aware of the distinguishing characteristics of these ecosystems. Wetlands arise when inundation by water produces soil dominated by anaerobic processes, which in turn forces the biota, particularly rooted plants to adapt to flooding. Wetlands, thus, have the following general distinguishing characteristics:
 - a) Permanent or periodic inundation or saturated soils throughout the year or during parts of the year
 - b) Presence of macrophytes adapted to wet conditions (also known as hydrophytes)
 - c) Soil that are saturated or flooded long enough favouring development of anaerobic conditions
27. Water creates wetlands. The biological composition of wetlands, from fish to migrating waterbirds, depends on the ways water moves within a wetland. The amplitude and frequency of water level fluctuations are probably the most critical factors affecting the composition and functioning of wetlands. Hydrological regimes may, therefore, be used as the primary delineation characteristics for defining wetland boundary.
28. Wetlands boundary can be derived as the outer envelope of the maximum area under inundation, the area covered by hydrophytes, or saturation of soil near the surface during a normal monsoon year. The boundary should be such that during a normal monsoon year, the entire area is inundated for at least 15 days, or the soil is saturated roughly within one foot from the surface. It may be pertinent to exclude areas that are only intermittently inundated in the case of high floods (such as one in 100-year floods) or extreme events (such as storm surges of extreme intensity).
29. Where two or more wetlands exist with a high degree on hydrological connectivity (for example, wetlands connected during monsoon), or ecological connectivity (sharing waterbird habitats or located on migratory fish pathways), these can be delineated as a single complex. In such cases, non-wetland areas may be included within the boundary of the complex to ensure connectivity and continuity. The connotation of wetland throughout this document includes wetlands complex, as may be the case.

30. For each wetland and wetlands complex, a map should be prepared using a Geographical Information System (WGS84 datum and UTM (Universal Transverse Mercator) projection) and adopting professional cartographic standards. Essential features to be included in the map are as follows:
- Wetland boundary
 - The boundary of settlements located within and around the wetland
 - Connecting drainages, inflows and outflows
 - Main roads and railway (if any)
 - Major landmarks
31. Recommended scale for producing the wetlands maps is as follows:

Wetland / Wetlands complex area	Recommended scale
Below 100 ha	1: 4000
Between 100 - 500 ha	1: 10,000
Between 500- 4000 ha	1: 25,000
4000 ha and above	1: 50,000

These scales have been recommended on the basis of spatial data available for preparing wetlands maps and details that may be extracted for management planning and monitoring decisions. Resources at 2 LISS IV data that may be used for preparing map of wetlands below 100 ha renders an approximate scale of 1:4000. Even larger wetlands can be mapped using finer resolution data. However, for expedience and cost effectiveness, a lower scale may be sufficient for meeting management needs.

VI. Delineating zone of influence

32. For each wetland to be notified, a zone of influence is to be defined. The zone of influence of a wetland is an area, developmental activities wherein are likely to induce adverse changes in wetland ecosystem structure and (ecological) functioning.
33. The boundary of the zone of influence may be defined with due consideration to local hydrology and nature of land use. For wetlands with a well-defined surface drainage system, its directly and freely draining basin should be delineated as the zone of influence. This can be done using a suitable digital elevation model data and validated using toposheets. The basin should encompass all direct inflow as well as outflow areas. The river basin atlas of India (available at http://www.india-wris.nrsc.gov.in/wrpinfo/index.php?title=WRIS_Publications) may be used to support the delineation.
34. For wetlands with diffused drainage and where the slope is too gentle leading to large basin area, the zone of influence can be delineated on the basis of features that are likely to influence wetland functioning adversely. These could be based on the outer periphery of adjoining settlements, or peripheral agricultural fields that drain directly into the wetland.
35. A map should be prepared to indicate the following elements in a Geographical Information System (WGS84 datum and UTM projection) and adopting professional cartographic standards:
- Zone of influence
 - Wetland boundary

- c) Connecting drainages, inflows and outflows
- d) Main roads and railway (if any)
- e) Major landmarks

36. The recommended scale at which the map of the zone of influence is to be produced is as follows:

Area of zone of influence	Recommended mapping scale
Below 100 ha	1: 4000
Between 100 and 500 ha	1: 10,000
More than 500 ha	1: 50,000

VII. Wetlands wise use and ecological character

37. Management of notified wetlands is recommended to be based on ‘wise use’ approach. Human beings and their use of resources form an essential component of wetland ecosystem dynamics. The ‘wise use’ approach recognises that restricting wetland loss and degradation requires incorporation of linkages between people and wetlands. The wise use principle emphasises that human use of these ecosystems on a sustainable basis is compatible with conservation.
38. Ramsar Convention defines the ‘wise use’ of wetlands as “the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development”. Ecosystem approach requires consideration of the complex relationship between various ecosystem elements and promotion of integrated management of land, water and living resources. Wise use, through an emphasis on sustainable development, calls for resource use patterns which can ensure that human dependence on wetlands can be maintained not only in the present but also in the future. Seen in totality, wise use is about maintaining and enhancing wetland values and functions to ensure the maintenance of the flow of benefits from wetlands (their ecosystem services) from an inter-generational equity point of view.
39. Ecological character is “the combination of ecosystem components, processes and services that typify the wetland at a given point in time”. Ecosystem components are living (biotic) and non-living (abiotic) constituents of the wetland ecosystem. These include:
- a. Geomorphic setting (landscape, catchment, river basin);
 - b. Climate (precipitation, wind, temperature, evaporation, humidity);
 - c. Physical setting (area, boundaries, topography, shape, bathymetry, habitat type and connectivity);
 - d. Water regime (inflow, outflow, balance, surface-groundwater interactions, inundation regime, tidal regime, quality);
 - e. Wetland Soil (texture, chemical and biological properties);
 - f. Biota (Plant and animal communities)
40. Ecosystem processes occur between organisms and within and between populations and communities, including interactions with the non-living environment that result in an existing ecosystem state and bring about changes in ecosystems over time. These include: Physical processes (water stratification, mixing, sedimentation, erosion); Energy - nutrient dynamics (primary production, nutrient cycling, carbon cycling, decomposition, oxidation-reduction);

Processes that maintain animal and plant population (recruitment, migration); and Species interaction (Competition, predation, succession, herbivory).

41. Ecosystem services are benefits obtained by humans from ecosystems, categorized as: Provisioning (fisheries, use of aquatic vegetation for economic propose, wetland agriculture, biochemical products); Regulating (maintenance of hydrological regimes) and Cultural (recreation and tourism, spiritual, scientific and educational value). Supporting services are included within ecosystem processes.

42. A wetland use is not ‘wise-use’ if:

- a. The intervention leads to adverse changes in ecosystem components and processes, such as:
 - i. Reduction in water flowing into the wetlands
 - ii. Reduction in the area under inundation, or changes in inundation regime
 - iii. Reduction and alteration of natural shoreline
 - iv. Fragmentation of wetlands into small patches of water
 - v. Reduction in water holding capacity
 - vi. Degradation of water quality
 - vii. Reduction in diversity of native species
 - viii. Introduction or emergence of invasive species
 - ix. Decline in wetlands resources, such as fish, aquatic plants, and water
- b. The intervention enhances some ecosystem services (such as food production values) while diminishing other ecosystem services (such as the ability of wetlands to moderate wetlands regime).

43. Some examples of wetlands uses that may not be ‘wise-use’ are as follows:

Type of wetland	Intervention	Ecosystem services likely to be enhanced	Ecosystem services likely to be diminished
Lagoon	Prawn aquaculture by creating enclosures within the lagoon area	<ul style="list-style-type: none"> • Food provision • Livelihoods for wetlands dependent communities 	<ul style="list-style-type: none"> • Water regime moderation • Flood buffering
Lake	Impounding water by regulating outflows	Increased water availability for human use	<ul style="list-style-type: none"> • Ability to moderate floods
Marsh	Construction of road connecting settlements located on the periphery	Transport	<ul style="list-style-type: none"> • Hydrological regime moderation • Flood buffering • Aesthetics
Urban lake	Concretization of shoreline for beatification	<ul style="list-style-type: none"> • Aesthetic value • Tourism and recreational benefits 	<ul style="list-style-type: none"> • Ability to accommodate monsoon flows • Habitat values

44. In several cases, the impact on ecosystem structure and functions, or tradeoffs in ecosystem services may not be immediately apparent. It is, therefore, recommended that the ‘precautionary

approach' is adopted to ensure that wetlands conservation is prioritized in the case of information uncertainty.

VIII. Prohibited activities in a notified wetland

45. The following activities are prohibited within notified wetlands:
 - a. Conversion for non-wetland uses including encroachment of any kind;
 - b. Setting up of any industry and expansion of existing industries;
 - c. Manufacture or handling or storage or disposal of construction and demolition waste covered under the Construction and Demolition Waste Management Rules, 2016; hazardous substances covered under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 or the Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or cells, 1989 or the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008; electronic waste covered under the E-Waste (Management) Rules, 2016;
 - d. Solid waste dumping;
 - e. Discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements;
 - f. Any construction of a permanent nature except for boat jetties within fifty metres from the mean high flood level observed in the past ten years calculated from the date of commencement of these rules; and,
 - g. Poaching.
[Ref. Rule 4 (2) of Wetlands Rules]
46. State/UT Wetlands Authority, based on consideration of site-specific conditions, may consider expanding the list of prohibited activities for a notified wetland (or wetlands complex). This should be specified as such within the notification for specific wetland (or wetlands complex).
47. Permission for carrying out any activity included within the list of prohibited activities [as per Rule 4(2) of Wetlands Rules], within a notified wetland can only be given by the MoEF&CC. A specific request needs to be made by the State Government based on the recommendation of Wetlands Authority specifying:
 - a) Activity for which permission is sought;
 - b) Justification thereof;
 - c) The premise on which the activity is not considered detrimental to the wetland's ecological character; &
 - d) Supporting evidence-base (such as an expert report, EIA, mitigating measures proposed to be undertaken etc.)

IX. Developing a list of activities, to be regulated in a notified wetland:

48. Activities within a notified wetland and its zone of influence, which when contained within a specific threshold or area, are not likely to induce an adverse change in wetlands ecological character may be placed under the 'regulated' category. Such activities should be notified within the notification for a specific wetland (wetlands complex).
49. Following activities, when regulated, are not likely to induce an adverse change in wetlands:
 - a) Subsistence level biomass harvesting (including traditional practices);

- b) Sustainable culture fisheries practices (in private lands);
- c) Plying of non-motorized boats;
- d) Desilting, in case where wetlands inflow regimes and water-holding capacity are impacted by siltation (note that ‘deepening’ activities are not the same as ‘desilting’); &
- e) Construction of temporary nature

50. Each activity, however, would need to be considered on a case to case basis keeping in mind the ecological character of wetland or wetlands complex. A generic listing of a set of activities for all wetlands of the State / UT may not be feasible or desirable. For example, releasing treated sewage may not be advisable for high altitude wetlands that have slow decomposition rates.

51. For each regulated activity, it may be desirable to set a threshold limit beyond which the activity may be prohibited. The thresholds can be in the form of a spatial limit (such as areas wherein capture fishing may be carried), temporal limits (such as observing closed season), ecological condition (such as maintenance of a water quality parameter within a prescribed range), number of people (such as number of tourists permitted to visit the wetland on a given day), land use (such as prohibiting use of intermittently inundated area for permanent agriculture, or construction of enclosure), or any relevant dimension. Some examples of thresholds are:

Activity (Indicative List)	Aspect on which threshold can be specified
a) Subsistence level biomass harvesting (including traditional practices)	<ul style="list-style-type: none"> • Number of people that can be permitted to harvest biomass within the wetlands • Type of harvesting gears (mesh size) and crafts • Area wherein harvesting is permitted
b) Releasing of treated sewage	Water quality parameters (such as): <ul style="list-style-type: none"> • Dissolved Oxygen, • Biological Oxygen Demand • Chemical Oxygen Demand • Concentration of heavy metals • Coliforms
c) Sustainable culture-based fisheries practices	<ul style="list-style-type: none"> • Area wherein culture-based fisheries is permitted • Stocking density • Water quality
d) Plying of non-motorized boats	<ul style="list-style-type: none"> • Area wherein plying is permitted • Number of boats
e) Desilting, in cases where wetlands inflow regimes and water holding capacity are impacted by siltation	<ul style="list-style-type: none"> • Area wherein desilting can be carried out
f) Noise Pollution	<ul style="list-style-type: none"> • Limiting below level suited for waterbird habitat
g) Washing and bathing activities	<ul style="list-style-type: none"> • Use of detergent
h) Construction of temporary nature	<ul style="list-style-type: none"> • Area wherein temporary constructions can be carried out

	<ul style="list-style-type: none"> • The period for which such structure can be maintained inside the notified wetlands
i) Change in landuse pattern within the zone of influence	<ul style="list-style-type: none"> • Land use does not alter the hydrological regime or interrupt species interactions (such as bird migration pathways)

52. The Wetlands Authority shall be responsible for enforcing the regulations, through enforcement machinery of the concerned State Government / UT Administration.

X. Developing a list of activities permitted in a notified wetland

53. Activities aligned with the ‘wise use’ of wetland may be permitted within the wetland (wetlands complex) or its zone of influence. The following activities are likely to be aligned with the ‘wise use’ approach:

- a) Ecological rehabilitation and rewilding of nature ;
- b) Wetlands inventory, assessment and monitoring;
- c) Research;
- d) Communication, environmental education and participation activities;
- e) Management planning;
- f) Habitat management and conservation of wetland-dependent species;
- g) Community-based ecotourism (with minimum construction activities);
- h) Harvesting of wetlands products within regenerative capacity; and,
- i) Integrating wetlands as nature-based solutions for climate change mitigation and adaptation.

54. Permitted activities may need to be identified considering the ecological character of each wetland to be notified. It is likely that an activity may be benign for one wetland, yet would need regulation for others. For example, ecotourism may not be desirable for all wetlands.

XI. Registration of wetlands

55. It is advised that the State/UT governments may ascertain whether the respective wetland has been registered appropriately in the land revenue records. If the wetland has not been registered as yet, necessary steps may be taken early. This would help in ensuring that the usage of wetland is not altered in future through encroachment, illegal claim of ownership etc.

XII. Account of pre-existing rights and privileges in a notified wetland

56. Each wetland is likely to be associated with a range of pre-existing rights and privileges, and it must be ensured that such rights and privileges are aligned with the ‘wise use’ approach. ‘Privilege’ is defined here as a special entitlement granted to restricted group or persons, on a conditional basis and can be revoked. ‘Rights’, on the other hand, may be irrevocable and inherently held by a human being. Thus, a fish lease granted in certain wetlands by the Department of Fisheries can be considered as a privilege. Privilege can also be customary and traditional (for example, the use of traditional fishing techniques, buffalo wallowing, elephant bathing, the source of drinking water for bovines, etc.). Parking a houseboat against a lease right to clean environment are examples of rights.

57. For assessing the consequence of a pre-existing right or privilege on a wetland, it may be important to consider their implication on wetland ecological character. The privilege of fishing granted along a migratory route can lead to an adverse change in fish stocks. Similarly, the disposal of untreated sewage by houseboat in a wetland can lead to pollution. Thus, such privileges are not aligned with 'wise use'. On the other hand, in many cases, the subsistence level harvest of macrophytes may help in keeping species invasion in check and therefore aligned with ecosystem health. Such considerations may need to be made while deciding whether a wetland use is to be regulated or permitted.

XIII. Notifying wetlands

58. For each wetland proposed to be notified, a 'Brief Document' containing the following information needs to be prepared:

- a) Demarcation of wetland boundary, supported by accurate digital maps with coordinates and validated by ground truthing;
- b) Demarcation of its zone of influence alongwith land use and land cover thereof indicated in a digital map;
- c) Ecological character description;
- d) Account of pre-existing rights and privileges;
- e) List of site-specific activities, to be permitted within the wetland and its zone of influence;
- f) List of site-specific activities, to be regulated within the wetland and its zone of influence; and,
- g) Modalities for enforcement of regulation.

A format for preparing the Brief Document is at **Annex 2**.

59. The nodal department, designated by the State Government/UT Administration for wetlands, shall be responsible for preparing the Brief Documents.

60. In the case of transboundary wetlands, the respective State Governments/UT Administration may initiate the process of preparation of a common Brief Document and submit the same to MoEF&CC. If required, MoEF&CC shall coordinate with the concerned State Governments/UT Administrations for preparation of the Brief Document and addressing relevant issues. The Ministry will further process Brief Document as per process laid under Rule 7(4) of Wetlands Rules, 2017.

61. All Brief Documents shall be placed for approval of the Wetlands Authority. The Authority may endorse the Brief Document for notification to the concerned State Government / UT Administration.

62. The State Government / UT Administration shall issue a draft notification indicating the wetland (wetlands complex) to be covered under the Wetlands Rules. The notification should contain:

- a) Description of the wetland (wetlands complex) boundary along with its map
- b) Description of the zone of influence along with a map
- c) List of activities prohibited within the wetland (wetlands complex) and its zone of influence
- d) List of activities regulated within the wetland (wetlands complex) and its zone of influence
- e) List of activities permitted within the wetland (wetlands complex) and its zone of influence
- f) Name and contact details of the nodal person, who is to be contacted for seeking permission to undertake regulated activities.

A format for notification is at **Annex 3**.

63. Each draft notification shall be placed for public consultation for sixty days.
64. The State Government after considering objections from the concerned and affected persons shall publish the final notification within a period not exceeding 240 days from the date of **draft notification**.
65. MoEF&CC shall issue the draft and final notification for transboundary wetlands.
66. All Ramsar Sites, deemed covered under these Rules, shall also be notified as per the process laid out in paragraphs 57-64. This is proposed to ensure that the site boundaries are properly delineated and the knowledge about the same is available in public domain. It is advised that the information in the 'Brief Document' may be consistent with Ramsar Site Information Sheet (RSIS), submitted to the Ramsar Convention during site designation or RSIS updated thereafter.

