
**LEGAL EFFICACY OF "PALLIKARANAI MODEL": A TIME-SERIES
ANALYSIS OF ENCROACHMENT REMOVAL AND WETLAND
RESTORATION IN URBAN CHENNAI**

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ABSTRACT:

Urban wetlands are delicate ecological units that are getting damaged by fast urbanisation, encroachment, and poor governance. The Pallikaranai Marshland in Chennai, which is one of the largest wetlands in South India, has gained global attention as a study area in regard to the interplay of law, policy, and ecological restoration. The present paper is called Legality of the Pallikaranai Model: A Time-Series Experiment of the Encroachment Removal and the Wetland Restoration in Urban Chennai, and it is an evaluation of the efficacy of constitutional and legislative practices in facilitating the management of wetlands. The paper presents Pallikaranai in the ecological and urban setting, which identifies the importance of biodiversity and stresses the waste dumping and development pressures. It then looks at the legal fabric of protection of wetlands, constitutional requirements, statutory requirements of the Environment Protection Act, Wetlands Rules and judicial intervention by the Madras High Court and the NGT. Pallikaranai Model is examined as an administrative action, judicial oversight and civic participation which targets eviction drives, boundary demarcation, afforestation and eco-restoration programs. The paper follows the chronology of encroachment removal and restoration with the help of the time-series methodology and ecological indicators, biodiversity records, and GIS-based land-use analysis. Results show limited effectiveness; judicial surveillance and legislative adherence facilitated considerable restoration achievements, but enforcement loopholes, bureaucratic inertia, and socio-economic displacement restricted replicability. The comparison of Indian wetlands, international Ramsar sites, highlights the strengths and weaknesses of the approach followed by Pallikaranai. This paper suggests that it is successful because of the synergy of law,

litigation, and civic activism, and institutional fragmentation, and climate vulnerability are both challenges. Finally, the paper indicates the importance of integrated urban ecological governance, increased statutory enforcement, and technological surveillance. The Pallikaranai experience would teach a lot to metropolitan India and make wetlands a key ecological infrastructure rather than a land bank.

KEYWORDS: Wetlands, Urbanisation, land encroachment, Ecological Governance, Legal Efficacy.

INTRODUCTION

Urban wetlands in India exist in a persistent state of contradiction. While they are frequently acknowledged in policy discourse as vital ecological assets, they continue to be steadily diminished on the ground by rapid urbanisation, infrastructure expansion, and fragmented systems of governance. Chennai, a low-lying coastal metropolis increasingly exposed to flooding and climate-related risks, reflects this tension with particular clarity. At the centre of this conflict lies the Pallikaranai Marshland, one of the last surviving natural freshwater wetlands in South India, whose immense ecological value stands in stark contrast to its long-standing treatment as surplus urban land. Historically, the marsh functioned as a natural flood regulator, a biodiversity refuge, and a critical groundwater recharge zone. Over time, however, unplanned development, large-scale encroachments, hydrological alterations, and pollution have severely compromised its ecological integrity.

In recent years, Pallikaranai has also come to represent a distinctive legal and governance experiment. Judicial interventions by the National Green Tribunal and the Madras High Court, supported by administrative action and sustained civic engagement, have repositioned the marsh as a focal point for testing the enforceability of India's wetland protection laws. This evolving governance framework, described in this paper as the "Pallikaranai Model", provides an opportunity to examine whether constitutional mandates, statutory safeguards, and environmental jurisprudence can meaningfully translate into ecological restoration within a densely urbanised setting. By tracing patterns of encroachment removal and restoration through a time-series analytical lens, this paper assesses the practical legal effectiveness of wetland governance in metropolitan India.

RESEARCH OBJECTIVES:

- To compare the constitutional, legislative and judicial provisions that regulate the protection of wetlands in India, with Pallikaranai emerging as the centre of interest.
- To examine Pallikaranai Model as a blend of administrative action, judicial supervision and civic involvement in clearing encroachment and restoring it.
- To apply a time-series research approach to time-trace ecological indices, biodiversity data, and land-use dynamics in Pallikaranai Marshland.
- To determine the strengths, weaknesses and policy implications of the Pallikaranai Model to the governance of wetlands in a sustainable urban setting.

