Online Resource 1

Journal: Journal of Coastal Conservation

Article title: A DPSIR-Based Evidence-to-Design Framework for Restoration Readiness at Pallikaranai Marshland, Chennai

Contents: Text S1 Literature search and screening; Table S1 Evidence register; Fig. S1 Edge-type sections; Fig. S2 Studio transects T1–T4

Text S1 Literature search and screening

The evidence base was assembled through a targeted documentary search rather than a systematic review; the procedure below expands Section 2.2 of the main article.

Databases and repositories: Scopus, Web of Science and Google Scholar, alongside university thesis repositories.

Search strings: two groups of terms were combined, applied to titles, abstracts and keywords in Scopus and Web of Science and as plain-text queries in Google Scholar:

(1) “Pallikaranai” AND (wetland OR marsh OR “Ramsar site” OR “Zone of Influence”)

(2) “DPSIR” AND “wetland” AND “Chennai”

Period: Searches were run iteratively during the study and last updated on 22 October 2026, to include ongoing litigation on the wetland’s boundary.

Other sources: Court and tribunal records, government orders, the Ramsar Information Sheet and the management plan were obtained directly from official portals and court records. News reports were used only for developments not yet available in official records.

Screening: Records were screened for relevance to Pallikaranai Marshland, spatial scale and evidential support. Records lacking sufficient verifiable evidence were excluded from the analytical matrix.

Final evidence base: 40 sources, listed in the reference list of the main article (the DataMeet boundary dataset, used only to draw Fig. 1, is not counted): 22 journal articles, book chapters and conference papers; five government documents and official records; four court and tribunal records; four institutional, technical and NGO reports; four news reports; and the studio project (Author 2023). Of these, 11 directly support the interventions in Table 3 (Table S1); the rest provide site context, legal status and the methodological basis of the framework.

Table S1 Evidence register

Sources supporting the interventions in Table 3 of the main article, with evidence grade, DPSIR tier and the interventions they support. Grades follow Section 4 of the main article: E1, primary or official evidence; E2, relevant published or secondary evidence; E3, studio-derived observations requiring independent verification

Source	Type	Grade	DPSIR tier	Used for	What it documents in Table 3
National Green Tribunal (2022)	Tribunal judgment	E1	Pressure; State/Impact	R1, R2, R3	Construction and dumping obstructing water flow; debris used to form a road within the water body; loss of marsh extent; encroachment on Forest Department land
National Green Tribunal (2025)	Tribunal order	E1	Driver/Response	R6	Approvals linked to completion of the Integrated Management Plan, which is to delineate the ZoI
Chennai Metropolitan Development Authority (2025)	Government order	E1	Driver/Response	R6	Planning restrictions within the Ramsar boundary and one-kilometre influence area
TNSWA (2026)	Government status report	E1	Driver/Response	R6	Interim ZoI proposal of 128.19 ha
Azeez et al. (2007)	Institutional report	E2	Pressure	R1	Road and infrastructure pressures on wetland connectivity
Rosado et al. (2024)	Peer-reviewed article	E2	Pressure	R1	Road and infrastructure pressures on wetland connectivity
Conservation Authority for Pallikaranai Marsh and Care Earth Trust (2014)	Management plan	E2	Pressure; Pressure/State	R1, R3, R4	Roads, institutions and the Perungudi dump altering hydrology; Prosopis juliflora invasion along the north-east boundary
Vencatesan (2007)	Published article	E2	State/Impact	R2	Estimated historical marsh extent of about 5,500 ha
Coelho (2018)	Published article	E2	Impact	R5	Marsh reduced to a patchwork of plots enclosed by development and the IT corridor
DT Next Bureau (2026)	News report	E2	Driver/Response	R6	Interim ZoI reported as pending final delineation
Author (2023)	Studio project	E3	Pressure; State; Impact	R1, R2, R3, R4, R5	Channel obstruction, siltation sub-areas, edge typologies, vegetation patterns and access points from the studio site analysis; used only with E1/E2 support (Section 2.4)