XIV. Integrated Management Plan

67. Wetlands are one of the most embedded and interlinked ecosystems with human livelihoods and well-being. A balanced management approach, addressing biodiversity conservation values while providing for sustainable utilisation in a way compatible with the maintenance of natural properties of the ecosystem, needs to be adopted for these ecosystems. It is, therefore, recommended that management of each notified wetland (is guided by an "Integrated Management Plan". The plan refers to a document which describes strategies and actions for achieving 'wise use' of the wetland and includes objectives of site management; management actions required to achieve the objectives; factors that affect, or may affect, various site features; monitoring requirements for detecting changes in ecological character and for measuring the effectiveness of management; and resources for management implementation. Besides identifying resources, a management plan serves several important functions including generating baseline information, communication with stakeholders and ensuring compliance with regulatory frameworks and policy commitments.
68. While it is recognized that each wetland has its own distinctive ecological and hydrological features and thereby distinctive management needs, the following broad planning principles need to be kept in mind while formulating integrated management plans:
 - **Integrated planning:** Aquatic and terrestrial ecosystems are intimately linked by the process of the water flowing through them. Every land use decision has a consequence on water availability. Delineating a basin or a coastal zone enables demarcation of a distinct hydrological unit which is the natural integration of all hydrological processes within its boundary and therefore an ideal and rational unit for soil, water and bio-resources conservation and management. Thus, management planning for wetlands should not be restricted to a defined administrative boundary, but rather take into account wider planning and management context of the basin or coastal zone within which the site is located.

The process of development and implementation of management plans for wetlands often needs to be accompanied by governance improvements at basin and coastal zone level. Such an approach underpins Integrated Lake Basin Management framework that calls for

achieving ‘sustainable management of wetlands through gradual, continuous and holistic improvement of basin governance, including sustained efforts for integration of institutional responsibilities, policy directions, stakeholder participation, scientific and traditional knowledge, technological possibilities, and funding prospects and constraints.

Achieving close relationship between planning and governance is critical, considering multiple stakeholder and sectoral interests which underlie and, to a large extent, structure wetland biodiversity and ecosystem service values, and the need to secure people’s involvement and participation in basin-scale management for considerably long periods of time.

Reflection upon the following six pillars of basin-scale governance may thus be useful:

- **Institutions:** Development of effective organisations and governance frameworks
 - **Policies:** Setting broad directions and specific rules
 - **Participation:** Expanding the circle of involvement
 - **Technology:** Possibilities and limitations
 - **Information:** Pursuing sources of knowledge and wisdom, and
 - **Finance:** Seeking sustainable sources at the appropriate level
- **Use of diagnostic approaches for defining management approach and actions:** Given the uniqueness associated with each wetland, it is important that ‘one size fit all’ approach is replaced with a diagnostic approach, wherein the ecological, hydrological, socioeconomic and institutional features are comprehensively assessed and trends therein determined to be able to spell out management objectives and actions clearly.
 - **Adaptable management:** Wetlands are influenced by a range of drivers and pressures that act at multiple spatial, temporal and political scales. Their management plan, therefore, needs to be accommodative of uncertainties and challenges. This can be achieved by using an adaptable management approach that allows for suitable modification of management based on continuous site monitoring and assessment of new information.
 - **Stakeholder participation:** The condition of any wetland is an outcome of actions by a range of stakeholders, which are linked to the ecosystem in a number of ways. Management planning, therefore, needs to recognise these linkages, and build a mechanism for participation of stakeholders in design, review and implementation processes.
 - **Governance:** Being located at the interface of land and water, wetlands are influenced by a range of developmental activities that take place within their direct and indirect basins and coastal zones. Institutional arrangements for managing wetlands need to be such that they are capable of integrating activities across multiple sectors (such as agriculture, water resources, forests, rural development, urban development, forests and wildlife and others), and balancing the needs of a group of diverse stakeholders while ensuring that ecological integrity of these fragile ecosystems is not adversely affected.
- In the above context, association of entities or individuals as ‘Wetland Mitras’ can encourage stakeholder participation and overall governance.

69. An integrated wetlands management plan can be developed in the following steps, thus enabling a systematic diagnosis of wetlands features and their governing factors to arrive at management objectives and activities.

Step 1	Preamble	Concise policy statement describing the rationale for the application of human, technical and financial resources for the wetland management
Step 2	Description of wetland features	Collation and synthesis of data to describe: wetland location and extent, catchment, hydrological regimes, biodiversity, ecosystem services, socioeconomic and livelihoods
Step 3	Evaluation of wetland features	Based on the description of features, identification of priority wetland features that need to be maintained, and key threats that adversely affect these features
Step 4	Institutional arrangements	<ul style="list-style-type: none"> • Provide an overview of the current institutional arrangements in the context of wetlands management; • Discuss why the current institutional arrangements are insufficient in ensuring wetlands conservation and wise use; • Propose institutional arrangement for wetland management, with specific focus on: <ul style="list-style-type: none"> a) Nodal Agency b) Role of various departments and agencies and coordination mechanism, and c) Role of civil society and communities. • Develop an organogram for management plan implementation. • Regulatory regime specifying activities prohibited within wetlands, activities to be regulated within wetlands and zone of influence and regulation thresholds and activities permitted
Step 5	Setting Management Objectives	<ul style="list-style-type: none"> • Provide a statement of the overall goal that the management plan seeks to achieve; • Summarize the ecological and economic benefits that are expected from management plan implementation; • Enlist specific objectives; • Describe strategy(ies) for achieving each of the management objectives; • Provide a strategy for implementing regulatory regime - including list of activities liable to be prohibited, regulated and permitted within the wetland (wetlands complex)
Step 6	Monitoring and Evaluation Plan	<ul style="list-style-type: none"> • Present an overview of monitoring the wetland, and management plan implementation; • Describe monitoring parameters, the frequency of monitoring and the agency that will be responsible for monitoring; • Describe how coordination between different monitoring agencies will be achieved; • Discuss the infrastructure and human resource requirement for implementing the management plan. (As far as possible, include local universities, research organizations and NGOs in wetlands monitoring); • Discuss the frequency in which reporting shall be done and the responsible agency; Discuss how the monitoring outcomes will be used to adapt management
Step 7	Action Plan	Listing of management components and specific activities to achieve management objectives. For each activity,

		implementation location, prioritisation, implementing agency and timeline should be specified.
Step 8	Budget	Assessment of financial resources required for implementing the management plan and sources of funds.

A description of each step and format for the compilation of integrated management plan is at **Annex 4**.

70. **The management plans should be presented to the Wetlands Authority. The implementation shall begin only after receiving their endorsement. Management plans for Ramsar Sites and transboundary wetlands shall also be reviewed and endorsed by the MoEF&CC.**
71. The diagnostic management planning process, as described above, may also be used to guide management of wetlands excluded from notification under Wetlands Rules.

XV. Violations and penal provisions

72. The Wetlands Authorities are entrusted with the responsibility of ensuring enforcement of Wetlands Rules and other relevant Acts, Rules and Regulations. Provisions of the relevant Central and State Government Acts are applicable.
73. All prohibited and regulated activities beyond their thresholds, if taken up within the wetlands and its zone of influence, shall be deemed violations under the Wetlands Rules.
74. The violations of the Wetlands Rules shall attract the penal provisions as per the Environment (Protection) Act, 1986.
75. Complaints may need to be filed in the case of violations. In exercise of powers conferred under clause (a) of section 19, the Central-Government has authorised the officers and authorities listed, in the Table (p. 238) vide S.O. 394 (E) published in the Gazette No. 185 dated 16-4-87, S.O. 237(E) published in Gazette No. 171 dated 29-3-89 and S.O. 656(E) published in the Gazette No. 519 dated 21-8-89, and amendments thereafter, if any.
76. The Authority should evolve a mechanism for continuous watch and ward of wetlands within their jurisdiction. At the local level, the concerned Gram Panchayat and Urban Local Body may be entrusted with watch and ward in association with any body constituted by the State Wetlands Authority, such as a Wetlands Management Unit for a specific Wetland. At District levels, the responsibility may be entrusted to the DDO/CDO (District/Chief Development Officer)/CEO (Chief Executive Officer)/ Chief Programme Officer of the Wetland level body, such as a Wetlands Management Unit.
77. The State Governments should proactively ensure incorporation of wetlands within land records.
78. The Wetlands Authority shall report the status of notified wetlands on half yearly basis to the State Government/UT Administration and Central Government (recommended proforma at Annex 5).

XVI. Portal for information sharing

79. The MoEF&CC has created a web-portal for sharing information regarding implementation of Wetlands Rules. The portal may be accessed at MoEFCC website. The Central Government, State Government and UT Administration are required to upload all relevant information and documents pertaining to wetlands in their jurisdiction. State Governments / UT Administrations are encouraged to develop their own portals and hyperlink the same to the national portal. The State Governments and UT Administrations are also encouraged to upload other project documents and publications to enable sharing and exchanging good practices related to wetlands management in general, and implementation of regulatory framework in particular.

Annex 2: Format for preparing Brief Document

State / Union Territory: _____

Name and address of person(s) compiling this information _____

Section 1: Identification, Location and Jurisdiction

1.1 Name of the Wetland (Alternative names, including in local language should be given in parenthesis after official name)

1.2 Name of the Village(s) , Tehsil(s), Municipal area (s)

1.3 Name of the District(s) in which wetland complex is located

1.4 Geographical coordinates (Latitude and Longitude, to degree, minutes and second)

Latitude: From _____ to _____

Longitude: From _____ to _____

1.5 Name of the Department / Agency which has jurisdiction over the wetland / wetlands complex

Section 2: Site Characteristics

2.1 Area of wetland / wetlands category (ha) _____

2.2 Wetland type (Please tick appropriate categories and sub-categories)

Category	Subcategory
<input type="checkbox"/> Natural (Inland)	<input type="checkbox"/> Permanent lakes
	<input type="checkbox"/> Seasonal/ intermittent lakes
	<input type="checkbox"/> Permanent streams/ creeks
	<input type="checkbox"/> Seasonal/ intermittent streams/ creeks
	<input type="checkbox"/> Oxbow
	<input type="checkbox"/> River floodplain
	<input type="checkbox"/> Permanent freshwater marshes
	<input type="checkbox"/> Seasonal/ intermittent freshwater marshes
	<input type="checkbox"/> Shrub-dominated wetlands
	<input type="checkbox"/> Tree-dominated wetlands
	<input type="checkbox"/> Geothermal wetlands
	<input type="checkbox"/> Karst and other subterranean hydrological systems

<input type="checkbox"/> Natural (Coastal)	<input type="checkbox"/> Coastal lagoon <input type="checkbox"/> Estuary <input type="checkbox"/> Intertidal mud, sand or salt flats <input type="checkbox"/> Mangroves <input type="checkbox"/> Coral reefs
<input type="checkbox"/> Human-made	<input type="checkbox"/> Aquaculture pond <input type="checkbox"/> Tank <input type="checkbox"/> Saltpan <input type="checkbox"/> Dam / Reservoir

2.3 Depth (m) Average _____ Maximum _____

2.4 Elevation (m above mean sea level) _____ m

2.5 Water regimes

a) Main source of water (tick all applicable)

Rainfall Groundwater Catchment runoff Direct / indirect inflow from river

Others, please specify _____

b) Water permanence

Mostly permanent Mostly intermittent

c) Destination of water from wetland

Feeds groundwater To downstream catchment To river To sea

d) Water pH

Acid (< 5.5) Circumneutral (5.5 - 7.4) Alkaline (> 7.4)

Not known

e) Water salinity

Fresh (< 0.5 g/l) Brackish (0.5 - 30 g/l) Euhaline (30- 40 g/l)

Hypersaline (>40g/l) Not known

f) Nutrient in water

Eutrophic Mesotrophic Oligotrophic

Not known

2.6 Climatic setting

- a) Annual Rainfall /Snowfall(mm) _____
- b) Temperature (°C) Minimum _____ Maximum _____
- c) Humidity (%) Minimum _____ Maximum _____

2.7 Area of zone of influence (in ha) _____ [Ref. paras 32-34 of the guidelines on wetlands]

2.8 Major land use within zone of influence (provide as approximate % of catchment area)

Forests _____%

Plantation _____%

Agriculture _____%

Settlements (Rural) _____%

Settlements (Urban) _____%

Industrial _____%

2.9 Map of wetland complex and zone of influence

(To be enclosed as Annex I and II to this proposal)

Section 3: Biodiversity

3.1 Notable plant species present in wetland

3.2 Notable animal species present in wetland

3.3 Species of conservation significance (rare, endangered, threatened, endemic species)

3.4 Major plant invasive alien species

3.5 Major animal invasive alien species

Section 4: Ecosystem services

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (upto 50 words for each category)
Source of drinking water for people living and around	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Source of water for agriculture	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Fisheries	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Cultivation of aquatic food plants	<input type="checkbox"/> Yes <input type="checkbox"/> No	
For buffalo wallowing and use of domesticated animals	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Medicinal plants	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is a recreational site	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Buffering communities from extreme events as floods and storms	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Groundwater recharge	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Water purification	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Acts as a sink for sediments	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Has significant cultural and religious values	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is a site for recreation and tourism	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Supports noteworthy plants species	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Supports noteworthy animal species	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Site of high congregation of migratory water birds	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Supports life cycle of fish or amphibians	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Mining	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Any other, please list		

Section 5: Pre-Existing Rights and Privileges

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively impact the wetland's ecological health?	Brief description (upto 50 words for each category)
Community Fishing (without any lease or permission from government department)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Fishing under lease from government department	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Harvest of plants (without any lease or permission from government department)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Harvest of plants under lease from government department	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Agriculture or horticulture within wetland	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Grazing	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Religious practices	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Withdrawal of water for domestic use	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Withdrawal of water for agriculture or fisheries	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Bathing or wallowing of domestic animals	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Plying of boats	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	
Any other, please list here	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	

Section 6: Present and Potential Threats

Threat	Degree	Present or Potential	Additional information, if any
Changes in water inflow and outflow	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Pollution	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Unsustainable harvest of biological resources	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Mining	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Siltation	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Encroachment	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Spread of invasive species	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	
Any other, please list	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	

Section 7: Activities Proposed to be Prohibited (other than those listed in Rule 4(2) of Wetland Rules and Regulated

Activity	Whether prohibited or regulated	Regulation within wetlands or zone of influence	If regulated, indicate the level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation / prohibition	Additional information, if any
Withdrawal of water / impoundment/diversion or any other hydrological intervention		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Harvesting of resources (living / non-living)		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Grazing		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Discharge of treated sewage/ effluent / wastewater		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			

Construction of boat jetties, and facilities for temporary use , as pontoon bridges		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Aquaculture, agriculture and horticulture activities within the wetland boundaries.		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Any other, please list		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			

Section 8: Activities Proposed to be permitted

Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	
		<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	

Section 9: Listing of Available Scientific Resources Used

CHECKLIST

- Responsible agency has been clearly identified and details of contact person included
- Wetland/ wetlands complex boundary has been delineated using GIS and firmed up by adequate ground truthing
- Wetland/ wetlands complex map has been provided at required scale
- Zone of influence has been delineated and included in wetland map or a separate map
- Wetland zone of influence is sufficient to manage all activities
- Site's importance have been listed, and for major categories, justification is provided
- Site's biodiversity values are listed, and for major categories, justification is provided
- List of pre-existing rights and privileges is provided
- Consistency or inconsistency of pre-existing rights and privileges is indicated to be best of available knowledge
- Threats to site are listed, and for major categories details are provided
- Activities prohibited, other than those listed in Rule 4(2) have been mentioned
- List of activities to be regulated within wetlands and zone of influence is provided
- List of activities to be permitted is provided

Annex 3: Format for draft notification of wetlands under Wetlands (Conservation and Management) Rules, 2017

Government of [State / Union Territory / India]

[Date]

S.O._____ The draft of the notification, which the [name of the issuing entity] proposes to issue in exercise of the powers conferred under rule 7 of the Wetlands (Conservation and Management) Rules 2017 read with Environment (Protection) Act, 1986 (29 of 1986), is hereby published for the information of the persons likely to be concerned or affected thereby; and notice is hereby given that the said draft notification shall be taken into consideration on or after the expiry of a period of sixty days from the date on which copies of the Gazette of containing this notification are made available to the public;

Any person interested in making any objection or suggestion on the proposals contained in the draft notification may forward the same in writing, for consideration of the [State Government / UT Administration / MoEFCC, GoI], within the period so specified to the [insert designation and address], or at email address,.....

Draft Notification

1. **WHEREAS**, the wetland / wetland complex, situated in village(s), tehsil(s), district(s) of state of , is considered to be critically significant for its ecosystem services and biodiversity values for the local communities and society at large;
2. **AND WHEREAS**, it is considered that for sustaining these values, the ecological character of wetland ecosystem needs to be maintained by regulating developmental activities within the wetland as well as within its zone of influence;
3. **NOW THEREFORE**, the [State Government, UT Administration / Government of India] declares that the said wetlands shall be covered under the provisions of Wetlands (Conservation and Management) Rules, 2017.

4. The extent of the wetland /wetland complex and its zone of influence is described in **Schedule I** of this notification;
5. Activities prohibited within the wetland and its zone of influence are listed in **Schedule II** of this notification. Such prohibitions shall not apply for areas designated under other Acts and Rules, and listed at para 1.2 (a), (b) and (c) of Schedule I. Relevant provisions of respective Acts and Rules shall apply in such areas.
6. Activities regulated within the wetland and its zone of influence, i.e. permitted only with permission of [State Government, UT Administration / Government of India] are listed in **Schedule III** of this notification. Request for permissions can be made to the [Designation, contact address and email]. Such regulations shall not apply for areas designated under other Acts and Rules, and listed at para 1.2 a), b) and c) of Schedule I. Relevant provisions of respective Acts and Rules shall apply in such areas.
7. Activities permitted within the wetland and its zone of influence are listed in **Schedule IV** of this notification. Such permissions however shall not apply for areas designated under other Acts and Rules, and listed at para 1.2 (a), (b) and (c) of Schedule 1. Relevant provisions of respective Acts and Rules shall apply in such areas.
8. The [State / UT Wetlands Authority] and the Ministry of Environment, Forest and Climate Change shall monitor the enforcement of the provisions of this notification.

By order

.....

