**BEFORE THE NATIONAL GREEN TRIBUNAL**
**PRINCIPAL BENCH, NEW DELHI**
**OA NO. 270 OF 2025**

**IN THE MATTER OF:**

**NEWS ITEM TITLED "CONTAINERS FROM SUNKEN SHIP LIKELY TO DRIFT TOWARDS ALAPPUZHA, KOLLAM COASTS IN 48 HOURS: INCOIS" APPEARING IN THE HINDU DATED 25.05.2025**

# AFFIDAVIT ON BEHALF OF THE RESPONDENT NO. 7 – INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES ("INCOIS")

**PAPERBOOK**

(For Index kindly see inside)

**Filed by**

**SAMARVIR SINGH(D/5559/2021)**
**COUNSEL FOR THE RESPONDENT NO. 7**
**A-127, GROUND FLOOR, DEFENCE COLONY,**
**NEW DELHI – 110049.**
**samarvir.singh@sschambers.in**
**+91-8369155210**

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**THROUGH COUNSEL**

**SAMARVIR SINGH(D/5559/2021)**
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**PLACE: NEW DELHI**
**DATED: 15/09/2025**

**BEFORE THE NATIONAL GREEN TRIBUNAL**
**PRINCIPAL BENCH, NEW DELHI**
**OA NO. 270 OF 2025**

**IN THE MATTER OF:**

**NEWS ITEM TITLED "CONTAINERS FROM SUNKEN SHIP LIKELY TO DRIFT TOWARDS ALAPPUZHA, KOLLAM COASTS IN 48 HOURS: INCOIS" APPEARING IN THE HINDU DATED 25.05.2025**

**AFFIDAVIT ON BEHALF OF THE RESPONDENT NO. 7**

I, Dr. Sudheer Joseph,S/o Shri. O. T. Joseph, aged about 53 years, working as Scientist-G & Group Director OMARS(Addl.Charge), Division Head, ARO,R/o House No. 52, Plot No. 2/3 Phase-III, Praneeth NaturesBounty, Shambipur village, Hyderabad, Telangana, being the Authorized Representative of the Respondent No. 7, Indian National Centre for Ocean Information Services (INCOIS) under Ministry of Earth Sciences, do hereby solemnly affirm and state on oath as under:

1. I have been instructed and authorised by the Director, Indian National Centre for Ocean Information Services ("INCOIS"), to file this affidavit on their behalf since I am aware of the subject matter of the newspaper article that initiated this *suo-motu* Original Application. Upon receiving such instructions and authorisation, I have studied the news article upon which this case is based, and I have also called for and studied documents relevant to the issues mentioned in the news article. These documents are maintained in the office of INCOIS in the regular and ordinary course of official work. I shall explain the issues involved based on these records and seek this Hon'ble Tribunal's leave to file additional affidavits to assist the Hon'ble Tribunal as the situation may require.

2. I state and submit that, the order dated 27.05.2025 passed by the Hon'ble National Green Tribunal, Principal Bench, New Delhi in Original Application No. 270/2025 and the News Item Titled "Containers from sunken ship likely to drift towards Alappuzha, Kollam Coasts in 48 hours: INCOIS" appearing in The Hindu dated 25.05.2025 have been perused by the Answering Respondent No. 7.

04 SEP 2025

NOTARY
BADDALA SRINIVASA RAO
GOVT. OF. TG (INDIA)

**PRELIMNARY SUBMISSIONS:**

3. The Hon'ble National Green Tribunal, Principal Bench, New Delhi has taken *suo-motu* cognizance of the News Item Titled "Containers from sunken ship likely to drift towards Alappuzha, Kollam Coasts in 48 hours: INCOIS" appearing in The Hindu dated 25.05.2025 by way of Original Application No. 270/2025.

4. It is submitted that Respondent No. 7 is INCOIS. INCOIS which was established in the year 1999 is an autonomous body under the Ministry of Earth Sciences ("MoES"). INCOIS provides the best possible ocean information and advisory services to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvements through systematic and focused research.

5. It is submitted that INCOIS has no statutory obligation to provide any report, however, INCOIS has acted promptly to assist the concerned agencies/authorities with management of the shipwreck. It is important to note that INCOIS is a scientific body which in the present case has provided relevant data relating to the possible trajectory of the spill that may have been caused due to the shipwreck. Such trajectory is determined based on numerous data parameters such as ocean current, temperature, wind speeds, etc. These possible trajectories that are provided by INCOIS are based on available data and simulations run by INCOIS using mathematical models and forecasting tools. It is also submitted that INCOIS is only involved in study of ocean state forecasting. Neither does INCOIS have the requisite tools/instruments for damage assessment nor is it statutorily bound to do so. Hence, INCOIS is not the appropriate agency for damage assessment.