RESEARCH QUESTIONS:

1. How effective has the Pallikaranai Model been in translating constitutional and statutory provisions into measurable ecological restoration outcomes?
2. What institutional, socio-economic, and governance challenges limit the replicability of the Pallikaranai Model in other urban wetland contexts?

RESEARCH METHODOLOGY:

This paper utilises a strictly doctrinal research approach. Doctrinal research, known as library-based research, primarily involves the study and analysis of legal statutes, case law, and academic writings. This method is ideal for exploring the theoretical and conceptual dimensions of law. It systematically presents legal doctrines and principles. In doctrinal research, primary sources include statutory materials, judicial decisions, and authoritative literature. Secondary sources like commentaries, articles, and legal summaries are also essential. The research process entails identifying, gathering, and critically evaluating these sources. The goal is to form logical conclusions and provide insights into the legal questions being studied. This paper aims to deliver a thorough and unified view of the legal structure relevant to the topic addressed.

LITERATURE REVIEW:

1. **N.Vikas Madhav and Reginald Victor** had conducted a study on the topic, **“Pallikaranai in peril – an appeal for the conservation of a wetland in southern India.** This paper brings out the alarming fact of the decline of the Pallikaranai marsh, an essential freshwater wetland in southern India, and its environmental relevance to the city growth of Chennai. The article records extreme degradation of the wetland through encroachment,

dumping of garbage, burning and illegal fishing, even though it is partially law-protected. It also highlights the high biodiversity of the marsh, such as the many bird species, fish, reptiles and amphibians and its flood control benefits. The authors follow a conservation activist view, according to which governance failures and political apathy are accentuated. In general, the work adds to the wetlands conservation literature by integrating the issues of ecological concern with grassroots environmental activism and demands increased protection on a legal and institutional level.

2. Mythili Madhusudhan and Ambujam N.K had conducted a study on the topic, **“Saving a Wetland in Southern India through a Social Ecological Systems Approach, Based on Community Values, Perception and Action** This paper looks into how the Pallikaranai wetland has been degraded using a Social-Ecological Systems (SES) model, which considers the ecological, social, economic, and governance aspects. The paper arises out of the SES theory of Ostrom and the rest of the studies conducted worldwide on wetlands, and the disjuncture between the environmental awareness and the actual pro-environmental behaviour in the urban communities is seen in this paper. The analysis places the context of Pallikaranai in the context of extended arguments on urbanisation, adaptive governance and community involvement in conservation of wetlands. It is also based on the comparative literature internationally and in India to underline the importance of stakeholder collaboration, effectiveness in the policy, and the importance of economic valuation in restoration. Comprehensively, the paper has added to the body of literature on urban wetlands through the suggestions of a problem-focused, people-based SES concept applicable to wetlands that are experiencing the same anthropogenic stressors.

3. R. Ramanibai, S. Govindan and E. Agnita Sharon conducted a study on the topic, **“RESTORATION OF WETLANDS IN PALLIKARANI** This paper discusses about the restoration of the Pallikaranai wetland alongside the degradation process triggered by urbanisation and its consequences on freshwater ecology and the avifauna. The paper places Pallikaranai in the backdrop as a wetland urban centre endangered by massive garbage dumping, sewage discharge, encroachments and hydrological modifications. The authors rely on field observations and biodiversity measurements to record the abundance of birds in the wetland and its significance in terms of a migratory environment. The article brings to light the environment-related effects of developmental stresses and pollution on the operation of

wetlands. It adds to the literature on the urgency of policy action, involvement of citizens and restoration-style management to maintain wetlands in urban areas such as Pallikaranai.

