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National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines, 2019

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सत्यमेव जयते

Guidelines

National Plan for Conservation of Aquatic Ecosystems (NPCA)

Ministry of Environment, Forest and Climate Change
Government of India

April 2019



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डॉ. हर्ष वर्धन
Dr. Harsh Vardhan



भारत सरकार
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्री
GOVERNMENT OF INDIA
MINISTER OF ENVIRONMENT, FOREST &
CLIMATE CHANGE



MESSAGE

I am pleased to present the "Guidelines for National Plan for Conservation of Aquatic Ecosystems". These guidelines are intended to streamline the details required for development of institutional mechanism at National as well as State levels and optimize the project reports and proposals submitted under the National Plan for Conservation Aquatic Ecosystems (NPCA).

These guidelines reflect the knowledge and experience gained since the last set of guidelines for the National Lake Conservation Plan (NLCP) and National Wetlands Conservation Programme (NWCP) issued in 2008 and 2009, respectively.

These guidelines are a major step forward, requiring a more practical approach to develop the conservation plans with the ownership and stewardship for the management of wetlands resting with State Government and Central Government playing a facilitating role. An effective institutional structure at the state level is the backbone for successful implementation and to ensure cross sectoral decision making for wetlands.

Guidelines also outline the different steps to be undertaken for preparing and submission of proposals. Leveraging of the various Central and State Government schemes to support the implementation of wetland projects has also been emphasized. The new guidelines require several stages of preparation before a plan for conservation of wetlands is implemented.

These guidelines are an excellent start to a new era in the conservation of wetlands and aquatic ecosystems. These guidelines will be dynamic. i.e., they will expand and adapt in conjunction with knowledge and experiences gained in the future.

I congratulate the team that has put together these guidelines and look forward to their implementation.

Date: 24.04.2019


(Dr. Harsh Vardhan)



सी.के. मिश्रा
C.K.Mishra



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MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE



FOREWORD

After the merger of Centrally Sponsored Schemes (CSS) of the Ministry of Environment, Forest and Climate Change for conservation of water bodies, namely the National Wetlands Conservation Programme (NWCP) and the National Lake Conservation Plan (NLCP) into an integrated scheme of National Plan for Conservation of Aquatic Ecosystems (NPCA), a need for guidelines was strongly felt.

In these Guidelines, Aquatic ecosystems refer to wetlands including lakes. Wetlands are lifelines of the society as they provide vital support to human well-being through their wide spectrum of ecosystem services. Wetlands are however subject to a number of threats related to anthropogenic and non-anthropogenic drivers and pressures. Their degradation affects biodiversity and human well-being in a number of ways. Conservation and sustainable management of wetlands is an important priority area of the MoEF&CC.

NPCA aims to provide an integrated and scientific framework for protection, conservation and sustainable management of wetlands in the country and accordingly guidelines have been prepared.

I congratulate the team of MoEF&CC and IIT Roorkee for preparing these guidelines and finalizing them by incorporating the suggestions and experience gained in the country by different institutions.

[C.K. Mishra]

Dated: 24th April, 2019
Place: New Delhi

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Preface

Wetlands are shallow water-bodies, transitional between terrestrial and aquatic systems, with high biodiversity and productivity whereas lakes are relatively deep, perennial water bodies where substantial growth of macrophytes is undesirable. The approach and strategies for conservation and management of both lakes and wetlands depend upon the functions they perform and their ecological characteristics. Therefore their conservation and management for achieving the desired objectives, such as water quality enhancement, biodiversity conservation or unique ecological values, need uniform policies and guidelines.

These guidelines have been prepared on the basis of the developments and the experience gained in implementing the schemes under NLCP and NWCP. The issues raised by the states during the five Regional Workshops held during the course of the year and the brainstorming sessions with wetland experts have helped us shape these guidelines. In view of the fact that the ownership of the management of wetlands rests with the State Government, these guidelines provide detailed and effective institutional structure required by the State Government for successful implementation and management of wetlands. Integrating wetlands and water resources management ensure that land and water use decisions within catchments do not adversely impact and are able to provide the ecosystem services.

I congratulate Ms. Manju Pandey (Joint Secretary) along with her team comprising of 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); Prof Arun Kumar and his IIT Roorkee team and Dr. Ritesh Kumar (Conservation Program Manager, Wetland International south Asia) for preparing and finalizing these guidelines. I also thank the experts and other institutions for providing valuable suggestions which helped in finalizing the guidelines.


(Anil Kumar Jain]



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Abbreviations

a.m.s.l.	above mean sea level
CSR	Corporate Social Responsibility
DC/ DM	District Collector/ District Magistrate
DPR	Detailed Project Report
DRDA	District Rural Development Agency
GoI	Government of India
ha	Hectare
IMP	Integrated Management Plan
MAP	Management Action Plan
MLA	Member of Legislative Assembly
MoEF&CC	Ministry of Environment, Forest and Climate Change
MP	Member of Parliament
NLCP	National Lake Conservation Plan
NPCA	National Plan for Conservation of Aquatic Ecosystems
NRCD	National River Conservation Directorate
NWCP	National Wetlands Conservation Programme
SWA	State Wetlands Authority (State Nodal Agency)
UT	Union Territory

*A hotspot of biodiversity with more than one million overwintering migratory birds, Chilika has the distinction of being one of only two lagoons in the world that have the globally endangered Irrawaddy Dolphins *Orcaella brevirostris*. The rich fishery of the lagoon with an average yield of 12,000 MT, forms the base of livelihoods of 0.2 million fishers.*



1 Guidelines Purpose and Scope

India, owing to wide variations in rainfall, hydrology, physiography, geomorphology and climate, is bestowed with a rich diversity of wetlands, which play a significant role in providing ecological and economic security through their wide ranging ecosystem services and biodiversity values. In these Guidelines Aquatic Ecosystems refer to wetlands including lakes

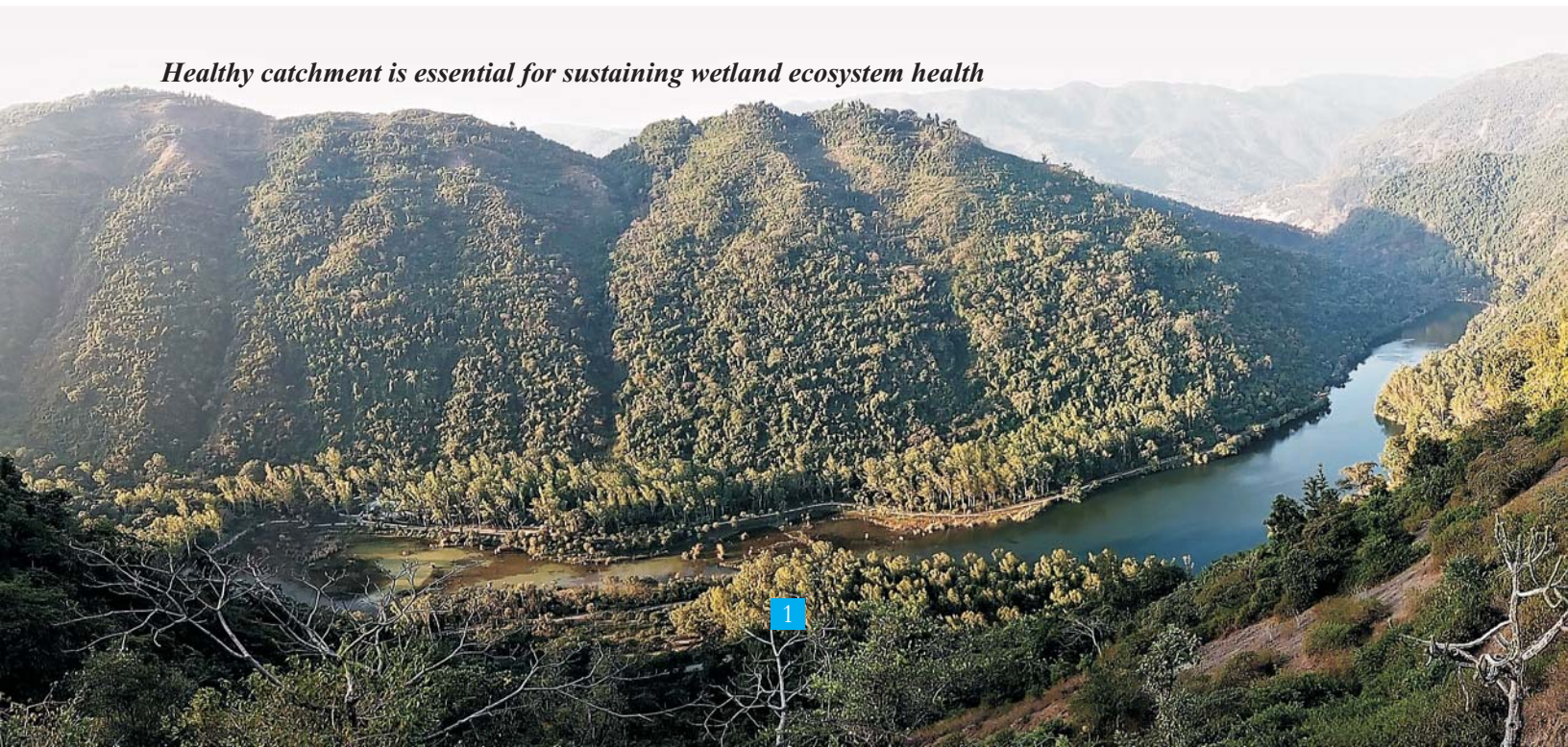
Notwithstanding the high level of dependence, wetlands have been stressed by a range of anthropogenic and non-anthropogenic pressures, such as conversion for alternate usages, land use change, fragmentation of natural water regimes, pollution, siltation, species invasion, over harvesting of natural resources, unsustainable tourism and climate change.