Schedule 1: Location and Extent of Wetland / Wetlands Complex and its Zone of Influence

1.1 Wetland / wetlands complex

The wetland / wetlands complex, as delineated, extends within an area ofha within the geographical coordinates as under:

Extremity	North	South	West	East
Latitude				
Longitude				

The map of wetland / wetlands complex boundary is at **Map 1(a)**.

1.2 Boundary of area already designated under provisions of other Acts and Rules

The wetland / wetland complex boundary includes an area of ha designated under other Acts and Rules, with the geographical coordinates as under:

1.2 (a) Area designated under Indian Forest Act, 1927; Forest (Conservation) Act, 1980; State Forest Acts and amendments thereof

Extremity	North	South	West	East
Latitude				
Longitude				

1.2 (b) Area designated under Wildlife (Protection) Act, 1972 and amendments thereof

Extremity	North	South	West	East
Latitude				
Longitude				

1.2 (c) Area designated under the Coastal Regulation Zone Notification, 2011 and amendments thereof.

Extremity	North	South	West	East
Latitude				
Longitude				

The above areas should be clearly demarcated on the map of wetland / wetlands complex boundary i.e. **Map 1(a)**.

1.3 Zone of influence

The geographical coordinates of the zone of influence span an area of ha within the geographical coordinates as under:

Extremity	North	South	West	East
Latitude				
Longitude				

The map of zone of influence of the wetland is at **Map 1(b)**.

1.4 List of revenue villages / municipal areas falling fully or partly within the wetland is as under:

[Insert list]

1.5 List of revenue villages / municipal areas falling fully or partly within the zone of influence is as under:

[Insert list]

Schedule II: List of activities prohibited within wetland/ wetlands complex boundary

- a) Conversion for non-wetland uses including encroachment of any kind;
- b) Setting up of any industry and expansion of existing industries;
- c) Manufacture or/and handling or/and storage or/and disposal of construction and demolition waste covered under the Construction and Demolition Waste Management Rules, 2016; hazardous substances covered under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 or the Rules for Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms Genetically engineered organisms or cells, 1989 or the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008; electronic waste covered under the E-Waste (Management) Rules, 2016;
- d) Solid waste dumping;
- e) Discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements;
- f) Any construction of a permanent nature except for boat jetties within fifty metres from the mean high flood level observed in the past ten years calculated from the date of commencement of these rules; and,
- g) Poaching.

[Other activities, likely to have an adverse impact on the ecosystem to be inserted from the Brief Document]

Schedule III: List of activities regulated within the boundary of wetlands / wetlands complex and its zone of influence and for which prior approval of [State Government/ UT Administration/MoEF&CC] is required to be obtained

Activity	Restrictions	
	Within the boundary of wetland / wetlands complex	Within the zone of influence
[Insert from brief document]	[Insert from Brief Document]	[Insert from Brief Document]

Schedule IV: List of activities permitted within the boundary of wetlands / wetlands complex and its zone of influence

Activity	Levels and types not requiring permission	
	Within the boundary of wetland / wetlands complex	Within the zone of influence
[Insert from brief document]	[Insert from Brief Document]	[Insert from Brief Document]

Annex 4: Steps and format for developing Integrated Management Plan

1. Wetlands provide wide-ranging ecosystem services that support human well-being in a number of ways. Numerous plant and animal species depend on wetlands during different parts of their life-cycle. In order to ensure that wetlands continue to provide their ecosystem services and support biodiversity, it is essential that a well-defined strategy and actions are identified for their conservation and wise use. An Integrated Management Plan reflects a common understanding between various stakeholders on the management purpose, significant threats and constraints limiting conservation and wise use, opportunities and specific actions for addressing these threats, and mainstreaming wetlands within the wider developmental planning.
2. The Integrated Management Plan is formulated to serve the following purposes:
 - Identify the objectives of wetland management;
 - Identify the factors that affect or may affect the wetland;
 - Resolve conflicts between various stakeholders having an interest in the wetland;
 - Define monitoring requirements and research needs;
 - Help obtain financial resources for managing the wetland;
 - Enable communication between different wetland managers, organizations and stakeholders;
 - Ensure compliance with extant laws and regulation; and,
 - Demonstrate that management is effective and efficient
3. Systematic diagnosis of various wetlands features and factors influencing these features is essential to arrive at management objectives and actions. The following eight steps are recommended for developing an Integrated Management Plan:

Step 1: Preamble

4. The process for management planning must begin with an exercise of setting up an overarching preamble describing the rationale for application of human, technical and financial resources for the wetland. This is a concise policy statement that expresses the commitment of the State Government/ UT Administration for integrated management. The preamble can be developed on the basis of:
 - Importance of the wetland for the state / UT
 - Ways in which the wetlands conservation and wise use will contribute to conservation and developmental goals
 - Alignment with sectoral policies, directives and planning frameworks

Step 2: Description of wetland features

5. This step entails collation and synthesis of existing information on various site features so as to provide a basis for the identification of management objectives. A generic listing of management information needs and data requirements are presented in Table 1.

Table 1: Information Required for Description of Wetlands Features

Wetland feature	Management information needs	Data requirement
Wetland type and extent	<ul style="list-style-type: none"> ▪ Location ▪ Wetland type ▪ Wetland area ▪ Significant inter-annual changes in the wetland ▪ Major changes in the wetland extent in the last 20 – 30 years (if available) 	<ul style="list-style-type: none"> ▪ Geographical coordinates ▪ Land use and land cover data for the wetland (at least for two seasons, pre and post-monsoon) ▪ Historical map of the wetland (can be developed from the Survey of India toposheets) (if available)
Catchment/ Drainage Basin	<ul style="list-style-type: none"> ▪ Direct and indirect catchment of the wetland ▪ Geological and geomorphological characteristics that have led to the formation of the wetland ▪ Present land use and land cover of the catchment and their implication for wetland ▪ Major developmental activities in the catchment and their impacts on the wetland 	<ul style="list-style-type: none"> ▪ Geology and geomorphology ▪ Topography ▪ Drainage pattern ▪ Soil types ▪ Climate setting ▪ Land use and land cover change
Hydrological regimes	<ul style="list-style-type: none"> ▪ Major sources of water inflow and outflow from the wetland ▪ Major sources of sediments into the wetland ▪ Inundation regime ▪ Trends in water holding capacity and factors for the decline ▪ Water quality and pollution status ▪ Water use pattern within the wetland catchment and implication for wetland 	<ul style="list-style-type: none"> ▪ Water inflow, outflow and balance ▪ Inundation pattern ▪ Sedimentation ▪ Groundwater ▪ Water quality ▪ Water use within the basin
Biodiversity	<ul style="list-style-type: none"> ▪ Species richness ▪ Role of the wetland in the life-cycle of migratory species ▪ Invasive species and major contributing factors ▪ Major changes in species richness and habitat and factors thereof 	<ul style="list-style-type: none"> ▪ Species richness and diversity ▪ Biological significance of habitats ▪ Risk of species invasion

Ecosystem Services	<ul style="list-style-type: none"> ▪ Key ecological and hydrological characteristics required for the sustained provision of ecosystem services ▪ Ecosystem services trade-offs 	<ul style="list-style-type: none"> ▪ Provisioning services (direct wetland products, eg: food, fibre, water) ▪ Regulating services (the ability of an ecosystem to regulate hydrological regimes, influence micro-climate, reduce disaster risk, groundwater recharge) ▪ Cultural services (recreational values, cultural and religious norms and beliefs related to wetlands) ▪ Supporting services (Primary production and other ecosystem functions which enable wetlands to deliver all above ecosystem services)
Socioeconomics and livelihoods	<ul style="list-style-type: none"> ▪ Extent of dependence on wetlands for livelihoods ▪ Status of community infrastructure (such as water and sanitation) and implication for wetlands ▪ Livelihood vulnerability and relationship with changes in wetland resources ▪ Resource use conflicts ▪ Major shifts in livelihoods and implications for wetlands 	<ul style="list-style-type: none"> ▪ Demographic features of communities living in and around ▪ The contribution of wetland to income and employment ▪ Community resource use and management practices

6. Attention should be paid to the robustness of data and associated uncertainties thereof. It is recommended that the data on-site features and linked metadata are, to the extent possible, maintained in a spatial format to enable updation at a later stage as more information becomes available through monitoring programmes. The step should also include identification of data gaps.

Step 3: Evaluation of wetland features

7. This step entails an evaluation of information on status and trends on wetlands features (conducted in the previous step) to identify:

- a) Key wetland features that should be a priority for management planning
- b) Natural variability within these features, including describing thresholds, if any
- c) Threats that limit (or potentially limit) maintenance of wetlands features in the desirable state

8. Evaluation of wetland features can be done on the basis of criteria such as:

- Naturalness
- Rarity
- Criticality for ecosystem functioning
- Socioeconomic importance
- Requirement under the extant regulatory regime

9. The evaluation process will lead to narrowing down of the list of wetland features, for which threats may be identified. The management plan is a response to these threats. Through this process, it is

ensured that the plan does not merely focus on symptoms (for example, poor water quality) but on the root causes (in this case, ineffective sewage management in wetland catchments).

Step 4: Defining an institutional arrangement for wetland management

10. The purpose of this step is to evaluate whether existing institutional arrangements are sufficient and effective in addressing the threats to wetlands. Based on the gaps identified, an institutional arrangement for implementation of the management plan is developed.
11. This step includes:
 - a) Enlisting of government departments having programmes which impact (or have the potential to impact) wetlands features or threats on these features;
 - b) An analysis of laws and regulation related to wetland, access and use of wetland resources, biodiversity or any dimension;
 - c) Ownership, rights and privileges pertaining to wetlands;
 - d) Analysis of the role of CSOs and communities in wetlands management, with particular reference to their views, rights and capacities; and,
 - e) Gaps and challenges.
12. Based on the analysis, an institutional arrangement for wetlands management should be developed, clearly stating:
 - a) The nodal agency responsible for managing wetlands
 - b) Role of different government departments and mechanisms for inter-departmental coordination
 - c) Role of CSOs and communities
13. In line with the requirements of Wetlands (Conservation and Management) Rules, 2017, the following should be specified:
 - a) Activities prohibited within the boundary of wetlands;
 - b) Activities to be regulated within wetlands and zone of influence and regulation thresholds; and,
 - c) Activities permitted.

Step 5: Setting management objectives

14. This step involves the identification of site management objectives that need to be met so as to ensure that site features are maintained or improved. The management objectives may address the threats identified in the previous step, and issues relating to maintenance of wetland in a desired healthy state.
15. While defining objectives, the following may be considered:
 - a) **Measurability** – The objectives must be measurable so as to enable reporting on progress towards meeting them (for example, reducing silt load from the wetland catchment by xx %)
 - b) **Achievability** – The objectives must be achievable at least in the medium or long term. An objective that cannot be achieved can lead to an overall loss of sense of direction and misallocation of resources (for example, completely preventing nutrient enrichment in a wetland located in the intensive agricultural landscape is an unachievable objective, a much better proposition would be to reduce the current rate by xx%).

- c) **Indicative of purpose and not the process** – The objectives should not be prescriptively stating the way the objective should be achieved. It should ideally reflect the purpose of management (for example – afforestation in xxx ha is not an objective but a way to reduce siltation. Focusing just on afforestation then limits the use of other options for reducing siltation in a wetland).

Step 6: Developing a monitoring and evaluation plan

16. This section aims at outlining a monitoring and evaluation plan to enable assessment of overall management effectiveness and identify needs for mid-term correction.

Performance indicators

17. For each of management objectives, a set of performance indicators should be identified.

Table 2: Performance Indicators

Wetland feature	Management objective	Performance Indicator	Means of measurement
Area	Maintain wetland area	Wetland area which has not been altered for non-wetland usages	Area estimated from analysis of remote sensing images and ground truthing
Catchments	Reduction in silt load from catchment	Silt load	Monitoring pilot watersheds
Hydrological regimes	Reduce pollution	Biological Oxygen Demand, Chemical Oxygen Demand or any other water quality parameter assessed against a threshold	Water quality monitoring
	Enhance hydrological connectivity within wetlands complex	Area of wetland complex inundated during high floods period	Analysis of remote sensing data, and hydrological surveys
Biodiversity	Maintain and enhance habitat of waterbirds	Area of wetland used by waterbirds	Physical survey
	Reduce area under invasive macrophyte	Area under invasive macrophyte	Analysis of remote sensing images and ground truthing
	Maintain fish species richness	Fish species richness	Sampling

Socioeconomics	Reduce use of harmful fishing practices	Number of destructive fishing gear used in the wetland	Survey
	Reduce direct dependence of communities on capture fisheries	Reduction in % of income derived from wetland	Socioeconomic surveys

18. For each performance indicator, a baseline value at the beginning of management plan implementation may be specified. These values should be tracked over the course of management plan implementation to assess whether management objectives are being met.

Monitoring mechanism

19. Besides setting up performance indicators for the management plan, it is also essential to set up a monitoring system for the wetland to be able to assess changes in ecosystem condition over a period of time.

20. A generic listing of monitoring parameter, method and frequency is presented in the Table 3 below. Parameters marked with a single asterisk (*) sign are relevant for all wetlands and must form a part of the monitoring system. In addition to these, parameters marked with a double asterisk (**) are relevant for wetlands located in urban and peri-urban areas. Other parameters may be included based on the assessment of relevance and wetland contexts.

21. Photographic documentation (before, during and after management intervention) may also be maintained as part of monitoring process. Aquatic drones/ buoy-based sensor induced transmission for online data updating may be used for large wetlands, which will further help in enriching the management practices.

Table 3: Parameters for wetlands monitoring

Wetland feature	Monitoring parameter	Monitoring method	Recommended Frequency
Wetland extent	• Wetland area*	Remote sensing and ground truthing	Once in a year
	• Land use and land cover within the wetland area	Remote sensing and ground truthing	Once in a year
	• Connectivity with other adjoining wetlands, river / streams, coastal zone	Remote sensing and ground truthing	Once in a year

Wetland Catchment	<ul style="list-style-type: none"> • Climate 	Data from the nearest weather station	Monthly
	<ul style="list-style-type: none"> • Land use and Land Cover* 	Remote sensing and ground truthing	Once in 3 years
	<ul style="list-style-type: none"> • Total sediment yield 	Stream gauging station	Monthly
	<ul style="list-style-type: none"> • Total nutrient yield 	Stream gauging station	Monthly
Hydrological regimes	<ul style="list-style-type: none"> • Water inflow and outflow* 	Stream gauging station	Monthly
	<ul style="list-style-type: none"> • Waterholding capacity 	Bathymetric survey	Once in 5 years
	<ul style="list-style-type: none"> • Peak inundation 	Remote sensing and ground truthing	Once in 2 years
	<ul style="list-style-type: none"> • Dissolved Oxygen, Biological Oxygen Demand * 	Data from water quality sampling stations	Atleast monthly
	<ul style="list-style-type: none"> • Chemical Oxygen Demand ** 	Data from water quality sampling stations	Atleast monthly
	<ul style="list-style-type: none"> • Number of point sources discharging untreated sewage into the wetland ** 	Surveys	Once a year
Biodiversity and Habitat	<ul style="list-style-type: none"> • Population of major wetland dependent species groups (such as waterbirds, mammals etc.)* 	Mid-winter counts	Once a year
	<ul style="list-style-type: none"> • Habitat use by key species 	Physical surveys	Once a year
	<ul style="list-style-type: none"> • Number of migratory species using the wetland as a habitat 	Physical surveys	Once a year
	<ul style="list-style-type: none"> • Area under invasive macrophyte ** 	Physical surveys	Once a year
Ecosystem Services	<ul style="list-style-type: none"> • Annual Fish yield 	Sampling	Monthly samples collated into an annual estimate

	<ul style="list-style-type: none"> • Number of tourists 	Surveys	Monthly samples collated into an annual estimate
	<ul style="list-style-type: none"> • Volume of surface water abstracted from wetland 	Hydrographic surveys	Monthly samples collated into an annual estimate
	<ul style="list-style-type: none"> • Volume of groundwater recharged 	Hydrographic surveys	Once a year
	<ul style="list-style-type: none"> • Proportion of floodwaters stored in the wetland 	Hydrographic surveys	Once a year
	<ul style="list-style-type: none"> • Use of wetland for research and education 	Surveys	Annual estimate
Livelihoods	<ul style="list-style-type: none"> • Population living around the wetland* 	Surveys	Once every three years
	<ul style="list-style-type: none"> • Population depending on wetlands for livelihoods 	Surveys	Once every three years
	<ul style="list-style-type: none"> • Number of households around the wetland using safe sanitation practices 	Surveys	Once every three years
	<ul style="list-style-type: none"> • Participation of communities in wetlands management 	Surveys	Once every three years

Note: (i) The frequency, as above, is advisable for wetlands above 100 ha and is indicative in nature. The Wetland Authority may suitably modify based on logistics involved.

(ii) For wetlands less than say 100 ha, the frequency may be appropriately **divided**.

Step 7 - Developing an action plan

22. The last stage of the management planning process includes defining the action plan, or specific interventions that address the identified management objectives. A generic listing of activities is presented in Table 4. The projects need to be defined very clearly to ensure good implementation. While identifying activities for management of wetlands, the following must be kept in mind:

- a) Ecosystem-based interventions should be promoted as far as possible
- b) Engineering interventions in wetlands should be taken up in a limited manner, with impact assessments conducted for all major works
- c) Operations and maintenance of all structural works should be included in project design

d) Participation of local communities should be included to the extent possible

Table 4: Generic listing of activities for management of wetlands

Management Plan component	Activities	Key considerations
Boundary delineation and demarcation	Boundary mapping and delineation	Site boundaries should be established with reference to inundation regimes, soil conditions and vegetation types. Landscape connectivity should also be taken into account when wetlands exist in patches. All activities should be completed within the first year.
	Removal of encroachments	Boundaries should be notified and legally protected wherever possible. All activities should be completed within the first year.
	Shoreline management	Mostly required for wetlands in urban and peri-urban setting. For stabilizing bunds of wetlands, naturalization of slopes using vegetative measures should be preferred. Development of promenade for urban lakes can be included based on an evaluation of natural drainage and shoreline ecosystem niches.
Catchment conservation	Afforestation and aided regeneration	Catchment conservation plans should be developed at watershed scales and based on Joint Forest Management approaches. Native species should be used for forestry operations. Pilot watershed should be periodically monitored to assess changes in soil moisture regimes. Livelihood interventions for catchment communities aimed at reducing dependence on wood as an energy source should be included as appropriate.
	Small scale engineering measures (gully plugging, check dams, gabion structures etc.)	Community participation in design, implementation and post-project maintenance of structures should be ensured.
Water management	Selective dredging and desilting to improve hydrological connectivity	Dredging to be used only selectively, and be based on assessments of bathymetric profile and species interactions. For inflowing channels, dredging can be used to improve water inflow.
	Interception, diversion and	Mostly recommended for wetlands in the urban and peri-urban setting.