4. Dr B.P. Chandramohan had conducted a study on the topic, “**ROLE OF PUBLIC GOVERNANCE IN THE CONSERVATION OF URBAN WETLAND SYSTEM: A STUDY OF PALLIKKARANAI MARSH.** The author states that the current knowledge of urban wetlands focuses on their significant role in ecology and the increasing risks of city zoning and inappropriate land-use planning. Researchers have continually pointed out that failure in governance, fragmented institutional control and absence of public awareness are key factors that have contributed to the degradation of wetlands in the Indian cities. Pallikaranai Marsh studies specifically report about extreme ecological degradation through encroachment, dumping of wastes, sewage release and development of infrastructure. The previous studies also highlight the need to consider wetlands as hydrological and ecological systems and not as wastelands or administrative zones. The analysed piece of work adds to this literature by firmly connecting the fields of governance by the people, coordination of policy, and community involvement to the conservation of wetlands in urban areas.

GEOGRAPHICAL AND LAND COVERAGE:

Pallikaranai Marshland (locally spelt Pallikarsanai) is a large freshwater wetland ecosystem in the south of Chennai, Tamil Nadu, India. It is geographically located near the Bay of Bengal, approximately 20 km to the south of central Chennai, and has urban neighbourhoods on its eastern side, including Velachery, Perungudi, Taramani, and Sholinganallur, with the Old Mahabalipuram Road (OMR/IT Corridor) running through its eastern boundary.

The marsh used to cover a wide expanse of low-lying coastal floodplain of about 50-80 km² (5,000-8,000 hectares) and served as a natural drainage basin and would receive excess water throughout a catchment area of about 235-250 km, draining into the sea via channels such as Okkiyam Madavu and the Kovalam creek. It is mostly low-lying, with an average of 5 m above mean sea level, and typified by waterlogged depressions, marshes, aquatic grasslands, and scrublands, taking the archetypal wetland and replenishing urban floods as well as aquifers.

Over the years of high urbanisation, building of infrastructures and encroachment, the present marsh area has significantly reduced to a small fraction of the original size. Government and satellite surveys have revealed that the conserved wetland now occupies about 695-890 hectares (6.9-8.9 km²), with large shares of it being under reserve forest and Ramsar category

as an international wetland conservation site. Other works inform that there are even smaller functional water-spread regions and core marsh habitat which represent the extreme loss. The Pallikaranai Marsh is one of the few surviving natural wetland ecosystems in South India, including under national conservation programmes and a Ramsar site, although still under pressure due to urban development, pollution, expansion of landfills and hydrological disturbance. Habitat protection, revival of water circulation, and protection of biodiversity in this ecologically significant landscape are the areas of conservation activity.

ENCROACHMENT OF PALLIKARANAI MARSHLAND

Pallikaranai Marshland encroachment is mainly done through the gradual, systematic transformation of wetland land into built-up or altered land use, particularly without clear delineation of the level of wetland demarcation. Physical reclamation is one such mechanism whereby constructions of marshy land include the dumping of construction waste, sand and other solid waste to give the impression that it could be useful in building construction. After the land surface has been uplifted and dried up, it is technically re-classified as vacant or developable land, and further occupied. The other process is the hydrological alteration, where the natural water courses, inlets and outlets are obstructed or deviated by roads, embankments, and bunds. This interferes with seasonal flooding, makes portions of the marsh irreversibly dry and contributes to human habitat. Practices of encroachment also take place by way of administrative and planning laxity, including old land-use maps, the slice and dice definitions of wetland boundaries, and administrations of consent without ecological sensitivity in consideration. Individual instances of these incremental interventions over time lead to the permanent disappearance of wetland character and functionality.

There are encroachments in the Pallikaranai Marshland that can be broadly divided into the following categories:

1. Residential Encroachment

Slums, informal settlements and subsequently formal housing plans have been developed on reclaimed marshland, particularly the periphery. Such settlements are usually temporary, and over time, they evolve and develop infrastructures including roads, power and drainage.