India is committed to conservation of wetlands. The Indian Constitution, in its Article 51-A(g) stipulates that “it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures. The MoEF&CC, at its inception in 1985, identified wetland conservation and sustainable management as one of its important programming themes. India's assent to the Ramsar

Convention in September 1982 provided an important backdrop to this decision. The Ministry established the National Wetlands Conservation Programme (NWCP) in 1986 to provide the overarching policy framework and financial assistance to the State Governments for implementation of site management plans. In 2001, the National Lake Conservation Plan (NLCP) was introduced to address pollution issues in urban and semi-urban environments through interception, diversion and treatment of pollution load entering lakes. Priority sites under the two schemes have been identified based on specific criteria laid under the two schemes. As on February 2019, over 180 sites have been prioritized for conservation and restoration. The Ministry has also designated 27 wetlands as being of international significance under the Ramsar Convention.

The conservation and wise use of wetlands figure significantly in various policy commitments. The National Environment Policy of 2006 identifies wetlands as components of 'freshwater resources' and recommends integration in developmental planning, management based on prudent use strategies, promotion of ecotourism and implementation of a regulatory framework.

Healthy catchment is essential for sustaining wetland ecosystem health



Wetlands also figure significantly in 3 of the 12 National Biodiversity Targets, framed by the MoEF&CC in line with the Convention on Biological Diversity's Strategic Plan 2011-2020. Wetlands have direct reference in Target 3 (Strategies for reducing rate of degradation, fragmentation and loss of natural habitats are finalized and actions put in place by 2020), Target 6 (ecologically representative areas on land and in inland waters, as well as coastal and marine zones, especially those of particular importance for species, biodiversity and ecosystem services, are conserved effectively and equitably), and Target 8 (by 2020, ecosystem services, especially those related to water, human health and livelihoods and well-being are enumerated and measures to safeguard them are identified). These targets will guide investment and resource allocation for biodiversity conservation at the national level, and therefore bear high significance for wetlands. The National Water Policy (2012) recommends adoption of a basin approach for water resources

management, and identifies conservation of river corridors, water bodies and associated ecosystems as an important action area.

Wetlands are also essential for human well-being, economic security and climate change mitigation and adaptation. The multiple benefits provided by wetlands are essential in achieving Sustainable Development Goals (Fig 1).

In February 2013, considering the need for a common approach to the conservation and management of wetlands and urban and peri-urban lakes, the Union Cabinet decided to merge the two schemes into a unified scheme entitled 'National Plan for Conservation of Aquatic Ecosystems' (NPCA) to enable the application of uniform policy and guidelines and promote an integrated and multi-disciplinary approach with a common regulatory framework.

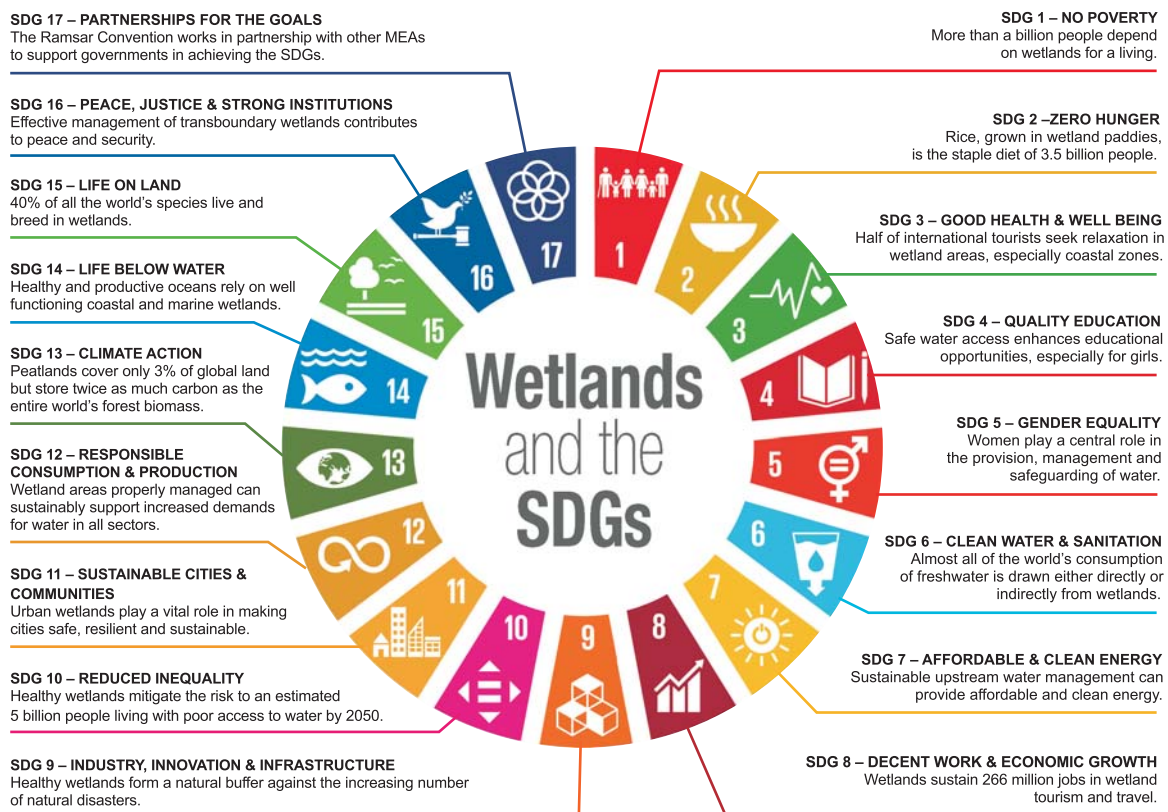


Figure 1: Wetlands and Sustainable Development Goals

(Source: Scaling up wetland conservation, wise use and restoration to achieve the Sustainable Development Goals, July 2018, www.ramsar.org)

The NPCA envisages halting and reversing the continued degradation and loss of wetlands in the country and ensuring their conservation and integrated management by promoting a cross sectoral planning and decision making. The programme mandates a shift from the sectoral approaches adopted till date for management of these ecosystems, and instead focuses on mainstreaming their full range of biodiversity and ecosystem services into development programmes being pursued at national and state / UT levels.

These guidelines outline an implementation framework for NPCA, and build on a critical evaluation of implementation experiences of the NWCP and NLCP thus far.

The basic features that have been kept in mind while preparing these guidelines are:

- Collaborative effort between Central Government and State Governments, particularly ownership and stewardship of wetlands resources by the later, is crucial to overall sustainability of restoration and management efforts.
- Effective institutional structures need to be created within the States and UTs to ensure cross sectoral decision making for wetlands. This is also mandated by the Wetlands (Conservation and Management) Rules, 2017.
- Mainstreaming wetlands in State level policy and decision making by building convergence with ongoing developmental sector investments is an important pathway to address anthropogenic threats on wetlands (Annexure-I).
- Management of wetlands need to be based on a diagnostic evaluation of their ecological, hydrological, socioeconomic and institutional features, and factors governing these features to arrive at an action plan suited to specific context. Participation of stakeholders as well as experts are key enablers to such a process.
- Wetlands need to be integrated with water resources management to ensure that land and water use decisions within catchments and coastal zones do not adversely impact these ecosystems, rather are able to apply wetland ecosystem services values synergistically to achieve water, food and climate security solutions.
- These guidelines supersede the Guidelines for NLCP (issued in May 2008) and Guidelines for Conservation and Management of Wetlands (issued in June 2009).

*Part of floodplain wetlands of Manipur River, Loktak is the largest source of fish, edible plants and freshwater for the state of Manipur. Floating mats of vegetation, locally called phumdi are its characteristic feature. Globally endangered Brow-antlered Deer *Rucervus eldii eldii* inhabits Keibul Lamjao, a floating national park forming the wetland's southern part.*



2 Managing Wetlands

2.1 Extent of Wetlands in India

The Himalayas are interspersed with a number of glacial lakes, swamps, and floodplain marshes spread across Jammu and Kashmir, Uttarakhand, Himachal Pradesh, Sikkim and Assam, several of which are the headwaters of major rivers. The alluvial plains of River Ganga and Brahmaputra have extensive riverine wetland formations as floodplains and oxbows known variously as maun, beel, chaur, jheel and pat in different parts of the country. These sustain highly productive agriculture and fisheries, besides acting as natural flood defence for communities. In arid and semi-arid zones of the peninsular and western India, several water bodies have been constructed to support domestic water and irrigation needs. The arid zone spanning Rajasthan and Gujarat has vast saline flats, monsoon fed freshwater lakes as well as salt lakes (for example, Sambhar, Pachpadra, Deedwana and Lukransar). The Peninsular Deccan region is studded with man-made lakes providing water for various human needs. Several of these also act as good habitats for water birds (e.g., Varthur, Rachenahalli and Amruthalli Lakes in Bangalore,

and Kolleru in Andhra Pradesh). Several urban agglomerations such as metropolitan area of Hyderabad and Ahmedabad have strikingly high number of human-made lakes (over 400 and 600 in numbers, respectively). The narrow plains of the east and the west coasts are dotted with lagoons, backwaters, mangroves, coral reefs and salt lakes.