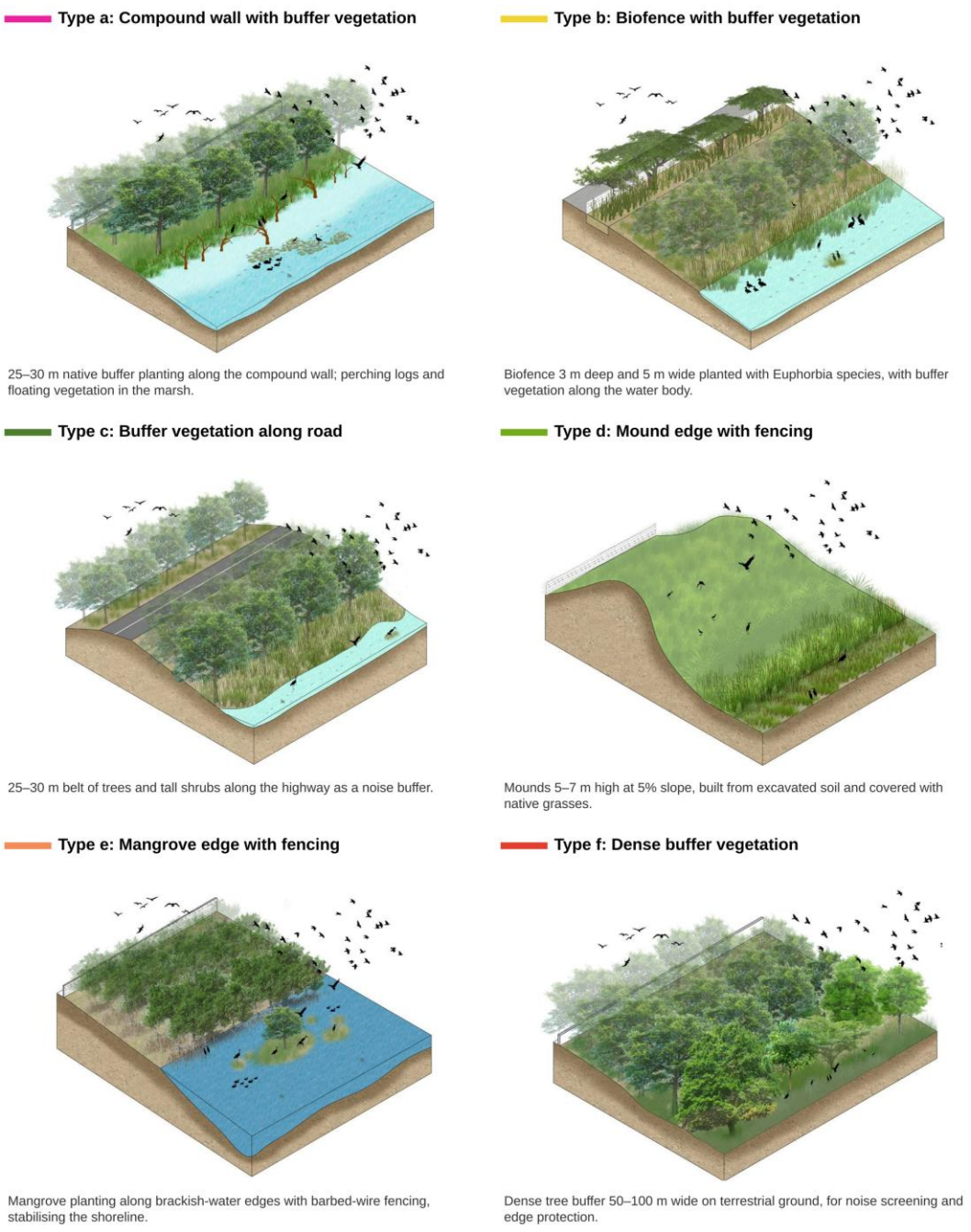
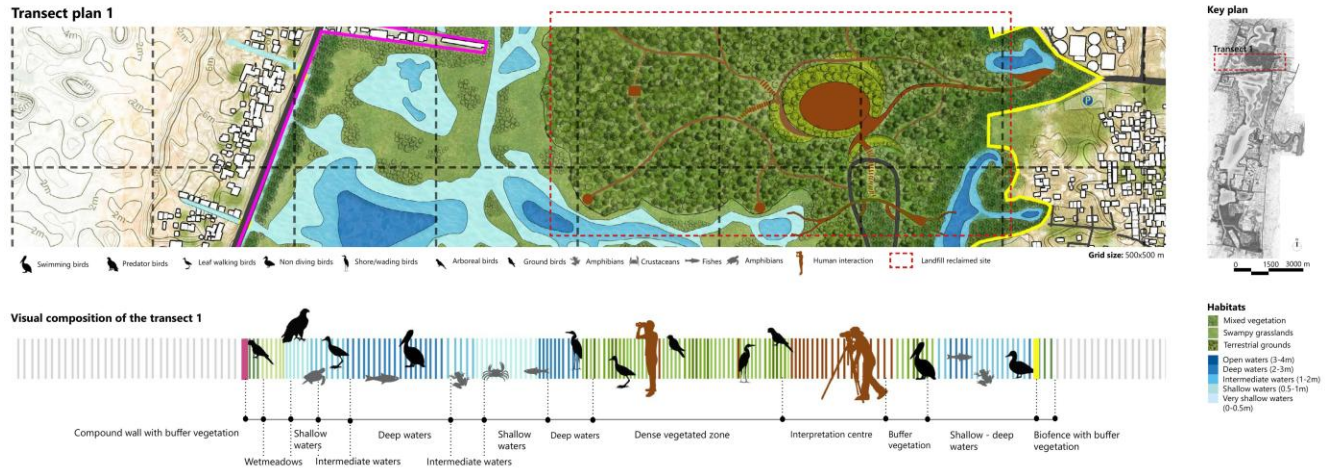