2. Government and Institutional Entrusion

The vast areas of marshlands have been taken over by public facilities, transport corridors, educational and research centres, sewage treatment centres, and other

government facilities. These developments, however, cause irreversible loss of wetlands, though they are legally approved.

3. Business and Real Estate Development

The invasion of the marshlands by the private developers involves filling of the low-lying land areas, subdivision of land to commercial complexes, IT parks and gated residential complexes, especially along major road corridors.

4. Dumping and Expansion of Landfill of Solid Waste

Installation of dump yards and dumping municipal solid waste and construction debris directly into the marsh area decreases the spread of water and contaminates the soil and groundwater.

5. Infrastructure-Induced Encroachment

The marshland is bisected by roads, rail lines, power corridors and service lines, which divide it into isolated blocks and allow the secondary encroachments to be made along these linear forms.

6. Encroachment by the Drainage and Sewage

Installation of open drains, sewerage networks, and treatment systems in or among marshlands consumes wetland areas and changes the natural hydrology of the wetlands, causing rapid degradation and conversion of land.

ECOLOGICAL SIGNIFICANCE

The Pallikaranai Marshland is a part of the few remaining natural wetlands in the freshwater in the Chennai metropolitan area and is critical in ensuring the overall ecological stability of the city. The marsh performs the role of a natural hydrological controller by absorbing the excess monsoonal rain patterns of the adjacent urban areas and releasing the water stored in the marsh over time, thus alleviating flooding in the urban areas. The wetland is also known to recharge the groundwater via slow percolation, maintaining the underground water aquifers, and preventing reliance on external water sources in the water-stressed urban setting. The Pallikaranai Marshland is also ecologically rich, having a vibrant biodiversity supporting resident and migratory bird populations, fish, amphibians, reptiles, wetland flora and fauna. Its status as a Ramsar Site in 2022 highlights its global role as a wetland ecosystem. Furthermore, the marshland provides important ecosystem functions which include natural purification of water, where sediments, nutrients and pollutants that have infiltrated the water via surface run off and sewage charges undergo purification by the biological and microbial biochemical activity. The wetland also helps to regulate the climate

as a carbon sink and local temperatures, thus alleviating the urban heat island effect. Since the Pallikaranai Marshland is an ecological corridor in a fast urbanising environment, the habitat connectivity of the marshland sustains its ecological stability, which is invaluable to sustainable urbanisation and environmental security in Chennai.

IMPACT OF PALLIKARANAI MARSHLAND:

Historical area vs current: Pallikaranai Marshland once occupied an area of approximately 5500-6000 hectares in the mid-20th century, but has since been significantly reduced due to urbanisation. New spatial analysis shows that the marshland has shrunk to approximately 550 hectares as of 2023. According to other reports, what used to be more than 50 sq km (5,000 + ha) had reduced to approximately 3.17 sq km (317 ha) by the end of the 2010s. In a government mapping exercise, some 40.7 per cent of the officially mapped marshland (of about 21.25 sq km) was encroached (8.66 sq km).

Government and Development Projects Encroachment: In a survey that was presented before the National Green Tribunal, it was shown that almost 38 per cent of the marshland is occupied with legal and illegal infrastructure, residential plots and institutions. There is encroachment of areas by government institutions such as Greater Chennai Corporation, ELCOT, Indian Railways, among other institutional plots.

Dumping and Waste Impact: The Perungudi dumpyard, which is a mix of marshland occupies about 191 acres and receives about 2,000 tonnes of waste every day. The dump is said to have waste leachate that flows into the marsh, polluting the soil and water.

Wetland Species (Biodiversity Data): The conservation petitions and environmental reports indicate that the marshland hosts more than 300 species of flora and fauna, including 115 forms of birds, 46 forms of fish, seven forms of butterflies, and 10 forms of mammals. The species of birds are mostly migratory, and thus the marsh is a significant rest post of more than 40,000 birds on their migration route.

Decline of Ecological function: The water holding capacity of the marsh has reduced to an estimated 10 per cent of the original size due to encroachments and loss of land, and this has seriously compromised flood mitigation processes. The lakes that serve the marshland have also diminished; a good example would be the Velachery Lake which declined to 55 acres in recent years as compared to an original of about 265 acres in the 1970s.