As per the National Wetlands Atlas, published by Space Applications Centre, Ahmedabad, India has 15.26 million ha area under wetlands, roughly equal to 4.6% of its land area. Of this, inland wetlands constitute 69.22% (10.56 million ha). Nearly 12% of the inland wetland area is in the form of lakes and ponds (including those less than 2.25 ha).

2.2 Importance of Wetlands: Ecosystem Services and Biodiversity

Wetlands are lifelines of the society. They provide vital support to human well-being through their wide ranging ecosystem services and biodiversity values. As these ecosystems degrade or are adversely altered, the water cycle, and the interlinked carbon and nutrient cycles are also adversely altered, leading

Wetlands support habitat for numerous species



to water, food and climate insecurity, and loss of biodiversity. Some of the major ecosystem services provided by wetlands are:

- Water storage;
- Support livelihoods by providing food, water and fiber;
- Regulation of water regimes and stream flows;
- Ground water recharge;
- Water purification;
- Nutrient recycling;
- Buffer shorelines from erosion;
- Buffer communities against floods, droughts, cyclones and wave surges;
- Support a variety of life forms through extensive food webs;
- Habitat to diverse flora and fauna, including resident and migratory species;
- Habitat for migratory species such as waterbirds and fish;
- Provide recreational opportunities;
- Integral part of cultural identities;
- Enhance landscape aesthetics; and,
- Stabilize local climate.
- The ability of a wetland to provide the aforementioned ecosystem services and support biodiversity is dependent on local conditions, geomorphic settings and linked livelihood systems.

2.3 Major Threats and Impacts

Wetlands are subject to a number of threats emanating from anthropogenic and non-

anthropogenic drivers and pressures. Some of the major threats to these ecosystems are:

- Fragmentation of hydrological regime;
- Siltation;
- Pollution;
- Encroachment and land reclamation;
- Species invasion including alien species;
- Unregulated recreation and tourism;
- Over-harvesting of resources; and,
- Climate change.

Degradation of wetlands affects biodiversity and human well-being in a number of ways, as is evident from following examples:

- Changes in water regimes of Loktak Lake, a floodplain wetland complex of Manipur River, in order to withdraw water for hydropower generation has led to enhanced peripheral flooding, near complete decimation of migratory fisheries and rapid degradation of habitat of globally endangered ungulate species - Brow Antlered Deer (*Rucervus eldii*) or Sangai for which the wetland is the only known natural habitat.
- Conversion of marshes associated with Wular Lake for agriculture and afforestation has reduced the capacity of the wetland system to regulate the flow regime leading to increased floods and droughts.
- Enhancement of permanent agriculture has adversely affected the livelihoods of over 15,000 fishermen living around Kanwar Jheel in North Bihar. Agriculture in turn has been impacted by lowering of ground water levels

Wetlands support food security by providing fish and aquatic plants



and flooding attributed to the shrinkage in wetland area.

- Reclamation of urban lakes in Bangalore and Chennai is one of the major factors leading to increased urban flooding.
- Agriculture in the backwaters of Vembanad-Kol has often created distress to the farmers and also caused irreversible changes to the wetland habitat.

2.4 Management Gaps and Challenges

Following gaps and challenges have limited effectiveness of interventions made for conservation and management of wetlands:

2.4.1 Sectoral Approaches

The full range of wetland ecosystem services and biological diversity values are rarely integrated in sectoral developmental plans, impeding their ecological and hydrological functioning and leading to stakeholder conflicts. In most States, wetlands are not recognized as a unique land use category and these are often clubbed with 'wastelands' meant to be used for alternate developmental purposes. Sectoral approach also results due to multiple departments pursuing different objectives (for example, water resources department aiming at enhancing water holding capacity, fisheries department at enhancing fish production, tourism department at developing tourist potential) with disparate outcomes related to wetlands, and often working for cross-purposes.

2.4.2 Partial Approach to Implementation of Management Plans

The management plans for wetlands are mostly formulated, financed and implemented on annual cycles, and in several cases, these are not based on comprehensive landscape scale management plans. Most of the plans are therefore prescriptive in nature, and do not address the root causes of degradation (e.g., change in hydrological regimes, pollution or loss of biodiversity). Post project sustainability strategies are also not worked out. Only in a few States/UTs, allocation has been made for wetlands within their budgets, and wherever such allocations are made, it is mostly for establishment expenses and not for supporting restoration. Similarly, though NLCP was implemented on a cost-sharing basis, the operation and maintenance of urban and peri-urban lakes by the respective State Government departments is marginal.

2.4.3 Weak cross – Sectoral Governance

Integrated management of wetlands requires cross-sectoral institutional arrangements. This was envisaged to be achieved through creation of dedicated authorities responsible for developing management plans, site monitoring and evaluation and implementation through line departments. However, only a few States have been able to designate specific authorities. Further, only in few cases, these authorities have regulatory backing. The Wetlands (Conservation and Management) Rules, 2017 has constituted State/UT Wetlands

Urban wetlands are natural infrastructure treating wastewater and enhancing landscape aesthetics



Authorities as the nodal policy making and regulating bodies for wetlands within their jurisdiction.

2.4.4 Insufficient Capacity for Integrated Management

Review of management plans submitted to the Ministry indicates lack of knowledge and experience in the formulation of management plans addressing the full range of drivers of ecosystem degradation. Equally significant is the lack of training and capacity building opportunities for the site managers.

2.4.5 Limited Research Management Interface

Management of wetlands calls for continuous research inputs to address the drivers of change. However, research has not been given due importance in case of most of the wetlands. Much of the research is focused on structural elements of wetlands (limnology, biodiversity) with very limited emphasis on functional aspects such as ecosystem services and community livelihoods.

2.4.6 Impact of Climate Change

The sea level rise is expected to adversely affect the coastal wetlands; some of them might disappear; several others would experience changes to their

morphology, water balance, salinity levels and biodiversity. The mudflats and coral reefs could be considerably affected by sea level rise. The high altitude wetlands would suffer due to problems associated with the reduction in the thickness and area of glaciers. The variation in precipitation pattern would have its impact on wetland ecosystems and their wise use. Therefore, there is a need to plan for the future considering the climate change and its impact on wetlands.

The NPCA is designed to address the aforementioned gaps through focus on integrated wetland management in relation to their drainage basins, strengthening institutional arrangements and governance mechanisms, enhancing capacity and improving knowledge base and developing decision support system.

2.5 The need for integrated management

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 utilization in a way compatible with maintenance of natural properties of the ecosystem needs to be adopted for these ecosystems. This forms the core philosophy of 'wise use', which is "maintenance of ecological character within the context of sustainable development, and achieved through

Encroachment is a major threat to wetlands



implementation of ecosystem approaches.” This approach builds on the critical linkages that exist between people and sustainable development of aquatic ecosystems; and encourages community engagement and transparency in negotiating trade-offs and determining equitable outcomes for conservation.

The NPCA therefore recommends that management of each wetland is guided by an “integrated management plan” (IMP). 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, the various site features; monitoring requirements for detecting changes in ecological character and for measuring the effectiveness of management; and resources for management implementation.

While it is recognized that each site 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 IMP:

- 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. 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. 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.
- 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 prepared to be accommodative of uncertainties and challenges. This can be achieved by using an adaptable management approach, which allows for suitable modification of management based on continuous site monitoring and assessment of new information. In several instances, the ability of future to sustain human use cannot be determined off-hand due to lack of information. In such circumstances, as is the practice in other spheres of ecosystem management, use of precautionary principle is recommended. This means that lack of full scientific uncertainty should not be used as a reason to postpone measures to prevent ecological degradation. With more data collected from the field as part of implementation of management action plan, better understanding of the system can be achieved and appropriate models developed.
- 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 recognize 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 which take place within their direct and indirect basins and coastal zones. Institutional arrangements for managing aquatic ecosystems 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. This need can be best served by designating wetland authorities within States and UTs to serve as a distinct regulatory, planning and policy making body for conservation, restoration and sustainable management of its wetlands. This is also mandated by Wetlands (Conservation and Management) Rules, 2017.

*Kolleru, a natural flood-balancing reservoir between the deltas of River Krishna and Godavari, is a habitat of over 200 birds. It was once famed for a breeding colony of Spot-billed or Grey Pelican *Pelecanus philippensis*. Recently, Greylag Goose *Anser anser*, not sighted in Deccan and South India thus far, was spotted here.*



3

National Plan for Conservation of Aquatic Ecosystems

3.1 Scheme coverage

Wetlands include an area 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 tide does not exceed six meters. Conservation and management of mangroves and coral reefs shall continue to be guided by the Centrally Sponsored Scheme entitled Conservation and Management of Mangroves and Coral Reefs.

3.2 Goal and Purpose

The goal of NPCA is to develop and maintain a network of healthy wetlands which contribute to human well-being through their diverse ecosystem services, as well as sustain diversity and populations of wetland-dependent species.

The purpose is to mainstream full range of wetlands biodiversity and ecosystem services within developmental plans and programmes at various levels.

3.3 Objectives

The NPCA aims to provide an integrated and scientific framework for conservation and sustainable management of wetlands in the country. The specific objectives of the plan are:

- Developing policy guidelines for conservation and sustainable management of wetlands;
- Supporting, promoting and strengthening conservation of prioritized wetlands through integrated management;
- Facilitating the development of a national inventory, and setting up an information decision support system for the management of wetlands;
- Strengthening the capacity of wetlands managers and stakeholders for effective management of wetlands; and

- Strengthening the implementation of international commitments related to wetlands.

