

BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No. 15 of 2021

In the matter of
Tribunal on its own motion SUO MOTU
Based on the News Item in the Hindu English
Newspaper dated 05.01.2021, "White Foam
Observed in Cooum Stretch near Napier Bridge"

....Applicant

Vs

1) The Chief Secretary to Govt. of Tamil Nadu
Govt Secretariat
Fort St. George Chennai,
Tamil Nadu – 600009

2) The Secretary to Govt. of Tamil Nadu
Department of Environment
Govt. Secretariat
Fort St. George Chennai
TamilNadu– 60000

3) The Principal Secretary to Govt. of Tamil Nadu
Department of Industries
Govt. Secretariat
Fort St. George Chennai
TamilNadu – 600009

4) Additional Chief Secretary to Govt. of Tamil Nadu
Municipal Administration and Water Supply Department
Govt. Secretariat, Fort St. George Chennai,
TamilNadu – 6000092

5) The Director Department of Environment
No.1, Jeenis Road, Panagal Building
Ground Floor, Saidapet,
Chennai-600 015

6) The Chairman
Tamil Nadu Pollution Control Board
No.76, Anna Salai, Guindy
Chennai
TamilNadu- 600032

7) The Managing Director
Chennai Metropolitan Water Supply & Sewerage Board
No. 1, Pumping Station Road
Chintadripet, Chennai – 600031

8) The Member Secretary
Tamil Nadu Coastal Zonal Management Authority
No.1, Jeenis Road
Panagal Building, First Floor
Saidapet, Chennai-600 015

9) The Member Secretary
Chennai Rivers Restoration Trust
No.6, Adyar Eco-Park
103, Dr DGS Dhinakaran Salai
Raja Annamalai Puram, Chennai - 600028


डा. प्रभाकर मिश्रा
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National Centre For Coastal Research
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पल्लिकरणी, चेन्नै-६०० १००.
Pallikaranai, Chennai - 600 100.

10) The Director National Centre for Coastal Research
2nd Floor, NIOT Campus
Velachery - Tambaram Main Rd
Pallikaranai, Chennai
Tamil Nadu 600100

11) The District Collector
Chennai District District Collector Office
No.62, Rajaji Salai, 4th Floor
Chennai - 600001

12) The Commissioner
Greater Chennai Corporation
3 Ripon Building
Chennai - 600 003

...Respondents

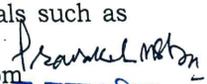
REPLY FILED ON BEHALF OF THE 10TH RESPONDENT

I, Dr.Pravakar Mishra, Scientist F at National Centre for Coastal Research, 2nd Floor, NIOT Campus, Velachery – Tambaram Main Road, Pallikaranai, Chennai, Tamil Nadu – 600 100, do hereby solemnly affirm and sincerely state as follows:

1. I am Scientist -F of the 10th Respondent herein as such I am well acquainted with the facts and circumstances of the case and competent to swear this affidavit.

2. The above case has been SuoMotu registered by this Honourable Tribunal on the basis of the newspaper reports published in the Hindu English newspaper dated 05.01.2021 under the caption “White foam observed in Cooum Stretch near Napier Bridge”. High Phosphate content in water, rough sea and high wind conditions cited as possible reasons and also another newspaper report published in Dinamalar Tamil newspaper, dated 05.01.2021 wherein they have mentioned that similar issue has been projected in Pattinapakkam beach area, showing large scale 4 foam being formed near Napier Bridge at a place where Cooum River joins the Marina Beach.

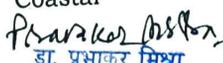
3. The 10th Respondent respectfully submits that Coastal foaming usually occurs during monsoon or after a spate of heavy rainfall when the coastal water is agitated by wind and waves. Physical process such as breaking surface waves, bubble entrainment, and white cap formation also trigger the event. Foam may occur in small rivers and streams when significant amounts of foam-generating chemicals such as humic substances derived from the decay of organic matter, phosphates from


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agricultural fertilizers, or industrial detergents (Ettema et al. 1989, NOAA web site). Some studies on sea foam report that breaking of algal cells in times of heavy swells makes sea foam production. Foam formed along Thiruvanthapuram coast was attributed to wave action upon gelatin released from some dead jelly fish (Baba et al., 2011). Foam is produced when organic matter decomposes and releases fatty acids that act as surfactants or surface active agents. The organic matter in surface waters comes mostly from decomposing of algae and terrestrial plants, but could also include anthropogenic sources of organic matter including sewage and other organic discharges. Turbulence from waves and currents cause the fatty acids to entrain small bubbles that constitute the foam. The marine haptophyte *Phaeocystis globosa* is commonly regarded as a nuisance algal species. The species is associated with mass foam accumulations on beaches, which are an annoyance to beach recreation (Lancelot, 1995; Blauw et al. 2010)

4. It is respectfully submitted that during regular coastal water quality monitoring, sea foaming incidents were observed eight times during 2013-2020 in the Cooum, Marina and Adyar beaches, Chennai. Two rivers in Chennai - Cooum and Adyar river - drain into the coast that brings significant amount of organic load. On the days of foaming, high phosphate (9.7- 58.1 μM), ammonia (18.5- 440.5 μM) and *Phaeocystis* sp. (2 times) with high chlorophyll (165 - 230.2 mg/m³) have been recorded. While phosphate indicate the presence of detergent, ammonia suggest the discharge of raw sewage. The Respondent observed foaming incidence when the river mouths (Adyar and Cooum) are open and the dredging activity is operational along with wind-wave turbulence, the problem is aggravated. The main cause of coastal foaming is sewage laden high organic matter, phosphate, ammonia and also occasional blooming of *phaeocystis* sp. Along the Chennai coast.

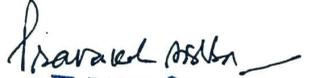
5. National centre for Coastal Research, the 10th Respondent being an attached office of Ministry of Earth Sciences, is currently involved in monitoring the "Coastal


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Water Quality” at 50 locations along the Indian coastline under its program “Sea water Quality Monitoring”. NCCR is monitoring the Chennai coast since 2013 on a monthly basis under “Prediction of coastal water quality” program. From the water quality and microbiology (fecal coliform) data, it can be concluded that Phosphate and Ammonia are high during the foaming events. Microbiological studies also indicate presence of very high values of faecal coliforms (many folds higher than normal values) throughout the year attests to the fact there is leakage of untreated sewage to the environment. Therefore, the only available solution is to arrest / manage the leakage points of untreated sewage coming through river and riverine systems in the area to improve the water quality.

It is therefore prayed that this Honourable Tribunal may be pleased to take this reply on file and pass suitable orders and thus render justice.

Solemnly affirmed at Chennai on
This the 09th day of March 2021
And signed his name in my presence


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Before me

Advocate: Chennai