Government and Tribunal Qualitative Finding: The National Green Tribunal (NGT) found that several stormwater drains (approximately 50 drains) empty into the Pallikaranai Marsh and this contributes to its poor hydrology further. The failure to protect the marsh by legal

means has been caused by the delays in the formal mapping of the boundary and the buffer zone of the marsh.

LEGAL FRAMEWORK FOR CONSERVATION OF WET LAND:

Ramsar Convention International Legal Framework: The Ramsar Convention on Wetlands (1971) is a treaty document on conservation and sustainable use of wetlands across the world. India being a party to the Convention since 1982 designates wetlands of international importance. In this model, Ramsar sites are acknowledged as sites of ecological importance and are supposed to be conserved and well managed. Pallikaranai Marsh became a Ramsar Site which demonstrates its global ecological significance. Ramsar designation imposes demands of protection against activities that undermine its ecological character.

National Legal Framework

Environment (Protection) Act, 1986 The Environment (Protection) Act (EPA), 1986, is the umbrella law for environmental protection in India. Under its authority, the **Wetlands (Conservation and Management) Rules, 2017** were notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC).

Wetlands (Conservation and Management) Rules, 2017 The main legislative mechanism of the wetland conservation in India is the Wetlands Rules, 2017. Key features include:

Definition and Delineation : Wetlands are broadly defined to be marshes, water bodies, fens, peatlands, lagoons, estuaries and other ecosystems of that nature.

State Wetland Authorities: The regulations provide that there should be State/UT Wetland Authorities that will identify, notify and manage the wetlands within their areas of jurisdiction.

Notification and Mapping: Wetlands will be listed and delimited according to the scientific methods and digital mapping and regions of influence are to be defined.

Integrated Management Plans (IMPs): Each wetland is supposed to have an IMP, which contains a list of permitted, regulated, and prohibited activities depending on the threat and ecological conditions.

Prohibited Activities: There are some activities that are not allowed to be done like; reclamation, dumping waste, permanent structures to be erected within the notified wet land boundaries and their zone of influence unless authorized by express actions of the rules.

These Rules bring the mandate of the EPA to bear and they offer a regulatory manner of coherent governance of wetlands.

State & Local Legal Instruments:

Tamil Nadu Forest Act, 1882: The entire Pallikaranai Marsh has been declared a Reserve Forest under the Tamil Nadu Forest Act, 1882, and thus it is now in statutory forest protection. The Act limits the land use alteration, encroachment, building, and activities that lead to the destruction of environmental habitats. Forest officials are also granted the authority to control access, occupational prohibition and institute judicial measures. These are provisions that enhance protection of wetland biodiversity and ecological functions. Nevertheless, protection is applied only to the notified areas in which case non-notified areas are left vulnerable.

Municipality and Urban Planning Regulation: The urban planning systems control land use in Pallikaranai Marsh using statutory master plans. The Central Metropolitan Development Authority (CMDA) Master Plan incorporates wetlands and ecological maps in zoning categories. Sites boundaries Ramsar sites boundaries are included so that development in sensitive areas is limited. Ecological considerations apply to the construction of permissions and infrastructure projects. This is still difficult to enforce because of the urbanisation pressure and overlapping responsibilities.

Supportive Legal Regimes:

Wildlife (Protection) Act, 1972: Pallikaranai Marsh is home to a habitat for various species of wildlife, including fauna specified in the Wildlife Protection Act (Schedule species), which reveals the significance of wildlife protection legislation to the wetland ecosystem.

Pallikaranai Marsh serves as a critical habitat for migratory birds, reptiles, and wetland-dependent fauna. Although not fully notified as a wildlife protected area, the Act complements marsh protection by safeguarding species using the wetland. Restrictions on hunting and habitat disturbance indirectly strengthen conservation of the marsh ecosystem. The biodiversity of Pallikaranai Marsh and its significance to migratory and resident birds reflects its ecological significance for species conservation as per broad wildlife conservation principles.