3.4 Strategy

The NPCA promotes the leadership and stewardship of States / UT administrations for conservation and management of wetlands, with the MoEF&CC providing facilitation in terms of setting policy directions, supporting creation of linkages with developmental sectors, strengthening research-management interface and building capacity of site managers and other stakeholders. The vision on integration within the NPCA is guided by the following strategies:

3.4.1 Integrated Management

Investment for the conservation of wetlands shall be on the basis of integrated management plans which secure ecosystem functioning for sustained provision of ecosystem services as well as maintenance of biodiversity. These plans will serve to integrate wetlands into sectoral developmental planning within associated catchment and coastal zones. This is in difference to present single function investment to integrated and sustainable development considering asset management planning, drainage management planning and land use planning and control.

Since the objective is to conserve a wetland and protect it from stresses and resultant degradation, it is necessary to determine the state and condition of the wetland. Baseline information needs to be therefore gathered, the areas and degree of degradation need to be determined, the causes need to be identified and measures that would restore the wetlands to the desired state need to be designed and implemented. Besides these interventions, the wetland is to be managed so that it is sustained in a sound ecological health, retains biodiversity and provides the expected ecosystem services in an efficient and effective manner.

3.4.2 Funds convergence

Funding for implementation of restoration plans will be largely through developmental sector programmes (from public as well as private sources) which have a bearing on wetlands functioning, and provide an opportunity for supporting integrated management. NPCA shall only provide the core funding required to trigger and support integrated management for prioritized wetlands.

3.4.3 Cross-Sectoral Governance

State Government / UT administration will need to put in place a nodal State / UT level authority for planning, policy making and integrated management of aquatic ecosystems in their jurisdiction. These authorities will have representation of all sectors concerned with aquatic ecosystem functioning and will also ensure support of concerned State Governments, Urban local bodies and NGO's political, technical and administrative leadership within the respective State/UT. The Wetlands (Conservation and Management) Rules, 2017 have constituted State Wetlands Authorities to ensure cross-sectoral governance and stakeholder participation.

3.5 Financial Support from Central Government

State Governments / UT administrations can seek financial assistance under NPCA for integrated management of wetlands. Financing shall be done on the basis of integrated management plans. The MoEF&CC will bear the cost of activities funded by it as per prevalent policy of Central Government to State/UTs/Special/North – Eastern state.

Each integrated management plan will identify a comprehensive set of activities that will need to be implemented to conserve and sustainably manage wetlands. The action plan must be evaluated against existing funding opportunities within

conservation and / or development sector schemes of the Central/State Government Ministries and agencies and private sector (a suggestive list is given in Annexure I). The activities which do not have any alternate source of funding, and fall within the list of core and non-core activities can be considered for financial support under NPCA (Annexure II). Overall, the core activities shall be allocated higher weightage, and be allocated 75% of the budget. The non-core activities may receive maximum 25% of the overall allocation..

In addition, the MoEF&CC will implement the following activities to enhance management effectiveness of aquatic ecosystems in the country:

3.5.1 National inventory and decision support system for conservation and management of wetlands

The Ministry shall facilitate development of national inventory on wetlands to assist State Governments / Union Territory Administrations in:

- (a) Identifying wetland locations and extent;
- (b) Assess spatial and temporal changes in wetlands extent;
- (c) Prioritize wetlands by overlaying with layers on water regimes, land use and land cover and high conservation values sites.

3.5.2 Research projects with regional / thematic relevance to support conservation and management of wetlands

The Ministry shall make available a list of priority research themes to support conservation and management of wetlands, and keeping in view MoEF&CC's existing guidelines. The MoEF&CC shall set up a process for seeking inputs of State Governments/ UT Administrations in identifying the priority research topics and organizations to implement the research.

3.5.3 Regional and national capacity building programmes to improve management effectiveness of wetlands

The MoEF&CC shall do a capacity building needs assessment based on which training workshops and other hand-holding mechanisms shall be implemented.

3.6 Institutional arrangements

The Institutional arrangements at National and State/UT levels are provided below:

3.6.1 National Level

The MoEF&CC is responsible for overall coordination of NPCA. NPCA is implemented by designated division of the Ministry. Its specific functioning include the followings:

- Providing national policy framework for conservation and sustainable management of wetlands;
- Providing financial assistance (on cost sharing basis) for implementation of activities identified in the integrated management plans;
- Providing need based advice to the State Governments / UT Administration in leveraging funds from various central government ministries and departments;
- Providing detailed guidelines and technical know-how for wetlands restoration and management;
- Funding, supporting and conducting capacity building and training programmes;
- Financing research and capacity development to support integrated management of wetlands;
- Periodic evaluation of interventions made under the programme and suggesting mid-course corrections including evaluation of management plans;
- Facilitating the development of a national inventory, and setting up an information decision support system for the management of wetlands; and,
- Communication and outreach on wetlands.

3.5.1.2 National Wetlands Committee

The National Wetlands Committee (NWC), constituted under the provisions of the Wetlands (Conservation and Management) Rules, 2017 shall be the nodal advisory body for NPCA. The composition and functions of NWC are laid down in the said Rules (Annexure III).

3.6.2 State Government / UT Administration

The primary responsibility for the conservation and sustainable management of wetlands will be with the State Governments/UT Administration. The Wetlands Authorities within States / UTs, created as per provisions of Wetlands (Conservation and Management) Rules, 2017 will be nodal agency for all matters concerned with implementation of NPCA. The composition and functions of State/UT Wetlands Authority are laid down in the said Rules (Annexure III).

3.7 Implementation Strategy

NPCA envisages creating a network of well-conserved and sustainably managed wetlands which support biodiversity and provide their full range of ecosystem services on long term basis. The implementation strategy to achieve the above is as follows:

- (a) Proactive engagement of State Governments and UT Administrations to ensure that a representative set of wetlands are identified for management. Emphasis shall be placed on wetlands which are located outside protected area network, and highly vulnerable to various anthropogenic pressures.
- (b) Capacity development and handholding support would be provided by the Ministry by holding regional and national capacity building programmes for strengthening the capacity of wetlands managers and stakeholders for effective management of wetlands.

*Bhitarkanika, one of the most diverse mangrove swamps, 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. The marshes and dense mangroves buffer communities living in and around from the impact of tropical storms and cyclones.*



4

Conditions and Process for Inclusion

4.1 Inclusion of Wetlands under NPCA

The Government of India has been implementing the National Plan for Conservation of Aquatic Eco-system (NPCA) in close collaboration with the State Governments/UT Administrations wherein wetlands are identified/ prioritized as a prerequisite for being considered for financial support.

Inclusion of a wetland under the NPCA shall be an indication that:

- (a) The State Government and the MoEF&CC recognize the significance of the wetland in terms of biodiversity values and contribution to societal well-being through wide ranging ecosystem services
- (b) The wetland requires proactive management to be in place to secure its biodiversity and ecosystem services values
- (c) The State Government, recognizing the significance of wetland, is willing to demarcate the wetland boundary, designate a dedicated nodal agency for management, develop an integrated management plan, and contribute in financial terms towards implementation of management plan
- (d) The MoEF&CC, in recognition of the significance of wetland is willing to consider providing financial and technical support towards implementation of an integrated management plan

4.2 Inclusion Criteria

Any proposal sent through State Government/ Union Territory Administration/ State Wetlands Authority/UT Wetlands Authority shall be considered for financial support under NPCA.

For all wetlands, the following criteria shall apply:

Wetlands located with urban, peri-urban and semi-urban areas

- Wetland holds some water throughout the year and with peak inundation area equivalent or greater than 5 ha; and,
- Wetland is highly degraded and cannot be put to its traditional use due to pollution resulting from discharge of domestic and /or industrial wastewater, municipal solid waste or other non-point sources of pollution. Designated best use criteria for surface waters as recommended by CPCB is provided in Annexure IV.

Wetlands located in high altitude areas (with elevations greater than 2,500 m a.m.s.l)

- Wetland has an area of 5 ha and above

Wetlands located below 2,500 m a.m.s.l elevation

- Wetland or wetland cluster has a peak inundation area of 100 ha and above, and meets atleast one of the following criteria:
- Is representative, rare or unique example of natural or nearly natural wetland in a biogeographic zone;
- Supports vulnerable, endangered or critically endangered species; or threatened ecological communities (as evaluated through IUCN Red List or any other national list);
- Supports plant and/or animal species at a critical stage in their life cycle, or provides refuge during adverse conditions;
- Supports populations of plant/ or animal species important for maintaining the biological diversity of a particular biogeographic region;

- Regularly supports 20,000 or more waterbirds;
- Regularly supports 1% of individuals in a population of one species or sub-species of waterbirds or is an important breeding site for rare/migratory bird species;
- Is an important source of food for fishes, spawning ground, nursery and /or migration path on which fish stocks/ either within the wetlands or elsewhere depend;
- Provides important hydrological functions as a source of water, regulates hydrological extremes, recharges groundwater, buffers floods and purifies water;
- Is an important source of livelihoods for communities living in and around it;
- Is of significant cultural/ religious / recreation value.

Wetlands smaller than the above mentioned area thresholds may be considered by the Central Government on recommendation of the State/UT Wetland Authority.

4.3 Inclusion process

For wetlands which fulfil the criteria set above, a Brief Document (Annexure V) may be considered by the concerned State Government / Union Territory Administration.