Fig. S1 Schematic sections of edge types a–f referred to in Table 3 of the main article; not to scale. Line colours match the edge-type key in Fig. 4a of the main article. Source: Author (2023)

(a) Transect 1



(b) Transect 2

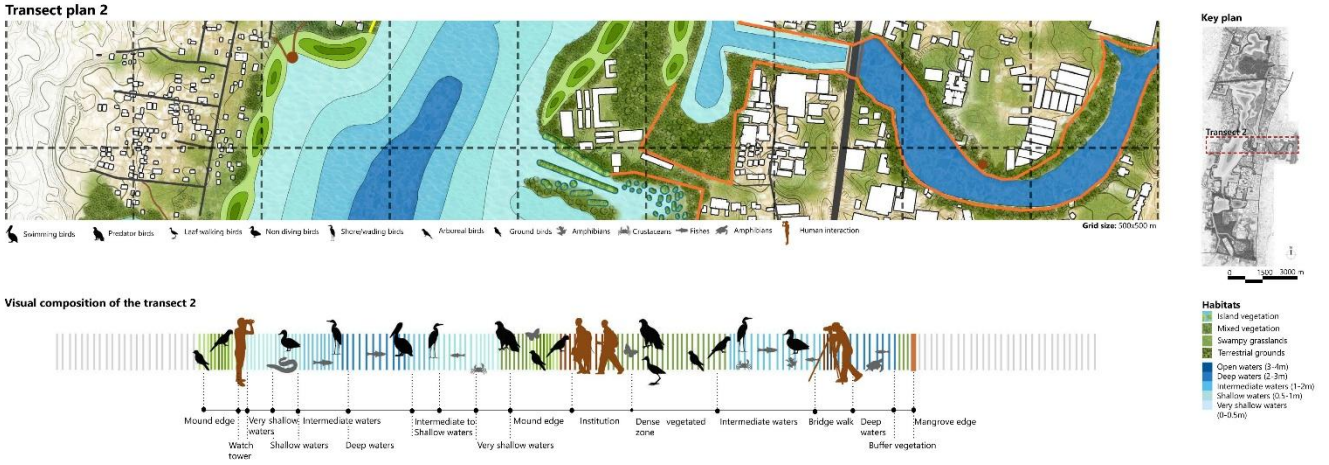
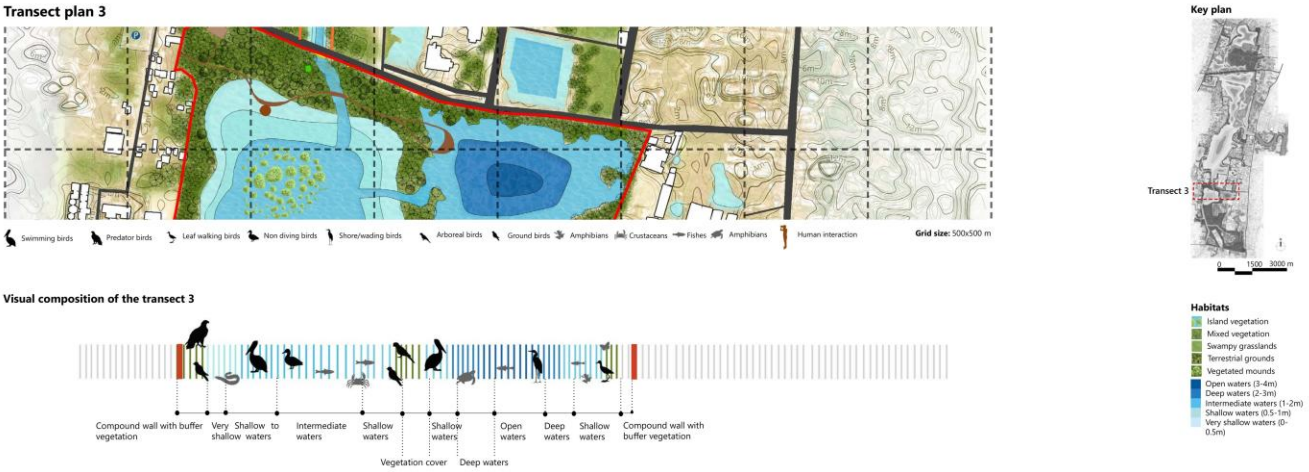