Water (Prevention and Control of Pollution) Act, 1974: The Water Act plays a vital role in regulating sewage and industrial effluents impacting Pallikaranai Marsh. The Tamil Nadu Pollution Control Board has powers to monitor water quality and control pollution sources. Strict enforcement of this Act is necessary to preserve the ecological and hydrological significance of the marsh.

Biological Diversity Act, 2002: Pallikaranai Marsh is diverse in terms of floral and faunal elements, making it a major biodiversity site. The Act helps in species conservation through Biodiversity Management Committees and People's Biodiversity Registers. It regulates the use of biological resources, which helps in the sustainable management of the Pallikaranai Marsh ecosystem.

JUDICIAL INTERVENTION:

One of the few coastal wetlands remaining in South India is Pallikaranai Marshland which is located in Chennai in Tamil Nadu. It has great ecological purposes - it serves as a natural storage of floods, contributes to biodiversity, replenishes ground water, and takes in the stormwater flows to the suburban parts of the city. The marshland is an ecologically sensitive and globally important wetland, as it was declared a Ramsar site (wetland of international importance) under the Ramsar Convention in July 2022.

Though, the process of rapid urbanization, encroachments (legal and illegal), dumping of debris, construction works, and planning permissions in the area had brought in apprehension with regard to loss of wetland area, interference to hydrology, pollution, and flood risk augmentation. These advancements led to judicial review and interest litigation (PIL).

National Green Tribunal (NGT) Intervention:

a) Suo Motu NGT Order Halting Building Approvals (24 September 2025)

Court / Bench: National Green Tribunal — Southern Zone.

Case Nature : During a suo motu move (in the own motion of NGT, which was initiated following media coverage of the construction debris and a road being built within a part of the marshland) the Tribunal realised the presence of encroachments and absence of a scientific demarcation of the wetland area.

Stop all planning permissions and building approvals within the Pallikaranai marshland and within a 1-kilometre buffer zone around it by Chennai Metropolitan Development Authority (CMDA), local bodies and others until the Integrated Management Plan (IMP) is in place and the zone of influence is scientifically delimited.

Key Directions : Coordinated action in preparation of the IMP containing ecological maps and hydrological data between CMDA, Tamil Nadu State Wetlands Authority (TNSWA), and Water Resources Department (WRD).

Stated safety measures and the concern of the environment, the zoning or the revenue classification of the privately owned patta land would not be sufficient to generate development in the ecologically sensitive areas.

Legal Significance: The NGT order is not a reaction to a particular construction but a regime of scientific, ecosystem-based management of a protected wetland. It emphasises the fact that the renewal of development approvals is impossible without a scientifically sound boundary demarcation and management system, which is based on the Wetlands (Conservation and Management) Rules, 2017 and the environmental jurisprudence of ecological sensitivity.

b) Implementation Mandates & Follow-Up

After the NGT order, the CMDA gave a circular (Office Order No. 07/2025, dated 6/10/2025) confirming the prohibition of all new building permits within the boundary of the Ramsar wetland and a 1-km influence zone pending the availability of final scientific mapping. The Puzhuthivakkam, Madipakkam, Pallikaranai, Perumbakkam, Sholinganallur, Velachery, and basically, the entire area would become a subject of increased environmental scrutiny, not standard urban approvals because of the restricted zone as indicated by the map and as stipulated by the NGT buffer.

Impact of NGT Order: New developments cannot be continued before they are scrutinised by the environment, which is associated with the IMP. Ecological danger was highlighted by the fact that past surveys demonstrated that there was dumping of debris within 150 m of the wetland boundary. The freeze has been protested by local stakeholders, who have argued that it has a negative economic effect, but the environmental authorities and NGT have supported ecological issues to unrestricted permits.