Management Plan component	Activities	Key considerations
	treatment of point sources of pollution	<p>Provision of comprehensive sanitation and safe drinking water coverage to communities living around the wetlands may be ensured.</p> <p>Engineering (STPs) as well as biological options (constructed wetlands) should be evaluated for application. Planning for Operation and Maintenance expenses should be included for all engineering structures.</p>
	Construction and operation of hydraulic structures for maintenance of water regimes and flood control	For each significant structure, environmental impact assessments should be carried out prior to construction.
	Balancing water allocation for human and ecological purposes	Environmental flows for wetlands, hydrological regimes of which are affected by hydraulic structures, should be assessed and implemented in consultation in water managers
Biodiversity conservation	Habitat evaluation and improvement	Until specifically desired, plantation of terrestrial plant species in wetlands should be avoided.
	Improvement and maintenance of migratory routes	Community groups should be involved in habitat monitoring and maintenance of migratory routes
	Maintenance of breeding and spawning grounds for key species	Community groups should be involved in the maintenance of breeding and spawning grounds
	Management of invasive species	<p>A mix of mechanical and biological methods for controlling species invasion should be used.</p> <p>For plant invasives, economic utilization along with physical removal should be included.</p>
Sustainable resource development and livelihood improvement	Microenterprise development for reducing dependence on wetland resources for livelihoods	Identification of micro-enterprise development options should be based on an assessment of community livelihoods, capacities, resources and market linkages.
	Sustainable fisheries development	Only capture based fisheries techniques should be promoted in natural wetlands

Management Plan component	Activities	Key considerations
		Options for improving culture fisheries in areas around wetlands may be included to reduce dependence on capture fisheries
	Sustainable agriculture development	Organic farming practices in immediate catchments should be included to minimize nutrient enrichment in wetland.
Institutional development	Setting regulatory regimes	Site regulation should be harmonized with national and State level regulations. Local customary self-regulation which supports maintenance of conservation values should be promoted
	Development of monitoring and evaluation system	Comprehensive monitoring and evaluation mechanism for hydrological, ecological, socio-economic and institutional features should be made a part of the management system Involvement of stakeholders in monitoring should be encouraged.
	Communication and Outreach	Increasing awareness on values and functions of wetland should be made an integral part of the management plan. The use of television, print, electronic and social media for awareness generation and outreach may be included as appropriate. Developing and disseminating dos and donts in wetlands for general public may also be considered.
	Research	For each site, key research areas to support management needs should be identified and included in the management plan

Step 8: Developing budget and financing plan

23. A complete costing of the Integrated Management Plan item wise may be done for the entire tenure of the plan using the existing norms of the State and central government, as may be the case. Year wise requirement of funds for various items of work/ activities, band PERT charts for the works/activities should be prepared. Summary of Cost Estimates and year-wise breakup of the requirement of funds may be presented in the formats given below:

Table 5: Summary of budget

S. No.	Management Plan component	Budget

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Table 6: Year wise breakup of requirement of funds

S. No.	Activity	Funds Required in Yr I	Funds Required in Yr II	Funds Required in Yr III	Funds Required in Yr IV	Funds Required in Yr V	Total

Table 7: year wise breakup of requirement of funds

S. No.	Total Budget	Funds from Central Government Scheme (Scheme Name)	Funds from State Government (Scheme Name)	Funds from other donors (Project and donor name)	Funds from private sector (Name of the agency)	Funds available from convergence sources	Funds required to be raised
	(a)	(b)	(c)	(d)	(e)	(f) = (b) + (c) + (d) + (e)	(g) = (a) - (f)

Format for compiling Integrated Management Plan

24. The management plan should have a cover sheet with the following information:

- Wetland Name
- Wetland Area (in ha)
- Location: (District(s), State / UT)
- Area of the direct catchment (in ha)
- Name of the nodal agency for management plan implementation
- Management plan period
- Date on which approval of State / UT Wetland Authority was obtained
- Total budget
- Total funds available from convergence sources

25. The management plan may be compiled in the following eight chapters:

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
1. Introduction	1.1 Rationale for management planning	Describe the importance of wetland, ways in which wetlands conservation and wise use will contribute to state conservation and development goals and alignment with state and central government policies, directives and planning frameworks	Step 1
	1.2 Terms of reference	Enlist the overall terms of reference for the management plan	Step 1
	1.3 Approach and Method	Provide an overview of approach (ways in which the recommended steps have been used) Describe the data sources and research carried out for management planning if any	Step 1
2. Description of wetlands features	Description of wetland features <ul style="list-style-type: none"> • Location and extent • Wetland catchments • Hydrological regimes • Biodiversity • Ecosystem Services • Socioeconomics and livelihoods 	Describe wetland features. As far as possible, present the data in maps.	Step 2
3. Evaluation of wetlands features	Evaluation <ul style="list-style-type: none"> • Priority wetland features that need to be maintained and thresholds thereof • Threats 	From the wetlands features described in the previous section, enlist the priority wetlands features. Describe the threats that adversely affect the priority wetland features.	Step 3

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
4. Institutional arrangements	4.1 Review of existing arrangements <ul style="list-style-type: none"> • Key organizations and programmes • Rules and regulations • Role of civil society and community based organizations 	Provide an overview of the current institutional arrangements in the context of wetlands management	Step 4
	4.2 Gaps	Discuss why the current institutional arrangements are insufficient in ensuring wetlands conservation and wise use.	Step 4
	4.3 Proposed arrangements for wetland management	Propose institutional arrangement for wetland management, which specific focus on a) nodal agency, b) role of various departments and agencies and coordination mechanism, and c) the role of civil society and communities. Develop an organogram for management plan implementation.	Step 4
5. Setting Management Objectives	5.1 Goal and purpose	Provide a statement of the overall goal that the management plan seeks to achieve	Step 5
	5.2 Benefits (ecological as well as societal)	Summarize the ecological and economic benefits that are expected from management plan implementation	
	5.3 Management objectives	Enlist the specific objectives	Step 5
	5.4 Strategies	Describe strategy(ies) for achieving each of the management objectives	Step 5
6. Monitoring and evaluation plan	6.1 Monitoring strategy	Present an overview of monitoring the wetland, and management plan implementation	Step 6
	6.2 Monitoring parameters, frequency and responsibility	Describe the monitoring parameters, the frequency of monitoring and the agency that will be responsible for monitoring	Step 6

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
	6.3 Institutional design	Describe how coordination between different monitoring agencies will be achieved.	Step 6
	6.4 Infrastructure and human resources design	Discuss the infrastructure and human resource requirement for implementing the management plan as far as possible, including local universities, research organizations and NGOs in wetlands monitoring	Step 6
	6.5 Reporting	Discuss the frequency in which reporting shall be done and the responsible agency.	Step 6
	6.6 Review and adaptation	Discuss how the monitoring outcomes will be used to adapt management	Step 6
7. Developing an Action Plan	7.1 Component wise activities linked with management objectives	Generic listing of activities indicating: <ul style="list-style-type: none"> • What will be done? • Where will the activity be done? • What is the priority for the activity? 	Step 7.1
	7.2 Components for consideration for support under National Plan for Conservation of Aquatic Ecosystems (NPCA)	For all activities eligible for support under NPCA indicate: <ul style="list-style-type: none"> • Why is the activity important? • How will the activity be implemented? (include intermediate steps, technical specifications and relevant drawings, as may be the case) • Where will the activity be implemented? • Who will implement the activity? • What are the quantitative targets to be met? 	Step 7.2

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
8. Budget and activity phasing	8.1 Activity linked budget	<p>Present a summary budget in line with Table 5</p> <p>Provide details of funding available from convergence sources in line with Table 6</p> <p>Provide detailed budget for NPCA in line with Table 7</p>	Step 8
	8.2 Time planning	Present a monthly Gantt Chart for management plan implementation	Step 8

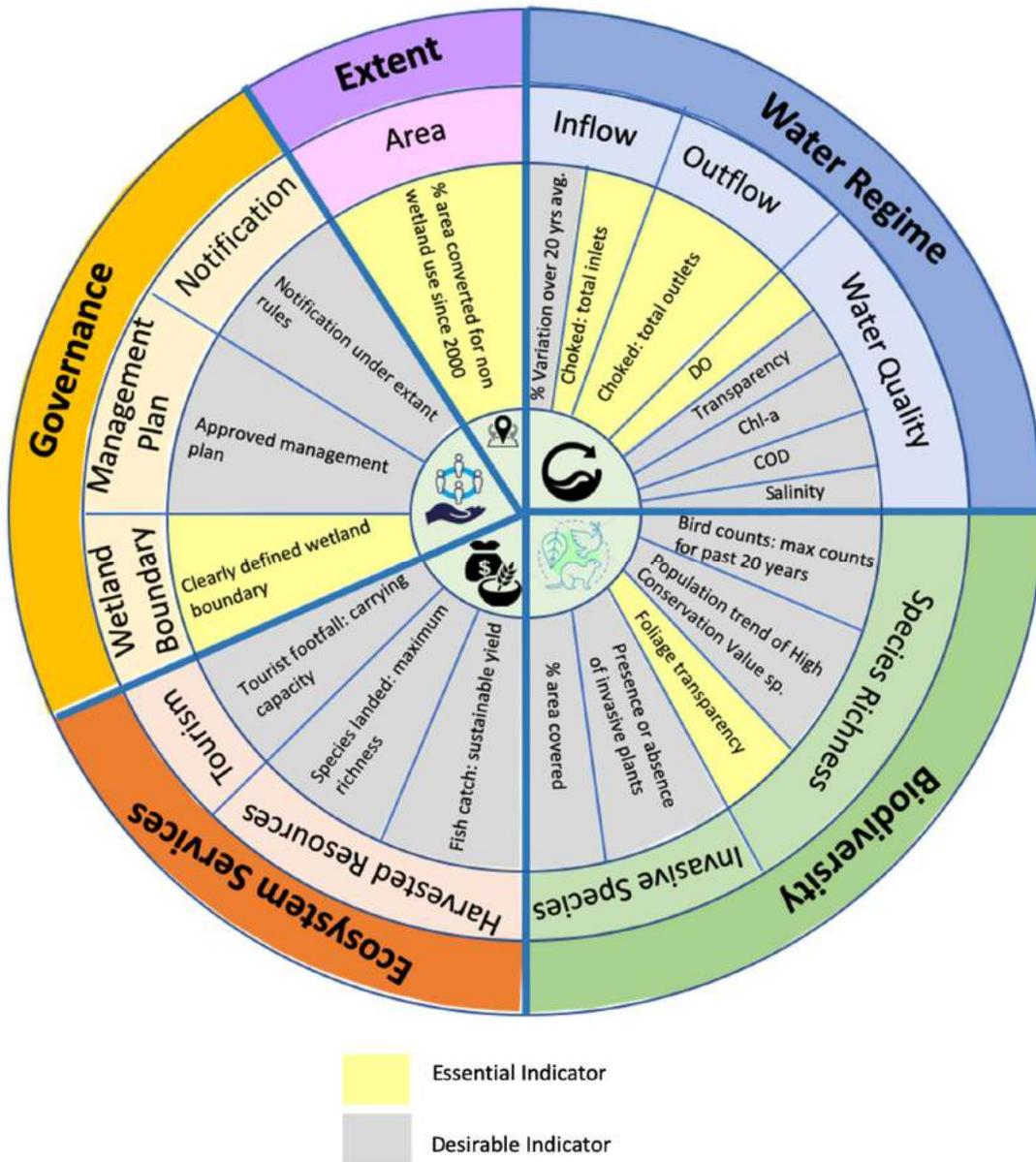
Checklist for submission of Integrated Management Plan

- Approved by the State Govt./ UT Administration/ State Wetlands Authority/ UT Wetlands Authority (minutes of meeting to be enclosed)
- Forwarding letter states -commitment of the State Government/ UT for providing their share of budget (supporting document indicating concurrence to be enclosed)
- Integrated Management Plan has a cover sheet providing details on Wetland, catchment area, implementing agency, total budget and fund requested from NPCA
- Brief Document is enclosed with the management plan (as per Annex V)
- Wetlands map is provided in a standard GIS format
- Map of zone of influence is provided in a standard GIS format.
- Management plan is aligned with recommended format of eight chapters
- All activities proposed to be funded by the NPCA fall within the list of core and non-core activities
- Necessary drawings and technical specification for major activities is provided.
- Core activities have been allocated not less than 75% of the budget
- Non- core activities have been allocated not more than 25% of the budget
- Budget has been prepared with reference to an approved Schedule of Rates

Annex 5: Format for reporting status of notified wetlands

1. Wetlands / Wetlands Complex Name:		Report Date:		
		Reporting Officer:		
2. Wetlands status				
2.1 Area: current- ; in notification -				
2.2 Water inflow and outflow (attach data in an annex)				
2.3 Water quality (attach data in an annex)				
2.4 Status of major threats				
(such as encroachment, linear infrastructure development, destructive fishing practices, untreated sewage discharge, solid and liquid waste dumping, dumping of hazardous waste, invasive species, habitat modification / destruction/alteration or any other that has or may induce an adverse change in wetland ecological character)				
3. Status of enforcement of the regulatory regime				
Activity regulated	Whether regulation complied with?	Violation if any?	Where has the violation been reported?	Action taken
4. Implementation of the management plan				
Management Plan Component and Activity Planned for the period	Progress of implementation during the period	Nodal agency	Remarks (successes and challenges)	

Proforma – Health Card



- Essential indicators are Area of the Wetland, Total Inlets, Total Outlets, Dissolved Oxygen, Foliage Transparency and clearly defined Wetland Boundary.
- Rest are desirable.

S.No	Indicator	Sub - Indicator	Part of Sub-indicator (Essential indicator)	Desired value	RANKS				
					A	B	C	D	E
1	Extent	Area	% of area covered for non-wetland use since 2000	0%	0%	1-5%	6-10%	11-20%	More than 20%
2	Water Regime	Inflow	Ratio of Choked total inlets	Less than 0.2	0-0.2	0.3-0.4	0.5-0.6	0.7-0.8	More than 0.8
		Outflow	Ratio of Choked total outlets	Less than 0.2	0-0.2	0.3-0.4	0.5-0.6	0.7-0.8	More than 0.8
		Water Quality	Dissolved Oxygen	More than 4 mg/l	80-100% of the sample meets the desired level	60-80% of the sample meets the desired level	40-60% of the sample meets the desired level	20-40% of the sample meets the desired level	Less than 20% of the sample meets the desired level
3	Biodiversity	Species Richness	Foliage transparency	Less than 10%	Less than 10%	11-20%	21-30%	31-40%	41% and above
		Invasive Species							
4	Governance	Wetland Boundary	Clearly defined wetland boundary	Wetland map Prepared Approved by State Wetland Authority.	Wetland map Prepared Approved by State Wetland Authority.	Wetland map Prepared and under consideration of SWA	Wetland map Prepared but not placed before SWA	Wetland map under preparation	No wetland map
		Management Plan							
		Notification							

RANKS	ASSIGNED WEIGHT
A	1
B	0.8
C	0.6
D	0.4
E	0.2

So, if out of the 6 essential indicators mentioned above, if as an example we take that 3 are in rank A, 2 in rank B and 1 in rank C then the calculation shall be as follows:

Total weight of the indicators in rank A =3 (no. of indicators in the rank) * its assigned weight i.e. 1 for rank A, thereby total of 3.

Total weight of the indicators in rank B=2 (no. of indicators in the rank) * its assigned weight i.e. 0.8 for rank B, thereby total of 1.6.

Total weight of the indicators in rank C=1 (no. of indicators in the rank) * its assigned weight i.e. 0.6 for rank C, thereby total of 0.6.