Fig. S2 Studio transects T1–T4 referred to in Table 3 of the main article: each shows the transect plan, the key plan locating it on the site, and the visual composition of habitats and users along it. T1 supports R2; T2–T4 support R1. Grid 500 × 500 m. Source: Author (2023).
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(c) Transect 3



(d) Transect 4

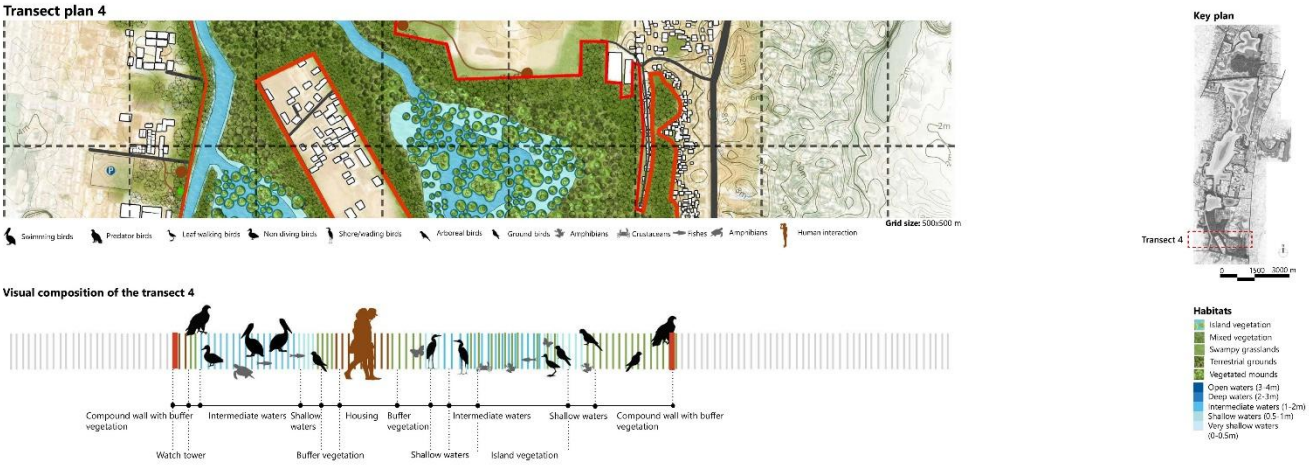


Fig. S2 (continued) Studio transects T3 and T4. Source: Author (2023)