An undertaking by the State Government to provide commitment for State share of the cost of implementation of integrated management plan should also be provided. Such undertaking should also indicate the justification for identification of the wetland and it's significance.

A complex of two lakes (Upper and Lower Lakes), the Bhoj wetland is a source of water to Bhopal City and is a key recreational amenity. Belt of deciduous forest along the south-eastern boundary of the wetland comprises Van Vihar National Park. In peak seasons, over 35,000 waterbirds can be seen here.



5 Steps for Submission of Proposals for Financial Support

State Governments / UT Administrations can apply for funds for management of wetlands in following steps:

Step 1: Submission of proposal for inclusion of site for funding under NPCA

A proposal for inclusion of a wetland under NPCA along with Brief Document should be forwarded through the State govt./ Union Territory Administration/State Wetlands Authority/ UT Wetlands Authority with an undertaking to provide their share of cost of implementation of IMP by State Government.

For wetlands attracting the Wetlands Rules, 2017, the Brief Document should have been prepared and submitted to State/UT Wetlands Authority for notification under 2017 Rules. A documentary evidence in this regard is also required to be submitted.

Step 2: Formulation of Integrated Management Plan

- Upon approval of inclusion of site under the NPCA, the State Government/ Union Territory Administration/ State Wetlands Authority/UT Wetlands Authority will be required to submit an IMP in accordance with the steps and format given at Annexure VI, The Integrated Management Plan for the site outlining specific activities for integrated management is the most important component of NPCA. The IMP is envisaged to be a document with multiple functions, including identification of resource requirement, generating baseline information, communication with stakeholders and ensuring compliance with regulatory frameworks and policy commitments,
- identification of the nature of degradation of the aquatic ecosystems, sources of degradation, the measures that need to be taken to conserve and restore the wetlands, the design of these measures, the cost estimates and the expected outcome;
- Each wetland has its distinct characteristics, and thereby it is important that their site management needs are identified using a diagnostic method based on critical evaluation of status and trends of site's ecological, hydrological, socio-economic and institutional features;
- It is recommended that IMPs may be prepared by engaging expert agencies and in full consultation with the stakeholders, particularly dependent communities. The State Governments / UT Administration shall commission such agency at their behest;
- IMP should contain a detailed action plan, including year wise list of activities proposed to be carried out, costs, and sources of funding. All existing funding sources from Central and State Governments and private sectors under which financial support for the said activity can be accessed should be identified;
- Time frame for implementation of IMP should commensurate with the complexity of site, and be sufficient to bring about significant positive change in ecosystem features. In most cases, a time frame of 3 – 6 years is expected.
- All IMPs should categorically list specific ecological, hydrological, socioeconomic and institutional indicators, periodic measurement of which shall indicate progress made in achieving management plan goal and objectives. Provisions for measuring and reporting on these performance indicators should be made within the IMP.
- A checklist for submission of IMP is provided at Annexure VII

Step 3: Integrated Management Plan finalization and execution of agreements

- The IMP will be appraised by independent appraisal agencies for funding support.
- A tripartite MoU between Government of India, State Government / UT Administration and agency identified for implementation of IMP will be signed containing agreements on sharing of costs, timely implementation of IMPs, and post project sustainability. This MoU will be the basis of providing grants to State Governments /UT Administrations (Annexure VIII).
- All management, operation and maintenance expenses shall be part of IMP and costs thereon shall be borne entirely by State Government / UT Administration for which additional resources will have to be demonstrably raised and committed to operations and maintenance. If there is a cost overrun in a project because of delay, inflation or any other reasons, the same shall be born by the State/ UT Government. The contribution of Government of India shall be limited only to the amount initially agreed to in the Administrative Approval and Expenditure Sanction Order.

Annexure I: Suggestive list of Central and State Government schemes which can support implementation of NPCA projects

Name of Scheme	Areas for convergence	Implementing Ministry
Atal mission for rejuvenation and urban transformation (AMRUT)	Enhancing amenity value of cities by creating and upgrading green spaces, parks and recreation centres, sewage facilities	Ministry of Urban Development
Heritage City Development and Augmentation Yojana (HRIDAY)	Holistic development of services like such as water supply, sanitation, roads, etc.	
Smart Cities Mission	Area-based development for improvement, renewal and greenfield development.	
Different Schemes	Green	Ministry of Panchayati Raj
National Afforestation Programme	Catchment conservation	Ministry of Environment, Forest and Climate Change
Green India Mission	Catchment conservation	
National Action Programme to Combat Desertification	Assessment and mapping of land degradation, Drought Preparedness and Mitigation in the Context of Climate Change	
National Afforestation and Eco-Development Board (NAEB)	Ecological restoration and eco-development activities	
National Coastal Management Programme	Conserve and protect coastal stretches and to promote Sustainable development	
National Mission on Himalayan Studies	Conservation of Himalayan Ecosystem and sustainable development	Ministry of Water Resources, River Development & Ganga Rejuvenation
Repair, Renovation and Restoration of Water Bodies	Restoration of aquatic ecosystems used as sources of drinking water	
Natural Resources Management, Rainfed Farming System, Horticulture, Integrated Nutrient Management	Sustainable agriculture	Ministry of Agriculture and Farmers Welfare & Department of Animal Husbandry, Dairying and Fisheries (DADF)
National Scheme on “Welfare of Fishermen” and “Development of Inland Fisheries”	Sustainable fisheries development	
Swachh Bharat Mission (SBM)	Development of sanitation infrastructure to improve water quality of Urban and Rural Ecosystems.	Ministry of Urban Development & Ministry of Drinking Water and Sanitation
National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD)	Beautify and improve amenities and infrastructure at major pilgrimage sites in the country	Ministry of Tourism
State Government schemes on fisheries, agriculture, forestry, wildlife protection, irrigation development etc	Various components of DPR	Various State Governments and Their Ministries Concerned.

Annexure II: Core and non-core activities corresponding to management action plan components

Management Plan Components	Core Activities	Non-core activities
Wetland boundary delineation and demarcation	<ul style="list-style-type: none"> Wetlands boundary survey and mapping Wetlands demarcation using geotagged pillars 	<ul style="list-style-type: none"> Fencing of wetlands boundary Development of promenade for urban wetlands
Catchment conservation	<ul style="list-style-type: none"> Afforestation and aided regeneration within direct catchments Small scale engineering structures (such as gully plugging, check dams, gabion structures, silt traps) Monitoring pilot watersheds to assess degree of reduction in siltation and improvement of moisture regimes 	<ul style="list-style-type: none"> Large engineering structures within wetlands direct or indirect catchment
Water management	<ul style="list-style-type: none"> Assessment of water requirements of wetlands and aligning operational rules for hydraulic structures for achieving the desired regime. Dredging of critically silted up wetlands areas based on consideration of bathymetric profiles and impacts on ecosystem components and processes. Dredging of inflowing channels to improve water availability in the wetland Constructed wetlands to treat pollution from diffuse sources Construction of Sewage Treatment Plants 	<ul style="list-style-type: none"> Procurement of machinery Construction of toilets and bathing ghats Operation and maintenance expenses
Biodiversity conservation and habitat management	<ul style="list-style-type: none"> Assessment of habitat quality and species interactions Population assessment of wetlands dependent species Enforcement of regulation Animal disease surveillance Regulating species invasion by biological and habitat manipulation Economic use of harvested biomass of invasive species 	<ul style="list-style-type: none"> Construction of rescue centers Mechanical removal of invasive species biomass
Sustainable resource development and livelihood improvement	<ul style="list-style-type: none"> Sustainable capture fisheries within carrying capacity of the wetland Wetlands vegetation based micro-enterprise Community based eco-tourism linked with wetlands Conservation of cultural heritage linked with wetlands Micro-enterprise development for wetlands dependent communities to diversify livelihoods 	<ul style="list-style-type: none"> Aquaculture Promotion of organic agriculture in wetlands catchments Promotion of water efficient agriculture systems in wetlands catchments Promotion of ornamental fisheries based culture Development of fish nurseries and seed banks Development of tourism related infrastructure

National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines

Management Plan Components	Core Activities	Non-core activities
		<ul style="list-style-type: none"> • Development of water, sanitation and health infrastructure for wetland communities • Micro-enterprise development for communities not-directly dependent on wetlands
Institutional development	<ul style="list-style-type: none"> • Wetlands monitoring and assessment • Research addressing specific wetlands management needs • Construction of wetlands interpretation center • Organization of World Wetlands Day and other events to enhance appreciation of wetlands values and functions • Publication of Ecosystem Health Report Cards or any other assessment of wetlands condition 	<ul style="list-style-type: none"> • Construction of laboratories • Refurbishing of existing wetlands interpretation centers • Infrastructure development for Wetlands Authorities • Meetings of State Wetlands Authority

Annexure III: Wetlands (Conservation and Management) Rules, 2017

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 26th September, 2017

G.S.R. 1203(E).—Whereas the wetlands, vital parts of the hydrological cycle, are highly productive ecosystems which support rich biodiversity and provide a wide range of ecosystem services such as water storage, water purification, flood mitigation, erosion control, aquifer recharge, microclimate regulation, aesthetic enhancement of landscapes while simultaneously supporting many significant recreational, social and cultural activities, being part of our rich cultural heritage;

And whereas many wetlands are threatened by reclamation and degradation through drainage and landfill, pollution (discharge of domestic and industrial effluents, disposal of solid wastes), hydrological alteration (water withdrawal and changes in inflow and outflow), over-exploitation of their natural resources resulting in loss of biodiversity and disruption in ecosystem services provided by wetlands;

