

BEFORE THE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE
AT CHENNAI

O.A. No. 110 of 2023

K. Saravanan

....Applicant

Vs.

TNSCZMA & 2 Ors.

... Respondents

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DATED AT CHENNAI ON THIS THE 31ST DAY OF DECEMBER 2024



COUNSEL FOR 3RD RESPONDENT

Report on the Field survey undertaken on 8th July 2024 by NCSCM

Background:

A field survey was undertaken by Scientists and Project Staff from NCSCM on the 8th July 2024 at 3 different sites against the Application filed before the National Green Tribunal, South Zone at Chennai, Memorandum of Application (Under Sections 14, 15 read with 18(1) of the National Green Tribunal Act, 2010), on 25.02. 2023 and OA (no.110) filed on 03.08.2023 by Mr. K. Saravanan. The application has been filed challenging Map No. TN 98 of the draft Coastal Zone Management plan map uploaded by the respondents on the website of the Department of Environment at <https://environment.tn.gov.in/assets/czmpmap/TN98.pdf> failing to recognize and demarcate ecologically sensitive features such as seagrass beds, mangroves sand dunes and turtle nesting grounds in the Odiyur lake and the beaches around the Mudaliarkuppam estuary.

Field Survey:

In order to document the ecologically sensitive areas (ESA) a survey was undertaken by the Scientists and Project Staff of NCSCM along with officials from Tamil Nadu Coastal Zone Management Authority (TNCZMA), the Applicant and villagers residing at the vicinity of both Odiyur lake and the Mudaliyarkuppam estuary. The survey was carried out to verify the presence of seagrass beds, mangroves and sand dunes and turtle nesting grounds in the Odiyur lake and nearby areas.

Inspected areas:

Inspection and surveys were carried out in 3 different locations (maps 1) covering the Odiyur Lake at the northern and southern tips and Mudaliyarkuppam backwater/ estuarine area by boat.



Map 1. Inspected sites (1&3 – Odiyur Lake and 2 Mudaliyarkuppam estuary)



Fig.1. Seagrass blades of *Syringodium isoetifolium* washed ashore at Odiyur Lake (Site 1)

Table 1. Geo-coordinates of the surveyed areas

ODIYUR LAKE FIELD DATA: 08-07-2024			
FID	FEATURE Descriptions	Latitude	Longitude
1	RAIN DROP BOAT HOUSE	12° 21' 7.692" N	80° 3' 41.778" E
2	SEA GRASS SAMPLE LOCATION 2	12° 20' 55.258" N	80° 3' 17.407" E
3	SEA WEEDS (SW)	12° 20' 55.975" N	80° 3' 16.962" E
4	SEA GRASS (SG)	12° 20' 56.136" N	80° 3' 16.833" E
5	SG BED	12° 20' 55.407" N	80° 3' 17.472" E
6	SAMPLE LOCATION	12° 20' 54.985" N	80° 3' 17.604" E
7	CHANNEL END	12° 18' 46.418" N	80° 2' 24.650" E
8	SEA CONNECTION	12° 19' 38.450" N	80° 2' 57.165" E
9	MOUTH	12° 19' 39.276" N	80° 2' 57.753" E
10	RED CRAB	12° 19' 40.562" N	80° 2' 58.435" E
11	MG	12° 19' 51.535" N	80° 3' 10.539" E
12	MG	12° 19' 56.961" N	80° 3' 11.980" E
13	SD MG TOE	12° 19' 58.560" N	80° 3' 13.073" E
14	SAND DUNE	12° 19' 57.848" N	80° 3' 13.847" E
15	BOUNDARY Wall	12° 19' 58.104" N	80° 3' 14.047" E
16	PLOT CRNR	12° 19' 58.122" N	80° 3' 14.000" E
17	ECO FRIENDLY SHED	12° 19' 46.283" N	80° 3' 11.479" E
18	HTL	12° 19' 46.176" N	80° 3' 11.820" E
19	NO SD	12° 19' 41.640" N	80° 3' 8.449" E
20	NO SD	12° 19' 45.093" N	80° 3' 9.662" E
21	HTL	12° 19' 47.095" N	80° 3' 8.755" E
22	FLOATING JETTY	12° 19' 47.379" N	80° 3' 8.574" E
23	SEA GRASS Species 2	12° 19' 47.843" N	80° 3' 9.615" E
24	NO SG	12° 19' 19.975" N	80° 2' 47.346" E
25	NO SG	12° 19' 20.103" N	80° 2' 48.925" E
26	NO SG	12° 19' 59.601" N	80° 1' 1.753" E
27	NO SG	12° 19' 59.977" N	80° 1' 2.424" E
28	NO SG	12° 19' 59.974" N	80° 1' 3.574" E
29	BLUE GREEN ALGAE ENTIRE	12° 20' 0.007" N	80° 1' 4.053" E
30	BLUE GREEN ALGAE	12° 20' 0.408" N	80° 1' 4.147" E
31	BLUE GREEN ALGAE	12° 20' 0.711" N	80° 1' 4.167" E
32	BLUE GREEN ALGAE	12° 20' 1.274" N	80° 1' 4.165" E
33	BLUE GREEN ALGAE	12° 20' 1.999" N	80° 1' 3.849" E
34	BLUE GREEN ALGAE	12° 20' 0.981" N	80° 1' 3.052" E
35	NO SG	12° 20' 0.736" N	80° 1' 2.861" E
36	SM	12° 20' 0.185" N	80° 0' 55.048" E