Now, to calculate healthscore, the total weight of indicators is added i.e. $3+1.6+0.6=5.2$ and is divided by total number of indicators i.e. 6, thereby

The wetland score is $5.2/6=0.86$

Doyang Reservoir Wetland

Wokha district, Nagaland | Area: 1532 ha

Management Authority: Dept of Environment Forest and Climate Change, Government of Nagaland

Values and Benefits



Ground Water Recharge



Food for humans-Fishes



Nutrient cycling



Water for irrigation

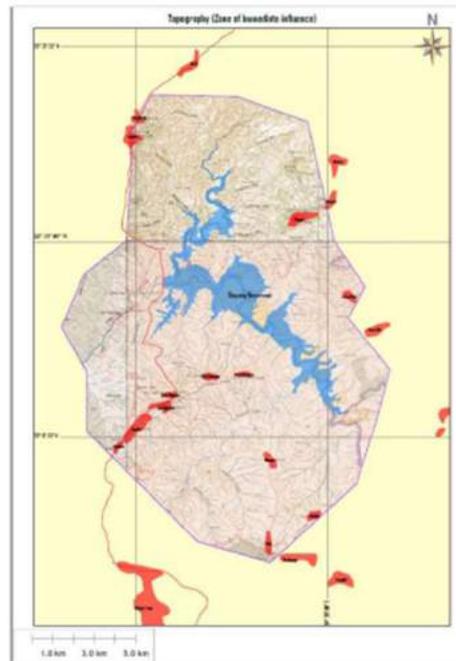


Nature based Tourism



Supports Biodiversity

Significance
Low Medium High



Significance
Low Medium High

Threats



Encroachment



Siltation



Unsustainable fishing



Pollution

Species richness

90 Fishes

65 Plants

Species of global conservation significance

Notable	Critically endangered	Endangered	Vulnerable
Black Softshell Turtle, Indian Peacock softshell Turtle, Amur Falcon	Black Softshell Turtle	Burmese Mountain Tortoise, Asiatic Elephant, Asiatic Wild dog, Bengal Slow Loris	Indian Peacock softshell Turtle

Sanjay Lake

Delhi, NCT | Area: 17 ha

Management Authority: Delhi Development Authority

Values and Benefits



Flood control



Carbon Sink



Nutrient Retention



Scientific Study



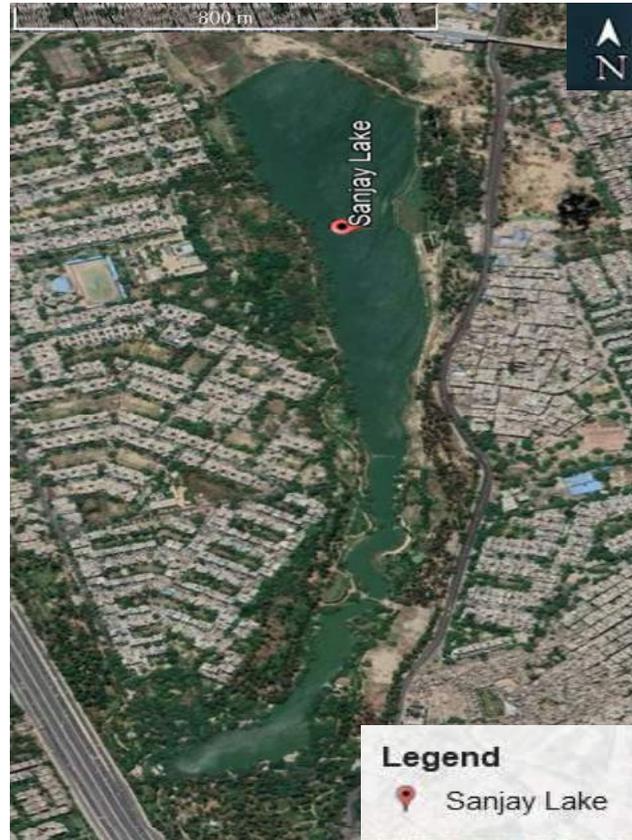
Nature based Tourism



Supports Biodiversity

Significance

Low Medium High



Threats



Alteration of Hydrological regime



Encroachment



Pollution



Invasive species

Significance

Low Medium High

Species richness

17 Birds
12 Plants

Notable species of global conservation significance

Painted Stork, Common Pochard, River Lapwing, Red – Wattle Lapwing

Pallikaranai Wetlands

Chennai, Tamil Nadu | Area: 834 ha
Management Authority: : Tamil Nadu Forest Department

Values and Benefits



Flood control



Carbon Sink



Nutrient Retention



Scientific Study



Nature based Tourism



Supports Biodiversity



Threats



Encroachment



Alteration of Hydrological regime



Invasive species



Pollution

Significance
Low Medium High

Species richness

165 Birds
50 Fishes
10 Mammals
31 Reptiles and Amphibians
114 Plants

Species of global conservation significance

Notable

Purple swamphen,
Black winged Stilt,
Spot Billed Pelican,
Black Head Ibis

Endangered

Black Bellied Tern,
Great Knot

Significance
Low Medium High

Ansupa Lake

Cuttack district, Odisha | Area: 231 ha
Management Authority: Chilika Development Authority

Values and Benefits



Water for domestic use



Food for humans-Fishes



Ground Water Recharge



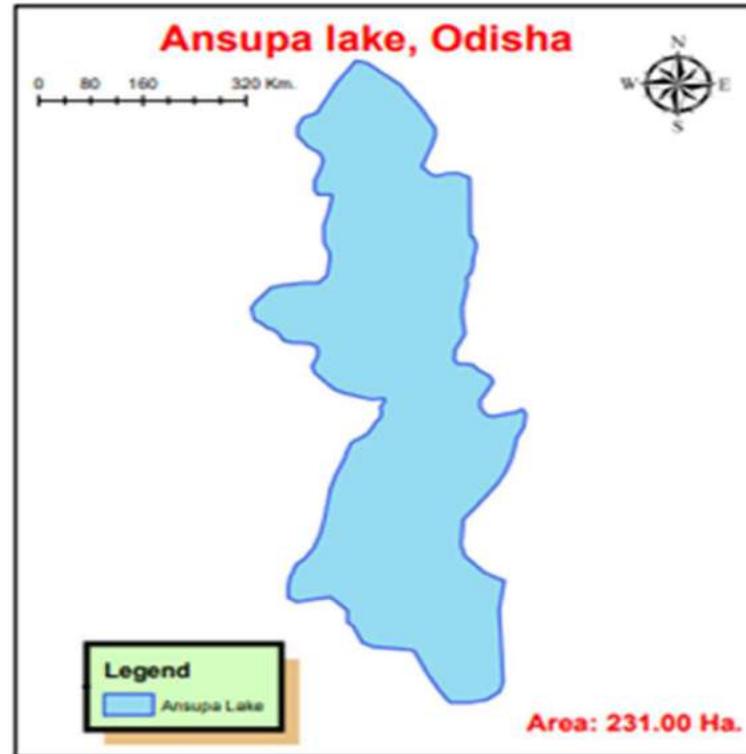
Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



Threats



Encroachment



Invasive species



Alteration of Hydrological regime



Pollution



Unsustainable tourism

Significance

Low Medium High

Species richness

85 Birds
40 Fishes
47 Plants

Species of global conservation significance

Notable	Endangered	Vulnerable
Indian Skimmer, Black-Bellied Tern, River Tern	Magur, Indian Skimmer, Black-Bellied Tern, River Tern	Amur Carp, Freshwater Shark

Significance

Low Medium High

Bhimtal Lake

Nainital District, Uttarakhand | Area: 48 ha
Management Authority: Uttarakhand State Wetland Authority

Values and Benefits



Ground Water Recharge



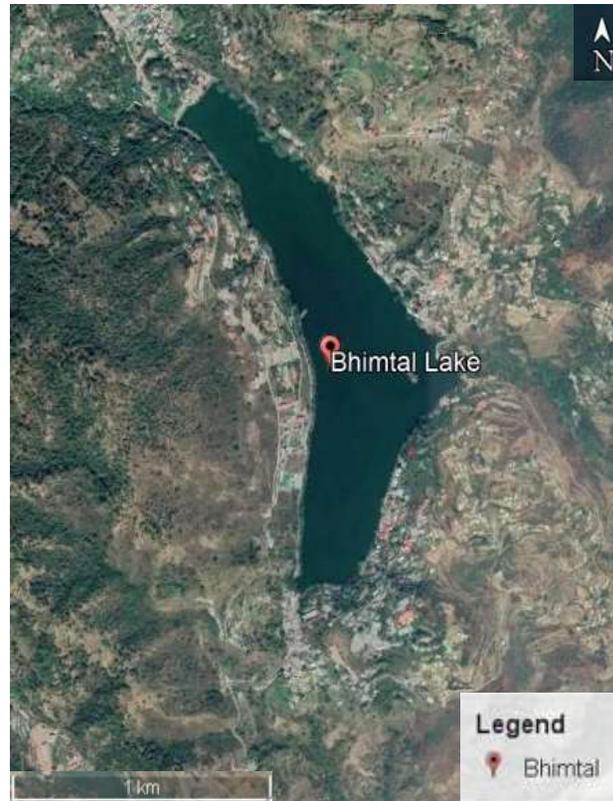
Spiritual and inspirational value



Nature based Tourism



Supports Biodiversity



Threats



Alteration of Hydrological regime



Siltation



Unsustainable tourism



Pollution

Significance
Low Medium High

Species richness

200+ Birds
15 Fishes

Species of global conservation significance

Notable

Egyptian vulture, Steppe eagle, Crested serpent eagle, Indian cormorant, Mahaseer

Endangered

Egyptian vulture, Steppe eagle

Significance
Low Medium High

Nainital Lake

Nainital District, Uttarakhand | Area: 49 ha
Management Authority: Uttarakhand State Wetland Authority

Values and Benefits



Ground Water Recharge



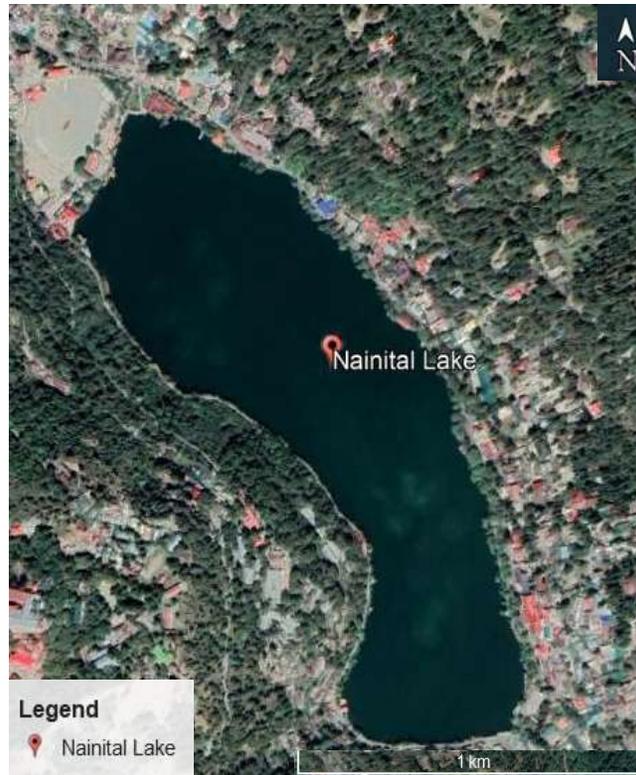
Spiritual and inspirational value



Nature based Tourism



Supports Biodiversity



Threats



Alteration of Hydrological regime



Siltation



Unsustainable tourism



Pollution

Significance
Low Medium High

Species richness

200+ Birds
5+ Fishes
27+ Plants

Species of global conservation significance

Notable

Kalij pheasant,
Himalayan griffon,
Crested serpent eagle,
Steppe eagle

Endangered

Steppe eagle

Significance
Low Medium High

Tsongmo Lake

East Sikkim district, Sikkim | Area: 22 ha

Management Authority: Forests, Environment and Wildlife Management Department

Values and Benefits



Ground Water Recharge



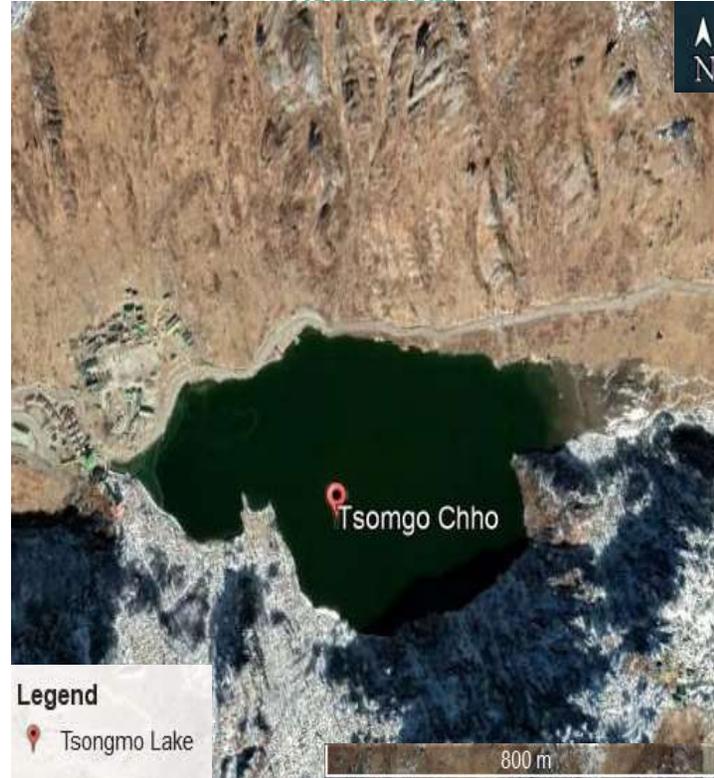
Spiritual and inspirational value



Nature based Tourism



Supports Biodiversity



Threats



Unsustainable tourism

Significance
Low Medium High

Species richness
230 Birds
13+ Mammals

Species of global conservation significance

Notable	Vulnerable
Blood pheasant, Fire-tailed sunbird, Musk deer, Siberian weasel	Wood snipe, Greater spotted eagle

Significance
Low Medium High

Hirakud Reservoir

Sambalpur District, Odisha | Area: 70000 ha
Management Authority: Chilika Development Authority

Values and Benefits



Water for domestic use



Food for humans-Fishes



Ground Water Recharge



Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity

Threats



Encroachment



Siltation



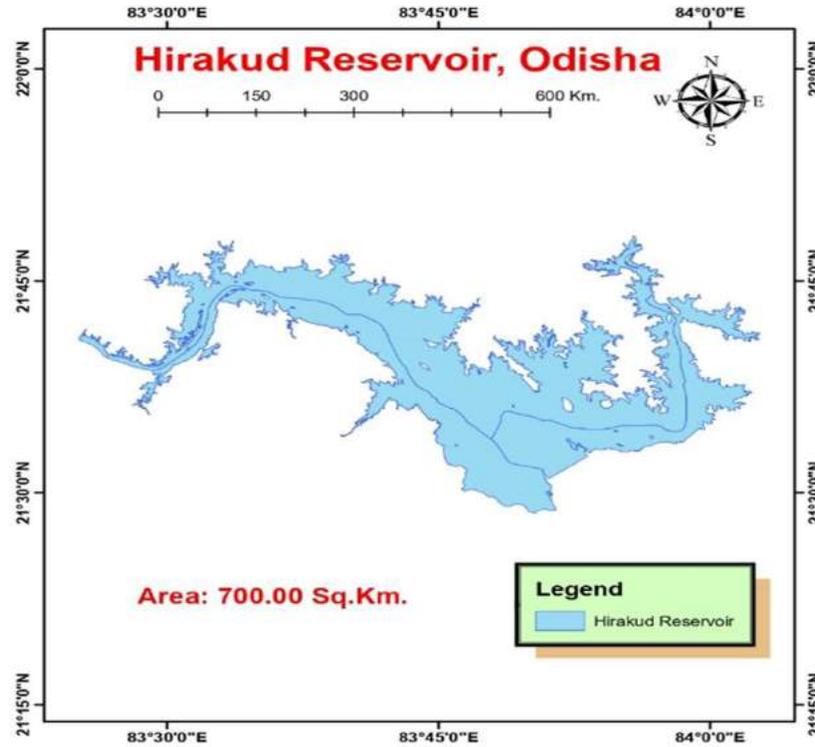
Invasive species



Alteration of Hydrological regime



Unsustainable tourism



Species richness	Species of global conservation significance		
	Notable	Endangered	Vulnerable
130 Birds 40+ Fishes	Northern Pintail, Common Pochard, Common Teal	Black bellied Tern, White winged Duck, Pallas`s Fish Eagle, Indian narrow headed softshell Turtle	Lesser Adjutant, Sloth Bear

Significance



Significance



Satkosia Gorge

Cuttack District, Odisha | Area: 96387 ha
Management Authority: Chilika Development Authority

Values and Benefits



Water for domestic use



Food for humans-Fishes



Ground Water Recharge



Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



Threats



Alteration of hydrological regime



Unsustainable tourism



Invasive species



Siltation

Species richness

- 283 Birds
- 38 Mammals
- 27 Reptiles
- 183 Fishes
- 910 Plants

Species of global conservation significance

Notable	Critically endangered	Endangered	Vulnerable
Bar headed Geese, Brahminy Duck, Asian Elephant, Tiger	Red-crowned roofed turtle, Indian Gharial	Indian Skimmer, Black Bellied Tern	Indian River Tern

Tampara Lake

Ganjam District, Odisha | Area: 301 ha
Management Authority: Chilika Development Authority

Values and Benefits



Water for domestic use



Food for humans-Fishes



Flood buffer



Ground Water Recharge



Nature based Tourism



Supports Biodiversity



Threats



Alteration of hydrological regime



Pollution



Invasive species



Siltation



Unsustainable tourism

Significance
Low Medium High

Species richness

79 Birds
23 Fishes

Species of global conservation significance

Notable	Vulnerable
Black capped Kingfisher, Lesser Whistling Duck, Red Wattled Lapwing, Black headed Ibis	Common Pochard, Amur Carp

Significance
Low Medium High

Pumlen

Thoubal District, Manipur | Area: 8440 ha
Management Authority: Loktak Development Authority

Values and Benefits



Water for irrigation



Food for humans-Fishes



Ground Water Recharge



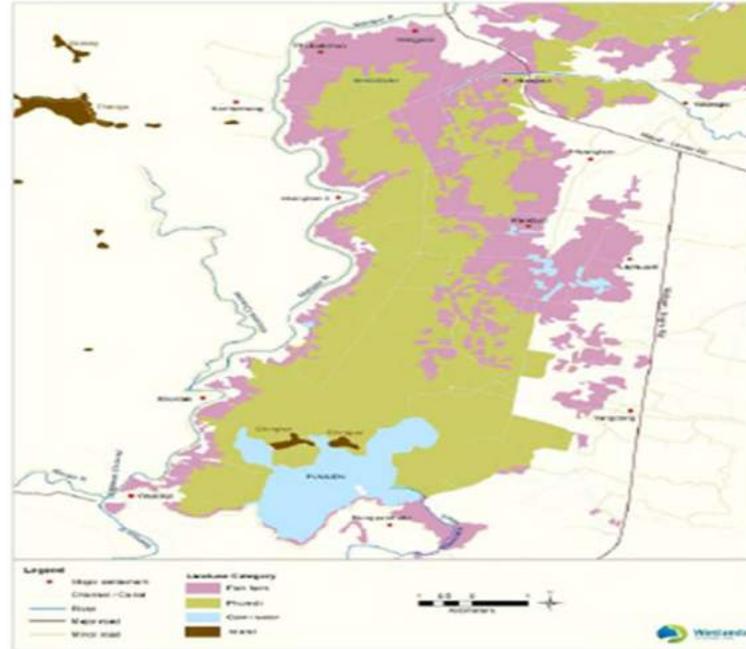
Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