Madras High Court Intervention:

The Madras High Court's intervention in the Pallikaranai marshland matter demonstrates a cautious and environmentally conscious judicial approach toward urban development near protected wetlands. Acting on a Public Interest Litigation filed by Advocate J. Brezhnev, the Court examined allegations that environmental and planning clearances granted for a large residential project near the Pallikaranai Ramsar wetland were issued in violation of the Wetlands (Conservation and Management) Rules, 2017, and without adequate scientific determination of the wetland's boundaries or zone of influence.

By issuing an interim injunction halting construction, the Court prioritized ecological protection over developmental interests and compelled the State authorities and planning bodies to justify their approvals in light of India's national and international obligations toward Ramsar wetlands. The Court's insistence on scientific ground truthing and boundary delineation reflects judicial reliance on evidence-based environmental governance. The continuation of the status quo order until final demarcation underscores the application of the precautionary principle and aligns with the National Green Tribunal's broader framework for wetland conservation.

Overall, the High Court's orders reinforce procedural fairness, administrative accountability, and the primacy of environmental protection in sensitive ecological zones, thereby strengthening the legal architecture for wetland preservation in rapidly urbanising cities.

ENCROACHMENT AND RESTORATION THEMES:

Encroachment Analysis: Judicial proceedings before the NGT and the Madras High Court reveal that significant portions of the Pallikaranai marshland have been encroached upon by residential, institutional, and infrastructure developments. Although exact figures remain disputed, multiple disclosures and petitions point to illegal occupation, reclassification, and questionable patta allotments, prompting judicial scrutiny and governmental investigations.

Restoration & Directions: While recent NGT orders primarily impose a freeze on new development approvals pending scientific delineation, they implicitly advance a restoration-oriented framework through directions for an Integrated Management Plan (IMP), inter-agency coordination, and ecological monitoring. Parallel restoration measures such as bio-mining of legacy waste, removal of debris and invasive species, and boundary fencing have been undertaken pursuant to these directions.

Principles Applied and Judicial Reasonings: Across both forums, courts have consistently applied the precautionary principle, holding that uncertainty regarding wetland boundaries cannot justify development in ecologically sensitive areas. Judicial reasoning emphasizes strict compliance with wetland conservation laws, Ramsar obligations, and environmental impact requirements, and insists that regulatory decisions be grounded in scientifically validated wetland boundaries and hydrological influence zones, rather than revenue records alone.

Care Earth Trust: This NGO has played a vital role in protecting and has made many bold steps in restoring Pallikaranai marshland. They have proposed an adaptive comprehensive management plan taking into consideration both people and nature. The NGO recommends

setting up digital boards, depictive murals, viewing decks and towers connected through walkways, night-vision cameras and camera traps to monitor and educate about the issue.

CONCLUSION:

The Pallikaranai Marshland experience illustrates both the potential and the limitations of law as an instrument of urban ecological restoration. The study demonstrates that constitutional principles under Articles 48A and 51A(g), when reinforced by statutory mechanisms such as the Environment (Protection) Act, the Wetlands (Conservation and Management) Rules, 2017, and international obligations under the Ramsar Convention, can generate meaningful conservation outcomes, provided they are supported by sustained judicial oversight. The interventions of the National Green Tribunal and the Madras High Court have been pivotal in shifting the governance approach from revenue-based land classification to science driven ecological management, resulting in measurable gains in wetland protection and partial restoration.

However, the Pallikaranai Model also exposes structural weaknesses. Enforcement gaps, interagency fragmentation, delays in scientific boundary demarcation, and socio - economic displacement concerns limit the scalability of this approach. Restoration remains uneven, and ecological recovery continues to be vulnerable to political, economic, and climatic pressures. The findings suggest that litigation alone cannot secure long-term wetland resilience without integrated urban planning, technological monitoring, and community-inclusive governance.

Ultimately, the Pallikaranai case offers an important lesson for Indian cities, i.e., wetlands must be recognised not as vacant land banks but as essential urban ecological infrastructure. Embedding this recognition into planning law and administrative practice is crucial for sustainable urban futures.

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