SG = Seagrass; MG = Mangrove; SD = Sand Dune; SM = Salt Marsh

Seagrass

A single species of seagrass namely the noodle seagrass *Syringodium isoetifolium*, has sporadic beds found in the north-eastern side of the Odiyur Lake (Site 1). A large quantity of seagrass blades of this species was washed ashore, especially in this area. Interactions with the local communities reveal that this species exists in the Odiyur Lake.



Inspection at Odiyur Lake



Seagrass blades washed ashore



Seagrass *S. isoetifolium* with rhizome



Sporadic beds of seagrass *S. isoetifolium*

It was also observed that the majority part of the lake becomes dry during the summer months and the seagrass beds get exposed and die and disappear. The presence of the species might be seasonal based on the presence of water required for its submergence with the required salinity.

Seagrass is a type of aquatic plant specifically adapted to live in submerged saltwater conditions. They require constant access to water for their survival. Unlike some land plants that have adaptations to withstand drought, seagrass lacks these mechanisms. Usually, when the water body dries up, the seagrass species will die and the extent of the damage depends on the duration of dryness and exposure to the sun and air. Some species are capable of recovering

once water returns but prolonged exposure will lead to the death of seagrass. The other extreme is that of flooding and freshwater inflow will lead to the death of this species. A 100% death of *S. isoetifolium* was documented in the case of Moreton Bay, Australia (Hanington et al. 2015)¹.



Partially submerged *S. isoetifolium* bed



Exposed *S. isoetifolium* bed

Seagrass *S. isoetifolium* was not present in sites 2&3 during the survey. However, a second species of seagrass namely Dugong seagrass *Halophila ovalis* was present in the Mudalaiyarkuppam backwater area, specifically in site 2, near the boat jetty of the tourism infrastructure that has been created. Because of the highly turbid estuarine waters, the seagrasses are not visible. However, collections using the Van veen grab and handpicking revealed the presence of *H. ovalis* beds well established in the estuary but only in some pockets. Van veen grab operations on the southern side of the estuary did not have the presence of any subaquatic vegetation. Due to the presence of water throughout the year, *H. ovalis* species is thriving well. Interaction with fisher community revealed that the entire estuarine area is having the presence of this species. A thorough study has to be undertaken to document the species distribution in the Mudaliyarkuppam estuary.

As far as seagrass is concerned, the diversity, distribution and mapping of extent has to be undertaken as a detailed study at different time periods and seasons.

¹ Hanington, P., Hunnam, K., & Johnstone, R. (2015). Widespread loss of the seagrass *Syringodium isoetifolium* after a major flood event in Moreton Bay, Australia: Implications for benthic processes. *Aquatic Botany*, 120, 244–250. doi:10.1016/j.aquabot.2014.09.002



Seagrass *Halophila ovalis*



Boat jetty area which has good *H. ovalis* beds

Mangroves

One or two mangroves were present as shrubs or seedlings along the periphery on the eastern side at site 1 represented by *Avicennia marina*. Well established mangroves are seen at site 2 in the Mudalaiyarkuppam estuarine area, especially on the eastern bank. About 4 species of mangroves namely *Avicennia marina*, *A. officinalis*, *Excoecaria agallocha* and *Acanthus ilicifolius* have been documented. From the field survey, good stands of *Pandanus tectorius* vegetation was recorded which an important mangrove associated species. Besides, stands of *A. marina* and *A. officinalis* were also recorded during the field survey.