Threats



Alteration of hydrological regime



Encroachment



Invasive species



Siltation

Species richness

106 Birds
48 Fishes
68 Reptiles and amphibians
20 Mammals

Species of global conservation significance

	Notable	Endangered	Vulnerable
	Sangai, Common Pochard	Manipur Brow Antlered Deer, Hog Deer, Dhole, Red Jasper Barb, Keelad Box Turtle	Lesser Adjutant, Sarus Crane, Common Pochard, Hooded Crane, Common Carp, Amboina Box Turtle, King Cobra, Burmese Python

Significance

Low Medium High

Significance

Low Medium High

Umiam

Ri Bhoi District, Meghalaya | Area: 10100 ha
 Management Authority: Meghalaya State Wetland Authority

Values and Benefits



Water for irrigation



Food for humans-Fishes



Ground Water Recharge



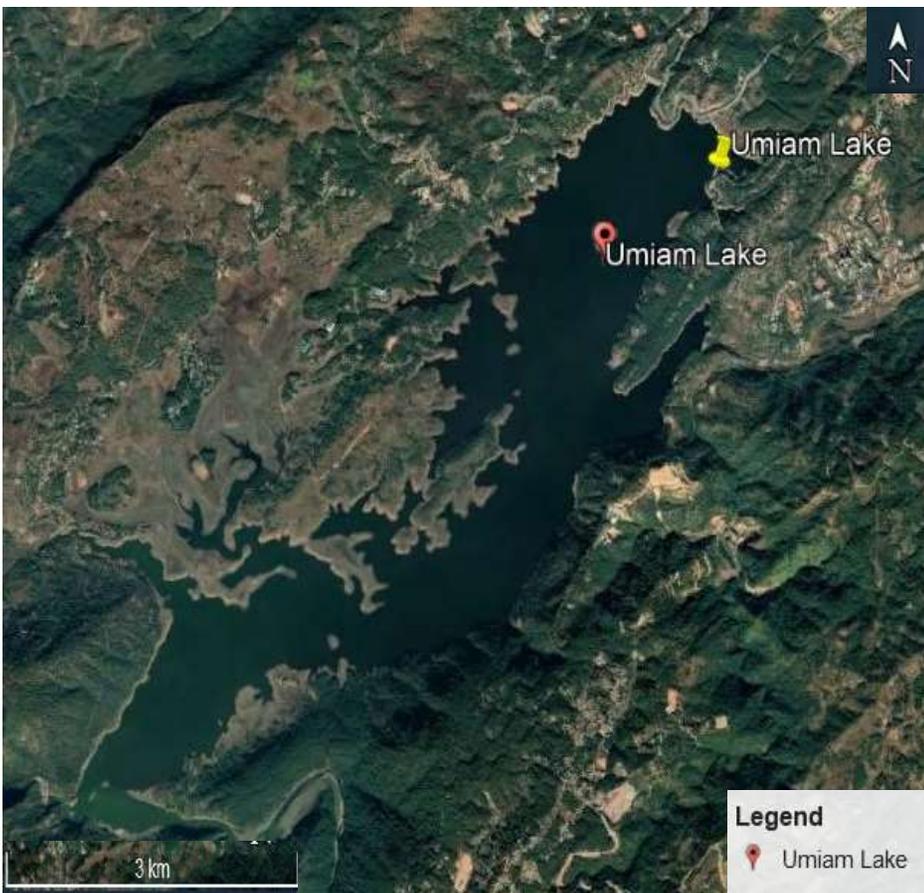
Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



Threats



Alteration of hydrological regime



Unsustainable tourism



Invasive species



Siltation



Encroachment

Significance
 Low Medium High

<p>Species richness</p> <p>40 Birds 27 Fishes</p>	<p>Notable species of global conservation significance</p> <p>Northern Shoveler, Gadwall</p>
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Significance
 Low Medium High

Ranganathittu Bird Sanctuary

Mandya District, Karnataka | Area: 67 ha
Management Authority: Karnataka Forest Department

Values and Benefits



Ground Water Recharge



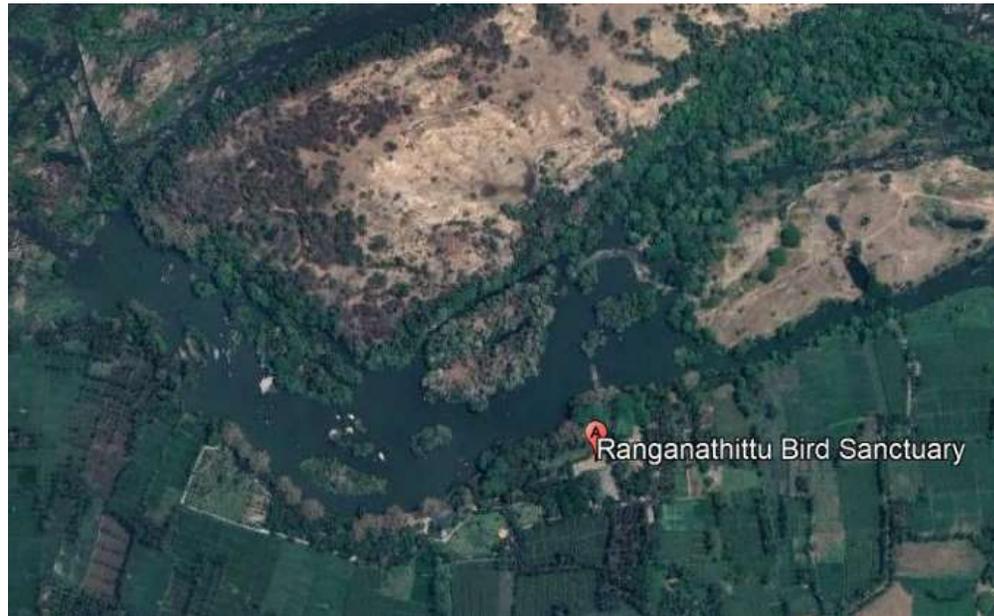
Flood buffer



Nature based Tourism



Supports Biodiversity



Threats



Alteration of hydrological regime



Unsustainable tourism



Invasive species



Pollution

Significance

Low Medium High

Species richness

127 Birds
13 Fishes

Species of global conservation significance

Notable

Painted Stork,
Common Pochard,
River Lapwing, Red –
Wattled Lapwing

Critically Endangered

Oriental white backed
Vulture

Vulnerable

Greater Spotted Eagle

Significance

Low Medium High

Tamdil

Saitual District, Mizoram | Area: 4 ha
Management Authority: Department of Environment, Forests & Climate Change

Values and Benefits



Water for irrigation and domestic use



Food for humans-Fishes



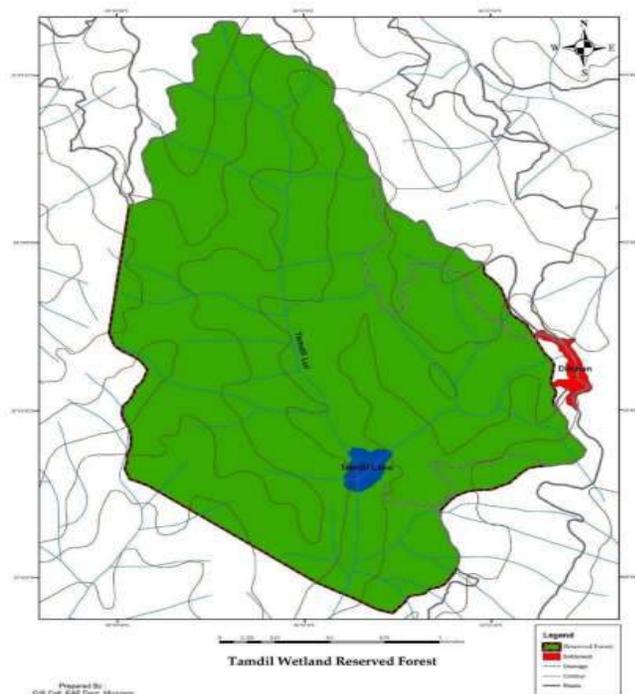
Ground Water Recharge



Spiritual and inspirational values



Supports Biodiversity



Threats



Invasive species



Pollution

Species richness

120 Birds

397 Plants

21 Fishes

43 Reptiles and Amphibians

16 Mammals

Notable species of global conservation significance

Capped langur, Leptolalax tamdil

Significance

Low Medium High

Significance

Low Medium High

Sirpur Wetland

Indore District, Madhya Pradesh | Area: 165 ha
Management Authority: Indore Municipal Corporation

Values and Benefits



Water for domestic use



Ground Water Recharge



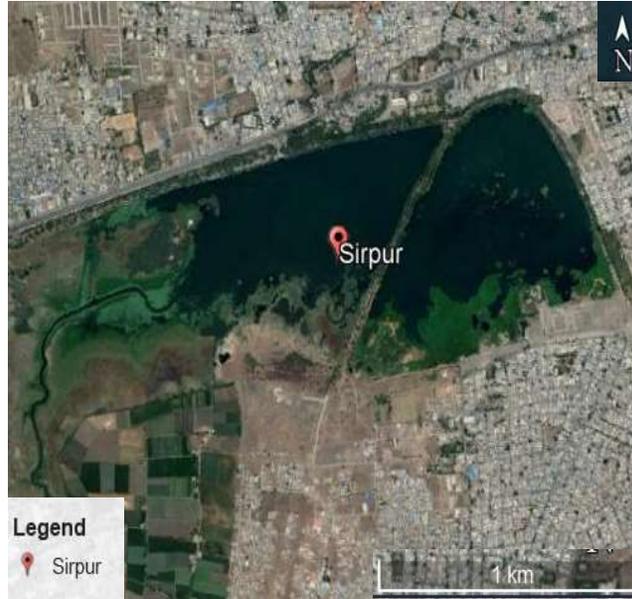
Flood control



Supports Biodiversity



Spiritual and inspirational values



Threats



Encroachment



Pollution



Invasive species

Significance
Low Medium High

Species richness

19 Birds

Species of global conservation significance

Notable	Endangered	Vulnerable
Sarus crane, Yellow wattled lapwing	Egyptian vulture	Sarus crane

Significance
Low Medium High

Yashwant Sagar

Indore District, Madhya Pradesh | Area: 2650 ha
Management Authority: Indore Municipal Corporation

Values and Benefits



Water for domestic use



Food for humans-Fishes



Ground Water Recharge



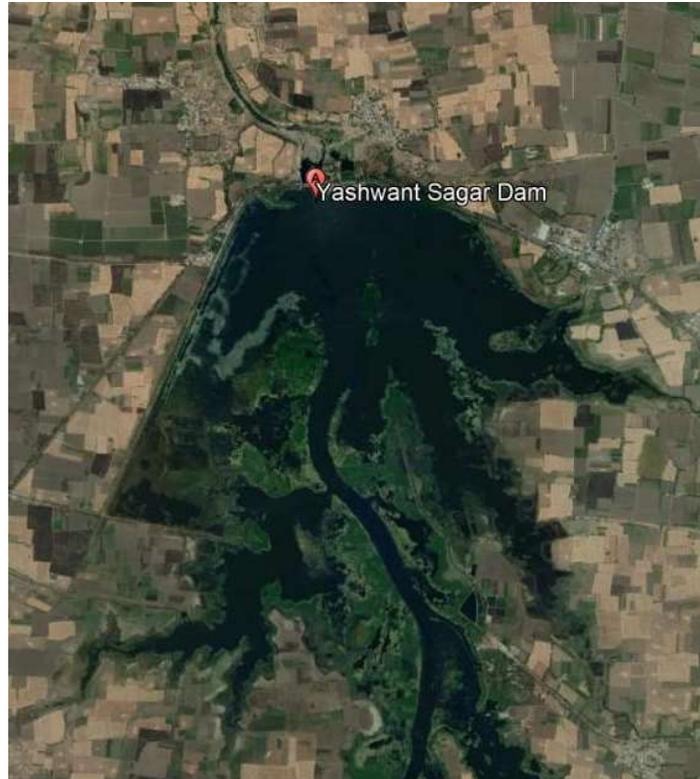
Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



Threats



Pollution



Siltation



Unsustainable fish harvest



Unsustainable tourism

Significance
Low Medium High

Species richness

19 Birds
39 Fishes

Species of global conservation significance

Notable	Vulnerable
Sarus crane	Sarus crane

Significance
Low Medium High

Sakhya Sagar

Shivpuri District, Madhya Pradesh | Area: 157 ha
Management Authority: Madhya Pradesh Forest Department

Values and Benefits



Ground Water Recharge



Scientific Study



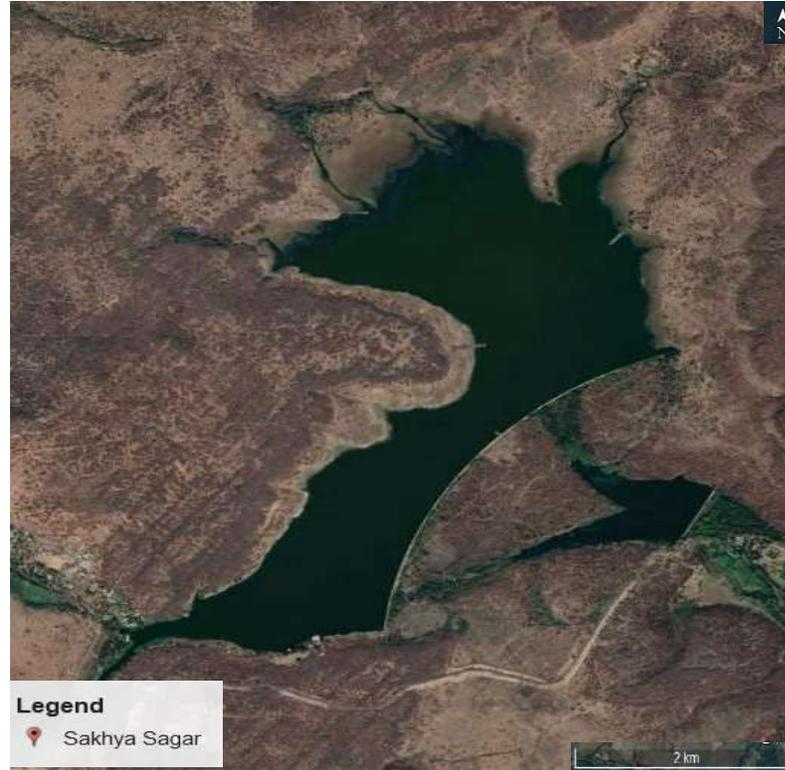
Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



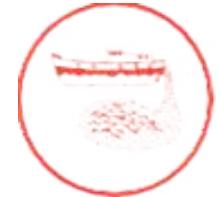
Threats



Pollution



Encroachment



Unsustainable fish harvest

Significance

Low Medium High

Significance

Low Medium High

Species richness

73 Birds
19 Fishes

Species of global conservation significance

	Notable	Endangered	Vulnerable
	Sarus crane, Common pochard, Bar-headed goose	Indian skimmer	River tern, Sarus crane, Common pochard, Bar-headed goose, Lesser adjutant

Hussain Sagar Lake

Hyderabad, Telangana | Area: 440 ha

Management Authority: Hyderabad Metropolitan Development Authority

Values and Benefits



Ground Water Recharge



Supports Biodiversity



Nature based Tourism



Spiritual and inspirational values



Threats



Pollution



Invasive species



Unsustainable tourism

Significance

Low Medium High

Species richness

77 Birds
117 Plants
4 Fishes
6 Mammals
9 Reptiles and Amphibians

Notable species of global conservation significance

Grey-headed lapwing, Common shelduck, Northern shoveler

Significance

Low Medium High

Vihar

Mumbai Suburban District, Maharashtra | Area: 729 ha
Management Authority: Brihanmumbai Municipal Corporation

Values and Benefits



Water for domestic use



Carbon Sink



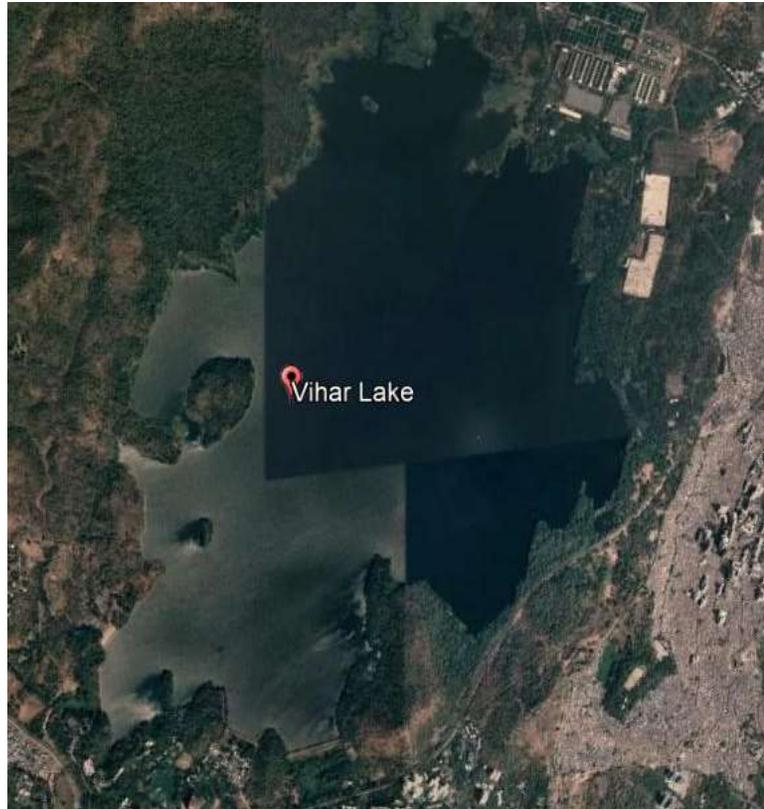
Ground Water Recharge



Flood control



Supports Biodiversity



Threats



Alteration of Hydrological regime



Siltation



Encroachment



Invasive species

Significance
Low Medium High

Species richness

30 Fishes
48 Mammals
60+ Birds

Species of global conservation significance

Notable	Vulnerable
Indian cormorant, Leopard	Leopard

Significance
Low Medium High

Sukhna Lake

Union Territory of Chandigarh | Area: 300 ha
Management Authority: Union Territory of Chandigarh Wetland Authority