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And whereas clause (g) of article 51A of the Constitution stipulates that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures;

And whereas the Environment (Protection) Act, 1986 is a comprehensive legislation to provide protection and improvement of the environment, including inter-alia, wetlands, and for matters connected therewith;

And whereas the National Environment Policy, 2006 recognises the ecosystem services provided by wetlands and emphasizes the need to set up a regulatory mechanism for all wetlands so as to maintain their ecological character, and ultimately support their integrated management;

And whereas India is a signatory to the Ramsar Convention on Wetlands and is committed to conservation and wise use of all wetlands within its territory;

And whereas the Central Government has published the Wetlands (Conservation and Management) Rules, 2010, vide number G.S.R. 951(E), dated the 4th December, 2010;

And whereas conservation and wise use of wetlands can provide substantial direct and indirect economic benefits to state and national economy, and thereby the Central Government stands committed to mainstreaming full range of wetland biodiversity and ecosystem services in development planning and decision making for various sectors;

And whereas the State Governments and Union Territory Administrations need to take into account wetland ecosystem services and biodiversity values likewise within their developmental programming and economic well-being, also taking into cognizance that land and water, two major ecological constituents of wetland ecosystems, are enlisted as State subjects as per the Constitution;

And whereas the Central Government considered it necessary to supersede the Wetlands (Conservation and Management) Rules, 2010 for effective conservation and management of wetlands in the country;

And whereas the Central Government had, in exercise of the powers conferred by section 25, read with subsection (1) and clause (v) of sub-section (2) and sub-section (3) of section 3 of the Environment (Protection) Act, 1986, published the draft Wetlands (Conservation and Management) Rules, 2016, vide number G.S.R. 385 (E) dated 31st March, 2016 for information of the public likely to be affected thereby; and notice was given that the said draft rules would be taken into consideration by the Central Government after expiry of a period of sixty days from the date on which copies of the Gazette notification is made available to the public;

And whereas the Central Government has received the suggestions and objections from the State Governments, Union Territories and its organisations, individuals and civil society organisations on the draft Wetlands (Conservation and Management) Rules, 2016;

And whereas the suggestions and objections received in response to the above mentioned draft rules have been duly considered by the Central Government in consultation with State Governments and Union Territory Administrations.

Now, therefore, in exercise of the powers conferred by section 25, read with sub-section (1) and clause (v) of sub-section (2) and sub-section (3) of section 3 and section 23 of the Environment (Protection) Act, 1986 and in supersession of the Wetlands (Conservation and Management) Rules, 2010, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules for conservation and management of wetlands, namely:—

1. Short title and commencement.—

- (1) These rules may be called the Wetlands (Conservation and Management) Rules, 2017.
- (2) These shall come into force from the date of their publication in the Official Gazette.

2. Definitions.—

- (1) In these rules, unless the context otherwise requires,-
 - (a) "Act" means the Environment (Protection) Act, 1986;
 - (b) "Authority" means the State Wetlands Authority or Union Territory Wetlands Authority, as the case may be;
 - (c) "Committee" means the National Wetlands Committee referred to in rule 6;
 - (d) "ecological character" means the sum of ecosystem components, processes and services that characterise the wetlands;
 - (e) "integrated management plan" means a document which describes strategies and actions for achieving wise use of the wetland and the plan shall include objectives of site management; management actions required to achieve the objectives; factors that affect, or may affect, the various site features; monitoring requirements for detecting changes in ecological character and for measuring the effectiveness of management; and resources for management implementation;
 - (f) "Ramsar Convention" means the Convention on Wetlands signed at Ramsar, Iran in 1971;
 - (g) "wetland" means an area 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 tide does not exceed six meters, but does not include river channels, paddy fields, human-made water bodies/tanks specifically constructed for drinking

water purposes and structures specifically constructed for aquaculture, salt production, recreation and irrigation purposes;

- (h) “wetlands complexes” means two or more ecologically and hydrologically contiguous wetlands and may include their connecting channels/ducts;
- (i) “wise use of wetlands” means maintenance of their ecological character, achieved through implementation of ecosystem approach within the context of sustainable development;
- (j) “zone of influence” means that part of the catchment area of the wetland or wetland complex, developmental activities in which induce adverse changes in ecosystem structure, and ecosystem services.

(2) The words and expressions used in these rules and not defined, but defined in the Act, shall have the meanings assigned to them in the Act.

3. Applicability of rules.— These rules shall apply to the following wetlands or wetlands complexes, namely:—

- (a) wetlands categorised as 'wetlands of international importance' under the Ramsar Convention;
- (b) wetlands as notified by the Central Government, State Government and Union Territory Administration:

Provided that these rules shall not apply to the wetlands falling in areas covered under the Indian Forest Act, 1927, the Wild Life (Protection) Act, 1972, the Forest (Conservation) Act, 1980, the State Forest Acts, and the Coastal Regulation Zone Notification, 2011 as amended from time to time.

4. Restrictions of activities in wetlands.—

- (1) The wetlands shall be conserved and managed in accordance with the principle of 'wise use' as determined by the Wetlands Authority.
- (2) The following activities shall be prohibited within the wetlands, namely,-
 - (i) conversion for non-wetland uses including encroachment of any kind;
 - (ii) setting up of any industry and expansion of existing industries;
 - (iii) 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 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;
 - (iv) solid waste dumping;
 - (v) discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements;
 - (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; and,
 - (vii) poaching.

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Provided that the Central Government may consider proposals from the State Government or Union Territory Administration for omitting any of the activities on the recommendation of the Authority.

5. Wetlands Authorities.—

- (1) The Central Government hereby constitutes the State Wetlands Authority in each State with the following members, namely:—
 - (i) Minister In-charge of the Department of Environment/Forests of the State Government or Minister Incharge of the Department handling wetlands - Chairperson;
 - (ii) Chief Secretary of the State or Additional Chief Secretary equivalent - Vice Chairperson;
 - (iii) Secretary in-charge of the Department of Environment - Member ex-officio;
 - (iv) Secretary in-charge of the Department of Forests - Member ex-officio;
 - (v) Secretary in-charge of the Department of Urban Development - Member ex-officio;
 - (vi) Secretary in-charge of the Department of Rural Development - Member ex-officio;
 - (vii) Secretary in-charge of the Department of Water Resources - Member ex-officio;
 - (viii) Secretary in-charge of the Department of Fisheries - Member ex-officio;
 - (ix) Secretary in-charge of the Department of Irrigation and Flood Control - Member ex-officio;
 - (x) Secretary in-charge of the Department of Tourism - Member ex-officio;
 - (xi) Secretary in-charge of the Department of Revenue - Member ex-officio;
 - (xii) Director, State Remote Sensing Centre - Member ex-officio;
 - (xiii) Chief Wildlife Warden - Member ex-officio;
 - (xiv) Member Secretary, State Biodiversity Board - Member ex-officio;
 - (xv) Member Secretary, State Pollution Control Board - Member ex-officio;
 - (xvi) Additional Principal Chief Conservator of Forests of the Regional Office of Ministry of Environment, Forest and Climate Change - Member ex-officio;
 - (xvii) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the State Government; and
 - (xviii) Additional Secretary/Joint Secretary/Director in the Department of Environment/Forests or Department handling wetlands - Member Secretary.

- (2) The Central Government hereby constitutes the Union Territory Wetlands Authority for each Union Territory with the following members, namely:—
 - (i) Administrator or Chief Secretary of the Union Territory - Chairperson;
 - (ii) Secretary in-charge of the Department of Environment - Vice Chairperson;
 - (iii) Secretary in-charge of the Department of Forests - Member ex-officio;
 - (iv) Secretary in-charge of the Department of Urban Development - Member ex-officio;
 - (v) Secretary in-charge of the Department of Rural Development - Member ex-officio;
 - (vi) Secretary in-charge of the Department of Water Resources - Member ex-officio;
 - (vii) Secretary in-charge of the Department of Fisheries - Member ex-officio;
 - (viii) Secretary in-charge of the Department of Irrigation and Flood Control - Member ex-officio;

- (ix) Secretary in-charge of the Department of Tourism - Member ex-officio;
 - (x) Secretary in-charge of the Departments of Revenue - Member ex-officio;
 - (xi) Director, Remote Sensing Centre - Member ex-officio;
 - (xii) Member Secretary, Union Territory Pollution Control Committee - Member ex-officio;
 - (xiii) Member Secretary, Biodiversity Board of the UT - Member ex-officio;
 - (xiv) Chief Wildlife Warden - Member ex-officio;
 - (xv) Additional Principal Chief Conservator of Forests of the Regional Office of Ministry of Environment, Forest and Climate Change- Member ex-officio;
 - (xvi) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the Union Territory Administration; and
 - (xvii) Additional Secretary/Joint Secretary/Director in the Department of Environment/Forests or Department handling wetlands - Member Secretary.
- (3) The State Wetlands Authority or Union Territory Wetlands Authority may co-opt other members, not exceeding three in number, if required.
- (4) The State Wetlands Authority or Union Territory Wetlands Authority shall exercise the following powers and perform the following functions, namely:-
- (a) prepare a list of all wetlands of the State or Union Territory 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 a period of 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 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; wise use being a principle for managing these ecosystems which incorporates sustainable uses (such as capture fisheries at subsistence level or harvest of aquatic plants) as being compatible with conservation, if ecosystem functions (such as water storage, groundwater recharge, flood buffering) and values (such as recreation and cultural) are maintained or enhanced;
 - (h) review integrated management plan for each of the notified wetlands (including trans-boundary wetlands in coordination with Central Government), and within these plans consider continuation and support to traditional uses of wetlands which are harmonized with ecological character;
 - (i) in cases wherein lands within boundary of notified wetlands or wetlands complex have private tenancy rights, recommend mechanisms for maintenance of ecological character through promotional activities;
 - (j) identify mechanisms for convergence of implementation of the management plan with the existing State/Union Territory level development plans and programmes;
 - (k) ensure enforcement of these rules and other relevant Acts, rules and regulations and on half-yearly basis (June and December of each calendar year) inform the concerned State Government or