Mangrove stand of *A. marina* with exposed pneumatophores



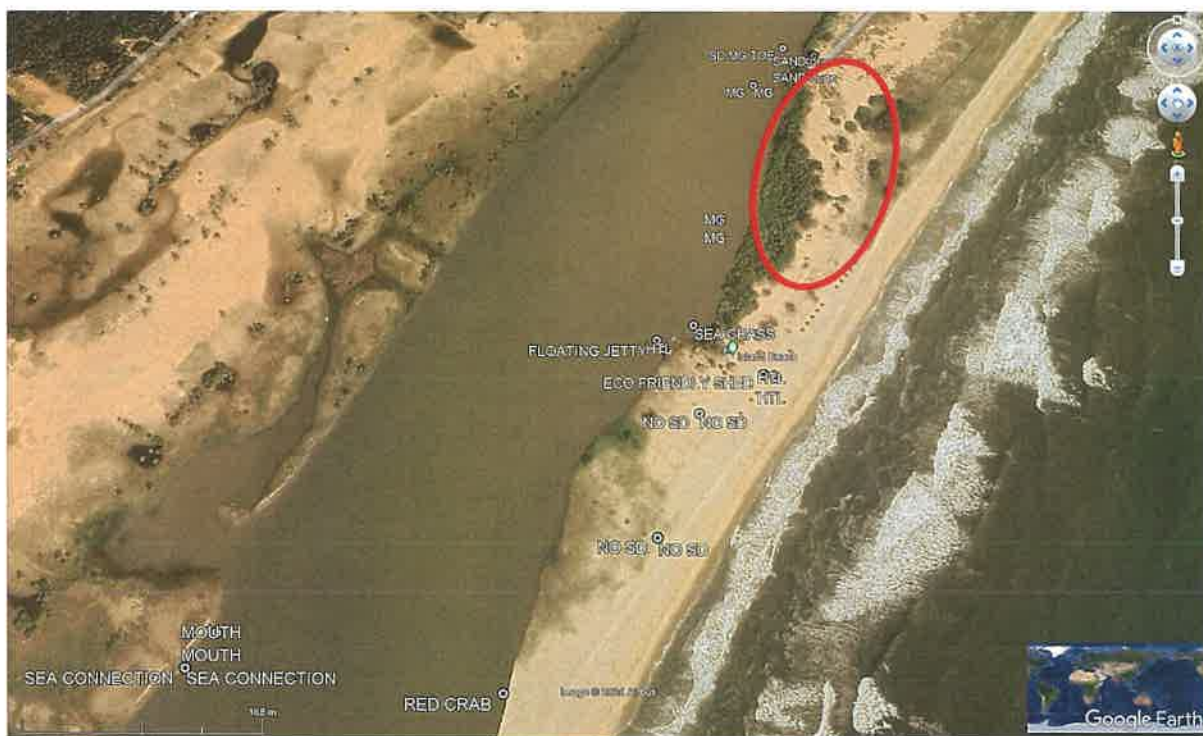
Good stand of mangrove associate *Pandanus tectorius* along with mangroves



Excellent mangrove stand on the eastern bank of Mudaliyarkuppam estuary

Sand Dunes

Sand dunes were present on the eastern and western banks of Mudaliyarkuppam estuary. Established dune vegetation such as *Spinifex littoreus* and *Ipomoea pescaprae* were observed.



Presence of sand dunes on the eastern bank of Mudaliyarkuppam estuary



Sand dunes

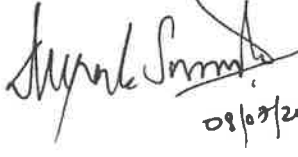







Spinifex littoreus

Turtle Nesting Ground

No signs of turtle nesting was seen in the beach area as it was not the season.

Field inspection has scheduled on 08.07.2024 as directed by the Hon'ble NGT orders on OA.No.110 of 2023 filed before the Hon'ble NGT (SZ) by Saravan regarding Odiyur Lagoon in Chengalpattu District.

Sl.No.	Name	Designation	Sign and date
1.	DR. DEEPAK SAMUEL .V.	Scientist - E NCSM	 08/07/2024
2.	K. SARAVANAN Ururkuppam Basant Nagar Chennai - 90	Ururkuppam	
3.	S. Sathish Kumar Alambarai kuppam Kadambakkam (Post) Cheyyur (T.K) Chengalpattu (D.T) Pin: 603304	Alambaraikuppam	
4.	T. Bannalal Bannalal Cheyyur (T.K) Chengalpattu (D.T)		T. Bannalal
5.	N. Desingu Thaluthalukuppam Cheyyur (T.K) Chengalpattu (D.T)		N. Desingu

6.	Dr. Badarveshka NCS cm. Chennai-25	NCS cm.	
7.	P ARIVMAYAN Assistant Executive Engineer	DOE & CC	
8.	M. VINOTH KUNAR Programme Officer	DOE & CC	
9.			
10.			

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**S. JANARTHANAM
COUNSEL FOR 3RD RESPONDENT**