Values and Benefits



Flood control



Food for humans-Fishes



Spiritual and
inspirational values

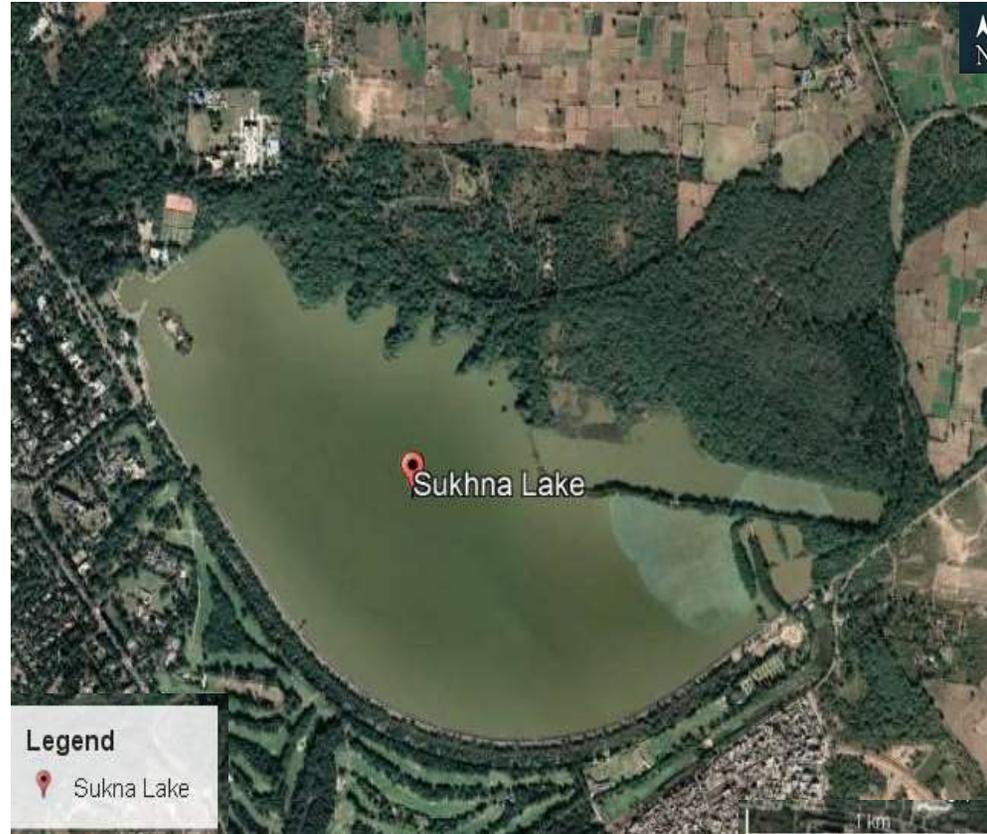


Nature based
Tourism



Supports
Biodiversity

Significance
Low Medium High



Threats



Siltation



Pollution



Invasive species



Alteration of
Hydrological
regime

Significance
Low Medium High

Species richness

91 Birds
28 Fishes

Notable species of global conservation significance

Ruddy shelduck, Common pochard, Bar-headed geese,
Northern shoveler

Nanda Lake

South Goa, Goa | Area: 64.47 ha

Management Authority: Goa State Wetland Authority

Values and Benefits



Ground Water Recharge



Water for irrigation use



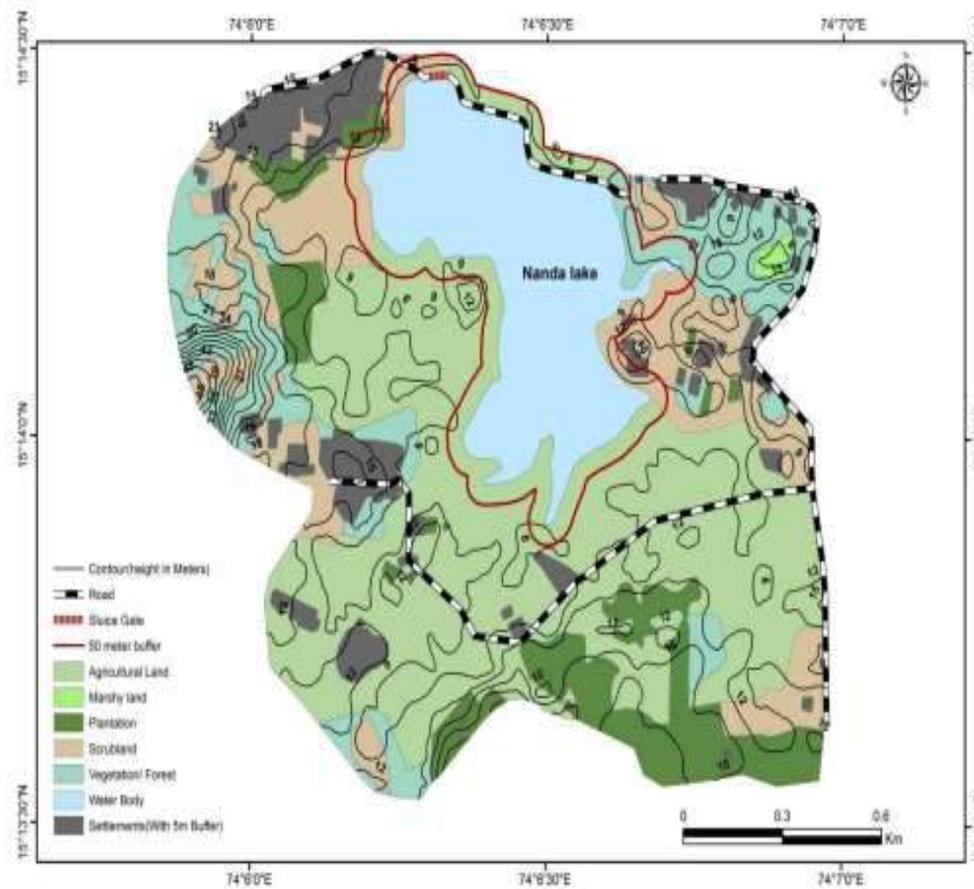
Flood control



Nutrient Retention



Supports Biodiversity



Threats



Encroachment



Siltation



Invasive species



Alteration of Hydrological regime



Pollution

Significance

Low Medium High

Significance

Low Medium High

<p>Species richness</p> <p>30+ Birds</p>	<p>Notable species of global conservation significance</p> <p>Black-headed ibis, Red-wattled lapwing, Little cormorant, Lesser whistling duck</p>
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Glow Lake

Lohit District, Arunachal Pradesh | Area: 81.50 ha
Management Authority: Arunachal Pradesh State Wetland Authority

Values and Benefits



Ground Water Recharge



Spiritual and inspirational values



Nature based Tourism



Supports Biodiversity



Threats



Siltation

Significance
Low Medium High

Species richness

105 Birds
61 Mammals
150 Plants

Species of global conservation significance

Notable

Capped langur, Hoolock gibbon, Asiatic elephant, Great hornbill

Vulnerable

Hoolock gibbon

Significance
Low Medium High

Upanpal

Bastar District, Chhattisgarh | Area: 3.40 ha
Management Authority: Chhattisgarh Forest Department

Values and Benefits



Ground Water
Recharge



Food for
humans-Fishes



Water for
irrigation



Supports
Biodiversity



Threats



Alteration of
Hydrological
regime

Significance

Low Medium High

Significance

Low Medium High

Notable species of global conservation significance

Buff striped keelback, Checkered keelback

Barkipona

Bokaro District, Jharkhand | Area: 4.04 ha

Management Authority: Department of Forest, Environment and Climate Change

Values and Benefits



Ground Water Recharge



Flood control



Supports Biodiversity

Significance

Low Medium High



Threats



Encroachment



Siltation



Invasive species



Alteration of Hydrological regime



Pollution

Significance

Low Medium High

Varthur

Bengaluru, Karnataka | Area: 220 ha
Management Authority: Bangalore Urban Municipal Corporation

Values and Benefits



Ground Water
Recharge



Water for
irrigation



Supports
Biodiversity



Threats



Siltation



Pollution



Alteration of
Hydrological
regime



Encroachment



Invasive species

Significance
Low Medium High

Species richness
80+ Birds

Species of global conservation significance

Notable

River tern, Little
cormorant, Painted
stork, Red-wattled
lapwing

Vulnerable

River tern

Significance
Low Medium High



Vembanad-Kol Wetland

Location
**Ernakulum, Alapuzha,
Kottayam Districts, Kerala**

Date of Designation
19th August 2002

Ramsar Site Number
1214

Management Authority
**State Wetland Authority
Kerala**

Area
151250 hectares

Wetland Type
**Lagoon and
floodplain complex**

Vembanad-Kol provides flood protection to Cochin and Ernakulam and provides water for agriculture in the Kuttanad region - Rice Bowl of Kerala

Installed by State Wetland Authority Kerala, with support from MoEFCC, GoI



Ashtamudi Wetland

Location
Kollam District, Kerala

Date of Designation
19th August 2002

Ramsar Site Number
6140

Management Authority
State Wetland Authority
Kerala

Area
183 hectares

Wetland Type
Estuary

The clam fisheries of Ashtamudi are famed to be the first Marine Stewardship Council certified fishery in India

Installed by State Wetland Authority Kerala, with support from MoEFCC, GoI



Sasthamkotta Lake

Location
Kollam District, Kerala

Ramsar Site Number
1212

Area
373 hectares

Date of Designation
19th August 2002

Management Authority
**State Wetland Authority
Kerala**

Wetland Type
Freshwater lake

Sasthamkotta, also known as the Queen of Lakes, is the largest natural fresh water lake of Kerala and is the principal source of drinking water for Kollam city

Installed by State Wetland Authority Kerala, with support from MoEFCC, GoI



Point Calimere Wildlife and Bird Sanctuary

Location
**Nagapattinam District,
Tamilnadu**

Date of Designation
19th August 2002

**Ramsar Site Number
1210**

Management Authority
**Tamil Nadu Forest
Department**

Area
38500 hectares

Wetland Type
**Mangrove swamps,
lagoons, mud-flats,
salt pans**

Point Calimere supports the largest blackbuck population in Tamil Nadu and is a nesting site for Olive Ridley turtles and is a rich fish ground

Installed by Tamilnadu State Wetland Authority, with support from MoEFCC, GoI



Chilika Lake

Location
**Puri, Khurda and Ganjam
Districts, Odisha**

**Ramsar Site Number
229**

Area
116500 hectares

Date of Designation
1st October 1981

Management Authority
**Chilika Development
Authority**

Wetland Type
Natural lagoon

Chilika has the distinction of being one of only two lagoons in the world that have the globally endangered Irrawaddy Dolphins *Orcaella brevirostris*

Installed by Odisha Wetland Authority, with support from MoEFCC, GoI



Keoladeo National Park

Location
**Bharatpur District,
Rajasthan**
Date of Designation
1st October 1981

Ramsar Site Number
230

Management Authority
**Rajasthan Forest
Department**

Area
2873 hectares
Wetland Type
**Freshwater marsh
and swamp**

Keoladeo National Park is one of the richest bird areas in the world. It is a habitat for more than 350 bird species

Installed by Rajasthan State Wetlands Authority, with support from MoEFCC, GoI



Harike Lake

Location
**Tarn Taran, Kapurthala,
Ferozepur Districts, Punjab**

Date of Designation
23rd March 1990

**Ramsar Site Number
462**

Management Authority
**Department of Forest and
Wildlife Preservation, Punjab**

Area
4100 hectares

Wetland Type
**Reservoir and water
storage area**

Harike is inhabited by globally endangered South Asia River Dolphin *Platanista gangetica*, Smooth Indian Otter *Lutra perpicillata* and freshwater turtles *Kachuga tecta* and *Lissemys punctata andersoni*.

Installed by Punjab Wetland Authority, with support from MoEFCC, GoI



Loktak Lake

Location
**Bishnupur District,
Manipur**

**Ramsar Site Number
463**

Area
26600 hectares

Date of Designation
23rd March 1990

Management Authority
**Loktak Development
Authority**

Wetland Type
Freshwater marsh

The endangered Brow-antlered Deer (Sangai), to which Loktak is the only natural habitat, is Manipur's state animal and important cultural identity.

Installed by Manipur State Wetland Authority, with support from MoEFCC, GoI



सत्यमेव जयते
Government of Rajasthan



Sambhar Lake

Location
**Jaipur, Nagaur and Ajmer
Districts, Rajasthan**

Date of Designation
23rd March 1990

Ramsar Site Number
464

Management Authority
**Rajasthan State Wetlands
Authority**

Area
24000 hectares

Wetland Type
Natural saline lake

Sambhar is a source of about one-tenth of India's salt production. The wetland supports a large population of birds especially Greater Flamingo *Phoenicopterus roseus* and Lesser Flamingo *Phoeniconaias minor*.

Installed by Rajasthan State Wetlands Authority, with support from MoEFCC, GoI



सत्यमेव जयते
Government of Jammu and Kashmir



Wular Lake

Location

**Bandipora District,
Jammu and Kashmir**

Date of Designation
23rd March 1990

**Ramsar Site Number
461**

Management Authority
**Wular Conservation and
Management Authority**

Area
18900 hectares

Wetland Type
**Freshwater lake and
marsh**

Wular is a natural flood defense for Srinagar and other upstream cities. It is also an important wintering ground for waterbirds migrating in Central Asian Flyway.

Installed by Jammu & Kashmir Wetland Authority, with support from MoEFCC, GoI



Kanjli

Location
**Kapurthala District,
Punjab**

Date of Designation
22nd January 2002

**Ramsar Site Number
1160**

Management Authority
**Department of Forest and
Wildlife Preservation,
Punjab**

Area
183 hectares

Wetland Type
River stretch

Kanjli attracts a large number of resident and migratory birds and is an important staging ground for several long-distant migrants. Its water is used for irrigating adjoining agricultural fields.

Installed by Punjab Wetland Authority, with support from MoEFCC, Gol



Ropar

Location
**Rupnagar and Nawanshahr
Districts, Punjab**

Date of Designation
22nd January 2002

**Ramsar Site Number
1161**

Management Authority
**Department of Forest and
Wildlife Preservation,
Punjab**

Area
1365 hectares

Wetland Type
**Barrage/ water
storage area**

Ropar provides and is an important breeding ground for endangered species such as Hog Deer and the Indian Pangolin.

Installed by Punjab Wetland Authority, with support from MoEFCC, Gol



Bhitarkanika Mangroves

Location
**Kendrapada District,
Odisha**

Date of Designation
19th August 2002

Ramsar Site Number
1205

Management Authority
**Mangrove Forest Division,
Odisha**

Area
65000 hectares

Wetland Type
**Mangroves and tidal
flats**

Bhitarkanika is famed for its saltwater crocodile, *Crocodylus porosus*. It is bordered by Gahirmatha Beach, which is the largest known nesting site of the Olive Ridley turtles *Lepidochelys olivacea* in the world.

Installed by Odisha Wetland Authority, with support from MoEFCC, GoI



Bhoj Wetland

Location
Bhopal District, Madhya Pradesh

Date of Designation
19th August 2002

Ramsar Site Number
1206

Management Authority
Bhopal Municipal Corporation

Area
3201 hectares

Wetland Type
Reservoir

Bhoj wetland is the principal source of water for the city of Bhopal and supports livelihoods of more than 200 fishers. In peak seasons, over 35,000 waterbirds can be seen here.

Installed by Madhya Pradesh State Wetland Authority, with support from MoEFCC, GoI



Deepor Beel

Location
Kamrup District, Assam

Ramsar Site Number
1207

Area
4000 hectares

Date of Designation
19th August 2002

Management Authority
Forest Department, Assam

Wetland Type
River floodplain

Deepor and adjoining wetlands are the city's natural flood buffers. Around 150 species of birds have been recorded here. The globally endangered Asiatic Elephant *Elephas maximus* is a regular visitor here.

Installed by Assam Wetland Authority, with support from MoEFCC, Gol



East Kolkata Wetlands

Location
Kolkata District, West Bengal

Date of Designation
19th August 2002

Ramsar Site Number
1208

Management Authority
East Kolkata Wetland Management Authority

Area
12500 hectares

Wetland Type
Aquaculture ponds and Wastewater treatment areas

A traditional resource recovery system based on aquaculture and agriculture in the wetlands forms the basis of producing nearly 15,000 MT of fish and 30,000 MT of vegetables annually, while cleaning city's sewage.

Installed by West Bengal Wetland Authority, with support from MoEFCC, GoI



Kolleru Lake

Location

**Krishna and Godavari
District, Andhra Pradesh**

Date of Designation
19th August 2002

**Ramsar Site Number
1209**

Management Authority
**Andhra Pradesh Forest
Department**

Area
90100 hectares

Wetland Type
**Lakes, marsh and
aquaculture ponds**

Kolleru is a natural flood-balancing reservoir between the deltas of River Krishna and Godavari. It is a habitat of over 200 birds.

Installed by Andhra Pradesh Wetland Authority, with support from MoEFCC, GoI



Wadhvana Wetland

Location
Vadodara District, Gujarat

Ramsar Site Number
2454

Area
630 hectares

Date of Designation
5th April 2021

Management Authority
Gujarat Forest Department

Wetland Type
**Water storage areas
/Reservoirs**

Wadhvana wetland supports globally threatened species and regularly hosts more than 20,000 water birds.

Installed by Gujarat Wetland Authority, with support from MoEFCC, GoI



Bhindawas Wildlife Sanctuary

Location
Jhajjar District, Haryana

Date of Designation
19th August 2002

Ramsar Site Number
2459
Management Authority
Forest and Wildlife
Department, Government
of Haryana

Area
412 hectares
Wetland Type
Water storage
areas/Reservoirs

Bhindawas wildlife sanctuary supports several globally threatened species and regularly hosts more than the 1% threshold population of Greylag Goose and Indian Cormorant.

Installed by Haryana Wetland Authority, with support from MoEFCC, GoI



Thol Lake Wildlife Sanctuary

Location
Mehsana District, Gujarat

Date of Designation
5th May 2021

Ramsar Site Number
2452

Management Authority
Gujarat Forest Department

Area
699 hectares

Wetland Type
Freshwater Lake

Thol wetland is an important habitat for IUCN red listed threatened species and supports more than 20,000 waterbirds during winter. The wetland regularly hosts more than 5000 Glossy Ibis in migratory season.