Union Territory 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 nodal authority for all wetland specific authorities within the State or Union Territory Administration;
- (n) issue necessary directions for conservation and sustainable management of wetlands to the respective implementing agencies;

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- (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/Union Territory Administration.
- (5) The concerned Department of the State Government or Union Territory shall provide all necessary support and act as nodal Department and Secretariat to the Authority.
- (6) The Authority shall, within ninety days of publication of these rules, shall constitute,—
- (a) a technical committee to review brief documents, management plans and advise on any technical matter referred by the Wetland Authority; and
 - (b) a grievance committee consisting of four members to provide a mechanism for hearing and forwarding the grievances raised by public to the Authority;
- (7) The Committees referred to in sub-rule (6) shall meet at least once in every quarter to perform their functions.
- (8) The Authority shall meet at least thrice in a year.
- (9) The term of non-official members of the Authority nominated by State Government or Union Territory Administration, shall be for a period not exceeding three years.

6. Constitution of National Wetlands Committee.—

- (1) The Central Government, hereby constitutes the National Wetlands Committee with the following members, namely:—
- (i) Secretary, Ministry of Environment, Forest and Climate Change, Government of India - Chairperson;
 - (ii) Special Secretary or Additional Secretary dealing with wetlands, Ministry of Environment, Forest and Climate Change, Government of India-Vice Chairperson;
 - (iii) Additional Director General, Wildlife, Ministry of Environment, Forest and Climate Change, Government of India - Member ex-officio;
 - (iv) Adviser or Joint Secretary dealing with wetlands, Ministry of Environment, Forest and Climate Change - Member ex-officio;

- (v) Joint Secretary, Ministry of Tourism, Government of India- Member ex-officio;
 - (vi) Joint Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India- Member ex-officio;
 - (vii) Joint Secretary, Ministry of Agriculture and Farmers Welfare, Government of India- Member ex-officio;
 - (viii) Joint Secretary, Ministry of Social Justice and Empowerment, Government of India- Member ex-officio;
 - (ix) Joint Secretary, Ministry of Urban Development, Government of India- Member ex-officio;
 - (x) Joint Secretary, Ministry of Rural Development, Government of India- Member ex-officio;
 - (xi) The Chairman, Central Pollution Control Board - Member ex-officio;
 - (xii) Director, Zoological Survey of India or Scientist F- Member ex-officio;
 - (xiii) Director, Botanical Survey of India or Scientist F- Member ex-officio;
 - (xiv) Director, Space Application Centre, Ahmedabad or Scientist F- Member ex-officio;
 - (xv) Member, Central Water Commission - Member ex-officio;
 - (xvi) Adviser, Niti Aayog - Member ex-officio;
 - (xvii) Three representatives of State Government or Union Territory Administration on a rotational basis for a tenure of two years each;
 - (xviii) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning & socioeconomics; and
 - (xix) Director/Additional Director/Joint Director dealing with wetlands, Ministry of Environment, Forest and Climate Change - Member Secretary.
- (2) The National Wetlands Committee may co-opt other members, not exceeding three in number, if required.
- (3) The National Wetlands Committee shall perform the following functions, namely:-
- (a) advise the Central Government on appropriate policies and action programmes for conservation and wise use of wetlands;
 - (b) evolve norms and guidelines for integrated management of wetlands based on wise use principle;
 - (c) monitor implementation of these rules by the Authority;
 - (d) advise the Central Government on proposals received from State Governments or Union Territory Administrations for omission of the prohibited activities as referred in sub-rule (2) of rule 4;
 - (e) recommend designation of wetlands of international importance under Ramsar Convention;
 - (f) recommend trans-boundary wetlands for notification;
 - (g) review progress of integrated management of Ramsar sites and transboundary wetlands;
 - (h) advise on collaboration with international agencies on issues related to wetlands; and
 - (i) advise on any other matter suo-moto, or as referred by the Central Government.
- (4) The tenure of non-official members of the Committee shall not exceed three years.
- (5) The Committee shall meet at least once in every six months.

7. Delegation of powers and functions to the State Governments and Union Territory Administrations.—

- (1) The concerned Department of the State Government or Union Territory Administration shall, within a period of one year from the date of publication of these rules, prepare a Brief Document for each of the wetland identified for notification, providing:—
 - (a) demarcation of wetland boundary supported by accurate digital maps with coordinates and validated by ground truthing;
 - (b) demarcation of its zone of influence and 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;
- (2) Based on the Brief Document, the Authority shall make recommendations to the State Government or Union Territory Administration for notifying the wetlands.
- (3) The State Government or Union Territory Administration shall, after considering the objections, if any, from the concerned and affected persons, notify the wetlands in the Official Gazette, within a period not exceeding 240 days from the date of recommendation by the Authority.
- (4)
 - (a) In case of trans-boundary wetlands, the Central Government shall coordinate with concerned State Governments and Union Territory Administrations to prepare the Brief Document containing information as listed in sub-rule (1).
 - (b) Based on the Brief Document, the National Wetlands Committee shall make recommendations to the Central Government for notification of the wetland.
 - (c) The Central Government shall, after considering the objections, if any, from the concerned and affected persons, notify the wetlands in the Official Gazette, within a period not exceeding 240 days from the date of recommendation by the Committee.

THE GAZETTE OF INDIA: EXTRAORDINARY [PART II—SEC. 3(i)]

- (5)
 - (a) The Central Government shall create a dedicated web portal for information relating to wetlands.
 - (b) The Central Government, State Government and Union Territory Administration shall upload all relevant information and documents pertaining to wetlands in their jurisdiction.

[F. No. J-22012/78/2003-CS (W) Pt. V]

Dr. A. DURAISAMY, Scientist 'G'

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Annexure IV: Designated Best Use Criteria for Surface Waters as Recommended by CPCB

Designated Best Use	Class of Criteria	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	<ol style="list-style-type: none"> Total Coliforms Organism MPN/100ml Shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Outdoor bathing (Organised)	B	<ol style="list-style-type: none"> Fecal Coliforms organism MPN/100 ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen Demand 5 mg/l or more Biochemical Oxygen Demand 5 days 20°C 3 mg/l or less
Drinking water source after conventional treatment and disinfection	C	<ol style="list-style-type: none"> Total coliforms organism MPN/100 ml shall be 5000 or less pH between 6 to 9 Dissolved oxygen 4 mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Propagation of Wild life and Fisheries	D	<ol style="list-style-type: none"> pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	<ol style="list-style-type: none"> pH between 6.0 to 8.5 Electrical Conductivity at 25°C micro mhos/cm Max 2250 Sodium absorption Ratio Max 26 Boron Max 2 mg/l
	Below E	Not Meeting A, B, C, D, & E Criteria

Annexure V: 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) _____

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

Category	Subcategory
<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

2.2 Depth (m) Average _____ Maximum _____

2.3 Elevation (m above mean sea level) _____ m

2.4 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

2.5 Climatic setting

a) Annual Rainfall /Snowfall(mm) _____

b) Temperature (°C) Minimum _____ Maximum _____

c) Humidity (%) Minimum _____ Maximum _____

2.5 Area of zone of influence (in ha) _____

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

Forests _____ %

Plantation _____ %

Agriculture _____ %

Settlements (Rural) _____ %

Settlements (Urban) _____ %

Industrial _____ %

2.7 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	

National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (upto 50 words for each category)
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	

National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines

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)
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	

National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines

Threat	Degree	Present or Potential	Additional information, if any
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 Wetlands Rules)

Activity	Prohibited within wetlands or zone of influence	Details of specific area wherein activity is prohibited	Name of department / agency responsible for regulation	Additional information, if any
	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			

Section 8: Activities Proposed to be regulated

Activity	Place a tick mark if relevant	Regulation within wetlands or zone of influence	Level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation	Additional information, if any
Withdrawal of water / impoundment/diversion or any other hydrological intervention	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Harvesting of resources (living / non-living)	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Grazing	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			

National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines

Activity	Place a tick mark if relevant	Regulation within wetlands or zone of influence	Level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation	Additional information , if any
Discharge of treated sewage/ effluent / wastewater	<input type="checkbox"/>	<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"/>	<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"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			
Any other, please list	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			

Section 9: 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	

National Plan for Conservation of Aquatic Ecosystems (NPCA) Guidelines

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	

Section 10: 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, beyond those already 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

Annexure VI: Guidelines for Preparation of Integrated Management Plans

Wetlands provide wide-ranging ecosystem services which 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.

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
- Demonstrate that management is effective and efficient

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

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

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 	<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)
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

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 update 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

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

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

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

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.

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
- e) Gaps and challenges

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

Step 5: Setting management objective

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 must be capable of addressing the threats identified in the previous step, and ensuring maintenance of wetland in a desired healthy State. While defining objectives, the following must be considered:

- a) Measurable – 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 %)

Achievable – 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%).

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). The processes are generally used to define the action plan for the management objective.