Installed by Gujarat Wetland Authority, with support from MoEFCC, GoI



Sultanpur National Park

Location
**Gurugram District,
Haryana**

Date of Designation
25th May 2021

**Ramsar Site Number
2457**

Management Authority
**Forest and Wildlife
Department, Government
of Haryana**

Area
142.52 hectares
Wetland Type
**Seasonal/
intermittent
freshwater lakes**

Sultanpur National Park provides a safe habitat for at least 15 globally threatened species supporting more than 1% threshold population of Bar-headed Goose and Greylag Goose.

Installed by Haryana Wetland Authority, with support from MoEFCC, Gol



THE ADMINISTRATION OF UNION TERRITORY OF LADAKH



Tso Kar Wetland Complex

Location

Leh District, Ladakh

Ramsar Site Number

2443

Area

9577 hectares

Date of Designation

17th November 2020

Management Authority

**Department of Wildlife
Protection, Union Territory
of Ladakh**

Wetland Type

**Permanent saline/
Brackish lakes**

Tso Kar Wetland-Complex is a unique wetland which supports several globally threatened and endemic species such as the Black-necked Crane, Snow leopard and Kiang.

Installed by Ladakh Wetland Authority, with support from MoEFCC, GoI



Sur Sarovar

Location
Agra District, Uttar Pradesh

Ramsar Site Number
2440

Area
38500 hectares

Date of Designation
21st August 2020

Management Authority
**Uttar Pradesh State
Wetland Authority**

Wetland Type
**Water storage
areas/Reservoirs**

Sur Sarovar supports more than 30,000 waterbirds and is also a wintering site to a number of migratory avifauna of Central Asian Flyway.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



महाराष्ट्र शासन



Lonar Lake

Location
**Buldhana District,
Maharashtra**

Date of Designation
22nd July 2020

**Ramsar Site Number
2441**

Management Authority
**Maharashtra Forest
Department**

Area
427 hectares

Wetland Type
**Permanent saline/
brackish/ alkaline
lakes**

Lonar, the only crater lake of the country is a National geo-heritage monument. The extreme alkaline system supports unique assemblages of faunal species.

Installed by Maharashtra State Wetland Authority, with support from MoEFCC, GoI



Kabartal Wetland

Location
Begusarai District, Bihar

Ramsar Site Number
2436

Area
2620 hectares

Date of Designation
21st July 2020

Management Authority
**Bihar State Wetlands
Authority**

Wetland Type
**Freshwater; Shrub-
dominated wetlands**

Kabartal wetland is representative of an extensive floodplain wetland. The wetland plays a vital role in regulating the overall hydrological regime.

Installed by Bihar State Wetlands Authority, with support from MoEFCC, GoI



Asan Conservation Reserve

Location
**Dehradun District,
Uttarakhand**

Date of Designation
21st July 2020

**Ramsar Site Number
2437**

Management Authority
**Uttarakhand Forest
Department**

Area
444 hectares

Wetland Type
**Permanent rivers/
streams/
creeks**

Asan Conservation Reserve is known for its avian diversity and each year hosts a number of migratory bird species during their winter migration.

Installed by Uttarakhand Wetland Authority, with support from MoEFCC, GoI



महाराष्ट्र शासन



Nandur Madhameshwar

Location

**Nashik District,
Maharashtra**

Date of Designation

21st June 2019

Ramsar Site Number

2410

Management Authority

**Maharashtra Forest
Department (Wildlife
Wing)**

Area

1437 hectares

Wetland Type

**Barrage and water
storage area**

Nandur Madhameshwar is a habitat of the globally vulnerable tree species, Indian sandalwood and also supports a rich diversity of avian and fish population.

Installed by Maharashtra State Wetland Authority, with support from MoEFCC, GoI



Saman Bird Sanctuary

Location
Mainpuri District, Uttar Pradesh

Date of Designation
2nd December 2019

Ramsar Site Number
2413

Management Authority
Uttar Pradesh State Wetland Authority

Area
526.3 hectares

Wetland Type
**Seasonal/
intermittent
freshwater lakes**

Saman bird sanctuary provides a safe habitat for several rare and threatened species such as Sarus Crane and Greater Spotted Eagle.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Nawabganj Bird Sanctuary

Location
Unnao District, Uttar Pradesh
Date of Designation
19th September 2019

Ramsar Site Number
2412

Management Authority
Uttar Pradesh State Wetland Authority

Area
224 hectares
Wetland Type
**Seasonal/
intermittent
freshwater marshes**

Nawabganj Bird Sanctuary regularly supports congregations of about 25,000 water birds.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Sandi Bird Sanctuary

Location

Hardoi District, Uttar Pradesh

Date of Designation

26th September 2019

Ramsar Site Number

2409

Management Authority

Uttar Pradesh State Wetland Authority

Area

308.5 hectares

Wetland Type

**Permanent freshwater marshes/
pools**

Sandi Bird Sanctuary is an important wintering site for several migratory bird species of the Central Asian Flyway and is home to a resident flock of around 200 Sarus Cranes.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Parvati Arga Bird Sanctuary

Location

Gonda District, Uttar Pradesh

Date of Designation

2nd December 2019

Ramsar Site Number

2416

Management Authority

**Uttar Pradesh State
Wetland Authority**

Area

722 hectares

Wetland Type

**Permanent
freshwater lakes**

Parvati Arga is one of the largest natural floodplain wetland in the state and is an important wintering site for several migratory bird species of the Central Asian Flyway

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Sarsai Nawar Jheel

Location
Etawah District, Uttar Pradesh

Date of Designation
19th September 2019

Ramsar Site Number
2411

Management Authority
Uttar Pradesh State Wetland Authority

Area
161.27 hectares

Wetland Type
Permanent freshwater marshes/pools

Sarsai Nawar Jheel is the roosting area of the largest flock of Sarus Cranes in the region, consisting of nearly 400 individuals.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Beas Conservation Reserve

Location

**Hoshiarpur, Amritsar,
Gurdaspur, Kapurthala,
Jalandhar and Tarn Taran
Districts, Punjab**

Date of Designation
26th September 2019

Ramsar Site Number

2408

Management Authority
**Department of Forests and
Wildlife Preservation,
Punjab**

Area

6428.92 hectares

Wetland Type
**Permanent rivers/
streams/
creeks**

Beas Conservation Reserve hosts the only population of Indus River
Dolphins in India.

Installed by Punjab Wetland Authority, with support from MoEFCC, Govt



Keshopur-Miani Community Reserve

Location
**Gurdaspur District,
Punjab**

Date of Designation
26th September 2019

Ramsar Site Number
2414

Management Authority
**Department of Forest and
Wildlife
Preservation, Punjab**

Area
343.9 hectares

Wetland Type
**Marshes and
aquaculture ponds**

Keshopur-Miani Community Reserve regularly supports more than 20,000 waterbirds.

Installed by Punjab Wetland Authority, with support from MoEFCC, GoI



Nangal Wildlife Sanctuary

Location
Rupnagar District, Punjab

Date of Designation
26th September 2019

Ramsar Site Number
2407

Management Authority
**Department of Forest and
Wildlife**

Area
116 hectares

Wetland Type
Reservoir

Preservation, Punjab

Nangal Wildlife Sanctuary has significant hydrological values- recharging groundwater and maintaining water quality. The wetland is an important and strategic refuelling base for very long distance/route migratory birds.

Installed by Punjab Wetland Authority, with support from MoEFCC, GoI



Sundarban Wetland

Location

**24 Parganas District,
West Bengal**

Date of Designation
30th January 2019

Ramsar Site Number

2370

Management Authority
**West Bengal Forest
Department**

Area

423000 hectares

Wetland Type
**Mangrove swamps,
mud flats, lagoons**

Sundarban wetlands is the single largest home of the Royal Bengal Tiger

Installed by West Bengal Wetland Authority, with support from MoEFCC, GoI



सत्यमेव जयते
Government of Jammu and Kashmir



Surinsar-Mansar Lakes

Location
**Udhampur District,
Jammu and Kashmir**
Date of Designation
8th November 2005

Ramsar Site Number
1573
Management Authority
**Surinsar-Mansar
Development Authority**

Area
350 hectares
Wetland Type
Freshwater Lake

Surinsar-Mansar is a habitat for the globally vulnerable Indian Softshell Turtle *Nilssonina gangetica*. The complex has a high religious and cultural significance owing to the mythological story of Arjuna from Mahabharata.

Installed by Jammu & Kashmir Wetland Authority, with support from MoEFCC, GoI



Renuka Wetland

Location
**Sirmaur District,
Himachal Pradesh**
Date of Designation
19th August 2002

Ramsar Site Number
1571
Management Authority
**Himachal Pradesh Forest
Department**

Area
38500 hectares
Wetland Type
Freshwater Lake

Renuka wetland possesses rich biodiversity and the religious values attached to the wetland prohibits any resource extraction. Over 100 species of birds have been recorded here.

Installed by Himachal Pradesh State Wetland Authority, with support from MoEFCC, GoI



Rudrasagar Lake

Location
**West Tripura District,
Tripura**

Date of Designation
8th November 2005

Ramsar Site Number
1572

Management Authority
Tripura Forest Department

Area
240 hectares

Wetland Type
**Freshwater lake and
marshes**

A sedimentation reservoir, Rudrasagar is an important breeding ground for several indigenous fish species.

Installed by Wetland Authority of Tripura, with support from MoEFCC, GoI



Khijadia Wildlife Sanctuary

Location
**Jamnagar District,
Gujarat**
Date of Designation

Ramsar Site Number

Management Authority
Gujarat Forest Department

Area
511.75 hectares

Wetland Type
**Seasonal freshwater
marshes**

Khijadia Wildlife Sanctuary supports at least 15 globally threatened bird species and provides important feeding grounds to the Lesser and Greater Flamingoes

Installed by Gujarat Wetland Authority, with support from MoEFCC, GoI



Nalsarovar

Location
**Surendranagar and
Ahemdabad Districts,
Gujarat**
Date of Designation
24th September 2012

Ramsar Site Number
2078
Management Authority
Gujarat Forest Department

Area
12000 hectares
Wetland Type
Marsh

Nalsarovar is an important wintering ground for extralimital and resident-migratory bird species and regularly hosts more than 1,00,000 birds.

Installed by *Name of state /UT* Wetland Authority, with support from MoEFCC, GoI



Pong Dam Lake

Location
Kangra District, Himachal Pradesh

Date of Designation
19th August 2002

Ramsar Site Number
1211

Management Authority
Himachal Pradesh Forest Department

Area
15662 hectares

Wetland Type
Reservoir

Pong reservoir, also called the Maharana Pratap Sagar was created in 1976 by damming of River Beas. The dam has the world's largest congregation of Bar-headed Goose *Anser indicus*.

Installed by Himachal Pradesh State Wetland Authority, with support from MoEFCC, GoI



THE ADMINISTRATION OF UNION TERRITORY OF LADAKH



Tsomoriri

Location
Leh District, Ladakh

Date of Designation
19th August 2002

Ramsar Site Number
1211

Management Authority
**Department of Wildlife
Protection, Union Territory
of Ladakh**

Area
12000 hectares

Wetland Type
**Brackish / Alkaline
lake**

Tsomoriri is the largest breeding ground of Bar-headed Goose *Anser indicus* within India. The globally vulnerable Black-necked Crane *Grus nigricollis* regularly stage on the marshes along the wetland's northern edge.

Installed by Ladakh Wetland Authority, with support from MoEFCC, GoI



Chandertal Wetland

Location
**Lahaul and Spiti Districts,
Himachal Pradesh**

Date of Designation
8th November 2005

Ramsar Site Number
1569

Management Authority
**Himachal Pradesh Forest
Department**

Area
49 hectares

Wetland Type
Freshwater lake

Chandertal is a repository of alpine biodiversity and an important staging ground of migratory birds. Snow Leopard *Panthera uncia*, Himalayan ibex *Capra sibirica* and Blue Sheep *Pseudois nayaur* inhabit wetland catchment.

Installed by Himachal Pradesh State Wetland Authority, with support from MoEFCC, GoI



सत्यमेव जयते

Government of Jammu and Kashmir



Hokera Wetland

Location

**Budgum and Srinagar
Districts, Jammu and
Kashmir**

Date of Designation
8th November 2005

Ramsar Site Number

1570

Management Authority
**Department of Wildlife
Protection,
Jammu & Kashmir**

Area

1375 hectares

Wetland Type
Marshes

Hokera supports a number of resident and migratory species. The wetland is particularly important for ducks and geese, and as a breeding area for herons, egrets, and rails.

Installed by Jammu & Kashmir Wetland Authority, with support from MoEFCC, GoI



Upper Ganga River

Location
**Hapur, Sambhal, Amroha
and Bulandshahr
Districts, Uttar Pradesh**
Date of Designation
8th November 2005

Ramsar Site Number
1574

Management Authority
**Uttar Pradesh State
Wetland Authority**

Area
26590 hectares
Wetland Type
River stretch

Upper Ganga River is an important habitat of the Ganges River Dolphin ,
which is declared as India's National Aquatic Animal.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Samaspur Bird Sanctuary

Location
Raebareli District, Uttar Pradesh

Date of Designation
3rd October 2019

Ramsar Site Number
2415

Management Authority
Uttar Pradesh State Wetland Authority

Area
799.4 hectares

Wetland Type
Freshwater lake and marsh

Samaspur Bird Sanctuary supports large congregation of migratory and resident birds. More than 75,000 waterbirds can be sighted in the wetland complex.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Bakhira Wildlife Sanctuary

Location
**Sant Kabir Nagar District,
Uttar Pradesh**
Date of Designation

Ramsar Site Number
Management Authority
**Uttar Pradesh Forest
Department**

Area
2894 hectares
Wetland Type
**Permanent
freshwater marshes**

Bakhira Wildlife Sanctuary regularly supports more than 5,000 Purple Swamphen and is a congregation site for over 100 Sarus Cranes.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Haiderpur Wetland

Location

**Muzzaffarnagar and
Bijnor Districts, Uttar
Pradesh**

Date of Designation

Ramsar Site Number

Management Authority
**Uttar Pradesh Forest
Department**

Area

6908 hectares

Wetland Type
**Permanent rivers/
streams/
creeks**

Haiderpur wetland supports numerous waterbird and wetland dependent species at critical stages in their life cycles, regularly supporting more than 1% threshold population of Greylag Goose and Bar headed Goose.

Installed by Uttar Pradesh State Wetland Authority, with support from MoEFCC, GoI



Government of Mizoram



Pala Wetland

Location
Siaha District, Mizoram

Date of Designation

Ramsar Site Number

Management Authority
**Department of
Environment, Forests &
Climate Change**

Area

1850 hectares

Wetland Type
**Permanent
freshwater lakes**

Pala wetland supports globally threatened species such as Hoolock Gibbon, Elongated tortoise, Asian brown tortoise and Black soft-shelled turtle.

Installed by State Wetland Authority Mizoram, with support from MoEFCC, GoI

I want to be a WETLAND MITRA

Name : Gender :

Occupation:

Contact Details

Phone Number:

Email :

Address:

I am willing to commit hours per month to work towards restoring/rejuvenating the health of our wetland

My Areas of Interest

Wetland assessment surveys

Bird surveys

Clean-up drives

Awareness mobilization

Monitoring

Others (specify)

Signature

Place.....

Date:.....

Mitra Enrolment Form

मैं तालाब मित्र / नमभूमि मित्र बनना चाहता/चाहती हूँ

नाम: _____ लिंग: पुरुष/महिला

व्यवसाय: _____

संपर्क विवरण:

फ़ोन: _____

ई-मेल: _____

पता: _____

मैं प्रत्येक माह तालाब स्वास्थ्य के पुनरुद्धार के लिए _____ घंटों के लिए प्रतिबद्ध हूँ

कार्य क्षेत्र, जिनमें मैं अपना योगदान देने का/की इच्छुक हूँ-

नमभूमि प्रहरी

जागरूकता लाना

सफाई अभियान

पक्षी सर्वेक्षण

निगरानी करने में

उपर्युक्त सभी

हस्ताक्षर

स्थान-

दिनांक-



Wetland Mitra



We have volunteered as Wetland Mitras to keep our wetlands healthy.

We recognize that wetlands play a vital role in social, economic and environmental well being.

We understand that the degradation of wetlands by encroachment, disposal of solid & liquid waste and over use of resources has impacted the health of people, nature and our diverse biodiversity.

We recognize and uphold that collective and individual efforts shall bring a positive change towards wetland conservation.

We pledge to undertake necessary actions and join hands with different stakeholders to protect and conserve our wetlands.

We shall keep the wetlands free from solid & liquid waste, create awareness and motivate others to join this endeavour.

We are proud to be Wetland Mitras.



Our Wetlands, Our Heritage



वेटलैंड मित्र



हम अपने आर्द्रभूमि को स्वस्थ रखने के लिए वेटलैंड मित्र के रूप में स्वेच्छा से काम करेंगे।

हम मानते हैं कि आर्द्रभूमि सामाजिक, आर्थिक और पर्यावरणीय हितों में महत्वपूर्ण भूमिका निभाती है।

हम समझते हैं कि अतिक्रमण, ठोस और तरल कचरे के निपटान और संसाधनों के अधिक उपयोग से आर्द्रभूमि का क्षरण लोगों के स्वास्थ्य, प्रकृति और हमारी विविध जैव विविधता को प्रभावित करती है।



हम मानते हैं कि सामूहिक और व्यक्तिगत प्रयास आर्द्रभूमि संरक्षण की दिशा में सकारात्मक बदलाव लाएंगे।

हम अपनी आर्द्रभूमि की रक्षा और संरक्षण के लिए आवश्यक कदम उठाने और विभिन्न हितधारकों के साथ हाथ मिलाने का संकल्प लेते हैं।

हम आर्द्रभूमि को ठोस और तरल कचरे से मुक्त रखेंगे, जागरूकता फैलाएंगे और दूसरों को इस प्रयास में शामिल होने के लिए प्रेरित करेंगे।

हमें वेटलैंड मित्र होने पर गर्व है।



हमारे तालाब, हमारे धरोहर