Step 6: Developing a monitoring and evaluation plan

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

For each of management objectives, a set of performance indicators should be identified. The performance indicators provide evidence on the condition of one or a set of features (Table 2). When the full range of performance indicators for all the management objectives have been identified, it is useful to combine them into a monitoring plan to enable systematic capture of the monitoring outcomes and use in informing the planning process. Some examples are provided below:

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

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.

Besides setting up performance indicators for the management plan, it is also essential to set up a monitoring system for the wetland in order to be able to assess changes in ecosystem condition over a period of time. A generic listing of monitoring parameter, method and frequency is presented in the Table 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.

Table 3: Parameters for wetlands monitoring

Wetland feature	Monitoring parameter	Monitoring method	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	• Climate	Data from the nearest weather station	Atleast monthly
	• Land use and Land Cover*	Remote sensing and ground truthing	Once in 3 years
	• Total sediment yield	Stream gauging station	Monthly
	• Total nutrient yield	Stream gauging station	Monthly
Hydrological regimes	• Water inflow and outflow*	Stream gauging station	Monthly
	• Waterholding capacity	Bathymetric survey	Once in 5 years
	• Peak inundation	Remote sensing and ground truthing	Once in 2 years
	• Dissolved Oxygen, Biological Oxygen Demand *	Data from water quality sampling stations	Atleast monthly
	• Chemical Oxygen Demand **	Data from water quality sampling stations	Atleast monthly
	• Number of point sources discharging untreated sewage into the wetland **	Surveys	Once a year
Biodiversity and Habitat	• Population of majorwetland dependent species groups (such as waterbirds, mammals etc.)*	Mid-winter counts	Once a year
	• Habitat use by key species	Physical surveys	Once a year
	• Number of migratory species using the wetland as a habitat	Physical surveys	Once a year
	• Area under invasive macrophyte**	Physical surveys	Once a year
Ecosystem Services	• Annual Fish yield	Sampling	Monthly samples collated into an annual estimate
	• Number of tourists	Surveys	Monthly samples collated into an annual estimate
	• Volume of surface water abstracted from wetland	Hydrographic surveys	Monthly samples collated into an annual estimate
	• Volume of groundwater recharged	Hydrographic surveys	Once a year

Wetland feature	Monitoring parameter	Monitoring method	Frequency
	<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

Step 7 – Developing an action plan

The last stage of the management planning process includes defining the action plan, or specific interventions that address the identified management objectives. The action plan should be developed in two steps. The first step should be a comprehensive listing of activities which are required to be implemented. In the second stage, the activities should be filtered with reference to core and non-core activities prescribed under NPCA, and detailed further.

7.1 Preparing a comprehensive list of activities

A generic listing of activities that may be required for integrated management of wetlands is presented in Table 3. Each activity should have a short description indicating why the activity is required, where is the activity to be implemented, and what is the implementation priority. Following must be kept in mind:

- Ecosystem-based interventions should be promoted as far as possible
- Engineering interventions in wetlands should be taken up in a limited manner, with impact assessments conducted for all major works
- Operations and maintenance of all structural works should be included in project design 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 aquatic ecosystems 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. Only 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 treatment of point sources of pollution	Mostly recommended for wetlands in the urban and peri-urban setting. Provision of comprehensive sanitation and safe drinking water coverage to communities living around the aquatic ecosystem should be ensured. 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.
	Construction and operation of hydraulic structures for maintenance of water regimes and flood control	For each significant structure, detailed 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

Management Plan component	Activities	Key considerations
	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	A mix of mechanical and biological methods for controlling species invasion should be used. For plant invasives, economic utilization alongwith physical removal should be included.
Sustainable resource development and livelihood improvement	Microenterprise development for reducing dependence on wetlands 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 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
	Research	For each site, key research areas to support management needs should be identified and included in the management plan

7.2 Preparing an action plan for NPCA support

From the generic list compiled under the previous steps, activities which fall within the list of core and non-core activities covered under the NPCA should be filtered out and elaborated. Following details should be included:

- 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 8: Developing budget and financing plan

A complete costing of the Integrated Management Plan item wise should 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, bar and PERT charts for the works/activities should be prepared. For each of the activity, an analysis of complementarity with ongoing development or conservation sector schemes should be done to assess the extent of funding that can be generated through convergence with these schemes. Opportunities for private sector participation should also be identified. 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

Once the total budget has been prepared, a mapping of funds available from various government schemes, international and national donors and private sector may be presented in the following format.

Table 6: Analysis of convergence funding

Activity	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)

The management plan proposed to be covered under NPCA should be detailed in the Table 7. For each costs item, the relevant basis or schedule of rates may be referenced. Funds requirement should be spread across the entire management plan implementation duration. It may be noted that core funds may be allocated not less than 75% of the budget, and non-core upto 25% of the budget.

Table 7: Yearwise breakup of requirement of funds required from NPCA

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

Format for compiling Integrated Management Plan

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
- Funds requested from the MoEFCC

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	2.1 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

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Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
3. Evaluation of wetlands features	3.1 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
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

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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 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
8. Budget and activity phasing	8.1 Activity linked budget	Present a summary budget in line with Table 5 Provide details of funding available from convergence sources in line with Table 6 Provide detailed budget for NPCA in line with Table 7	Step 8
	8.2 Time planning	Present a monthly Gantt Chart for management plan implementation	Step 8

Annexure VII: 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 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

Annexure VIII: Format for Tripartite Memorandum of Understanding for implementation of Integrated Management Plans

(to be signed on Rs. 100/- Non Judicial Stamp Paper)

MEMORANDUM OF UNDERSTANDING (MOU)

Between

THE MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVERNMENT OF INDIA

THE STATE GOVERNMENT OF MAHARASHTRA

And

THE IMPLEMENTING AGENCY (IA) –

This MoU provides a framework of commitments by concerned stakeholders not only for successful implementation of the project, on '_____' (project name) at _____ (name of place), but also for proper Operation and Maintenance (O&M) of the assets created. This agreement lays down the conditions, which the State Government and the Implementing Agency will undertake on the basis of the financial support provided by Government of India through the Ministry of Environment, Forest & Climate Change (MoEF&CC).

THIS AGREEMENT is made on this _____ day of ____ (month), ____ (year) between the Government of India, through the MoEF&CC,

and

The State Government of Maharashtra through its _____ (Name of the Department)

and

_____ (name of Implementing Agency), the Implementing Agency (IA).

WHEREAS

The MoEF&CC will provide financial support to the State Government in their efforts for '_____' (project name) at _____ (name of place), under their jurisdiction.

The _____ has committed to provide the State's share of the capital cost of the project

NOW THE PARTIES WITNESSED AS FOLLOWS:

1. MoEF&CC shall release the first installment of Rs. _____ (___% of Central Share) of grant to the State Government/UT Administration upon signing of the MoU and when the corresponding State Share is deposited by (IA) in a separate account and a proof is submitted in this regard to the Ministry.
2. The release of further installments of funds will be performance based, and will depend on submission of physical and financial progress reports and proper Utilization Certificates as well as on fulfillment of conditions as set out in Administrative Approval & Expenditure Sanction (AA&ES) and the first installment.

3. MoEF&CC shall release subsequent installments of grant to the State Government after the corresponding State Share is deposited by (IA) and a proof is submitted in this regard to the Ministry.
4. The (IA) will bear 40% of the cost of the project or their share as decided from time to time. (IA) (O&M Agency) shall bear the costs for full O&M and also responsible to carry out O&M after implementation of the project.
5. The State Government will also ensure commitment from (IA) (O&M Agency) to take over the assets of the project on completion of project.¹¹⁹
6. The State Government will constitute a Project Review Committee headed by the Secretary of the Nodal Department for reviewing the progress of the project on quarterly basis. A representative of MoEF&CC will be a member of this Committee.
7. (IA) will coordinate with ULBs (Urban Local Bodies) as well as other agencies to ensure synergy between programs like Jawaharlal Nehru National Urban Renewal Mission / Urban Infrastructure Development Scheme for Small and Medium Towns and approved components under the NPCA (National Plan for Conservation of Aquatic Eco-systems).
8. The State Government and the (IA) will be responsible for implementing, monitoring and reporting under the project.
9. The State Government shall be responsible for necessary coordination mechanism between the IA and ULBs.
10. The State Government will ensure that the Physical Progress, Expenditure Reports and Utilization Certificates are furnished by the IA to MoEF&CC on a quarterly basis. In case the IA fails to submit such a report, further installment of GoI's share may be withheld, until such submission.
11. MoEF&CC or any agency nominated by it, may undertake periodic site visits to ascertain the progress of the project and compliance of the conditions in the AA&ES and release of installments.
12. The State Government and the IA shall institute mechanism to ensure timely completion of the project.
13. The State Government will provide certification of completion of the project works.
14. In case of dispute between the parties, the matter will be resolved through mutual discussion.
15. In case of any breach regarding the terms and conditions of the MoU, MoEF&CC shall be entitled to withhold release of subsequent installments of the grant.
16. The funds routed through MoU mechanism will be liable to statutory audit by the Controller and Auditor General of India.
17. This MoU will be effective from the date of signing and would remain operative unless terminated by parties concerned by mutual consent.

SIGNATORIES

For Government of India, through Joint Secretary, Ministry of Environment, Forest & Climate Change

Name & Designation

For State Government, through State Secretary of Nodal Department

Name & Designation

For Implementing Agency, through Commissioner, _____ Municipal Corporation/other bodies

Name & Designation