**BRIEF FACTS:**

6. That on 24.05.2025, an incident involving a Liberian-flagged container ship MSC ELSA 3 (75.7667 °E, 9.5000 °N) was reported by the Indian Coast Guard and the Kerala State Disaster Management Authority. The incident of capsizing occurred around 13:25 hrs while the container ship was enroute from Vizhinjam to Kochi Port in the Arabian Sea.

04 SEP 2025
NOTARY
BADDALA SRINIVASA RAO
GOVT. OF. TG (INDIA)

7. That on 25.05.2025, at around 11:00am, INCOIS issued a press release on its website. The press release was a prompt advisory issued to aid all the agencies/authorities involved in management of the situation. INCOIS had used its advance technology Search and Rescue Aid Tool (SARAT), which performs the task of identifying possible areas for Search and Rescue operations and operations to locate any drifting/missing objects. The press release stated that there was a high chance of about 45% that overboard containers could drift towards the coast of Alappuzha district. It also mentioned that there was a 25% chance that the said containers could drift towards the coastal areas of Kollam district. The press release also provides a pictorial depiction of the areas that could possibly be affected. It is stated in the press release that till this time, no actual oil spill has been reported or confirmed by the concerned authorities, however, in order to be ready in every eventuality, INCOIS released the possible oil spill trajectory. The press release specifically provides a disclaimer in form of a "Note" at the bottom it. The disclaimer states that users are advised to consult relevant authorities for official guidance.

   A copy of the Press Release issued on 25.05.2025 at around 11:00am is annexed hereto and marked as **ANNEXURE A.**

8. That on 25.05.2025, at around 07:00pm, INCOIS issued a second press release on its website. This press release was issued for the purpose of providing an update on the press release issued in the morning. With passage of time, more data points were discovered and further simulation data was uploaded on the website by way of this press release. There was no confirmation of any oil spill, the entire data was on simulation. Based on these simulations, INCOIS predicted a high probability of around 80% that the overboard containers were likely to drift towards the coastal stretch of Alappuzha, Kollam and Thiruvananthapuram districts.

   A copy of the second Press Release issued on 25.05.2025 at around 07:00pm is annexed hereto and marked as **ANNEXURE B.**

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BADDALA SRINIVASA RAO
GOVT. OF. TG (INDIA)

9. That on 27.05.2025, this Hon'ble Tribunal was pleased to take *suo-motu* cognizance on the basis of the News Item titled "Containers from sunken ship likely to drift towards Alappuzha, Kollam Coasts in 48 hours: INCOIS" appearing in The Hindu dated 25.05.2025 by way of Original Application No. 270/2025. This Hon'ble Tribunal passed an order dated 27.05.2025, whereby it impleaded INCOIS as a respondent among others.

   A copy of the order dated 27.05.2025 passed by this Hon'ble Tribunal in Original Application No. 270/2025 is annexed hereto and marked as **ANNEXURE C.**

10. That on 27.05.2025, at around 07:00pm, INCOIS issued a third press release on its website. The press release stated that INCOIS deployed its Oil/Nurdles Spill Trajectory System. This system forecasts the movement and dispersion of Nurdles in the marine environment using advanced ocean circulation models. The simulation outputs help decision-makers assess the possible spread of Nurdles, identify vulnerable coastal areas, and coordinate timely for efficient containment and clean-up strategies to minimize ecological damage.

    A copy of the third Press Release issued on 27.05.2025 at around 07:00pm is annexed hereto and marked as **ANNEXURE D.**

**SUBMISSIONS:**

11. That the contents of the news article state that the Ship was carrying 640 containers including 13 with hazardous cargo and 12 containing calcium carbide. This information is based on media reports. INCOIS does not have information on the contents of the containers. This information has to be clarified by the ship operator or the concerned authorities.

12. That the contents of the news article state that INCOIS is monitoring the impacts. It is humbly submitted that INCOIS is not an impact monitoring agency, rather it is an agency which provides vital ocean state forecasts and advisory to safeguard the lives and livelihoods of maritime communities, especially during extreme weather events such as cyclones, high waves, and swell surges.

04 SEP 2025

NOTARY BADDALA SRINIVASA RAO Kukatpally, Hyd (Dt) GOVT. OF. TG (INDIA)

13. The news article also states that the ship was carrying 84.44 MT of diesel and 367.1 MT of furnace oil, as per a communication issued by the Ministry of Defence. In this regard, it is submitted that INCOIS has no information of the contents of the containers on the ship and that this information would be available with the ship operator or the concerned authorities.

14. That INCOIS is not concerned with assessing the violation of any statutes as INCOIS is a scientific autonomous body and is not a licensing authority or clearing authority. It is humbly submitted that the Central Pollution Control Board or the State Pollution Control Board will respond to the violations of statutes based in the impacts assessed by them.

15. That thus, based on the above-stated reasons, it is most respectfully prayed that this Hon'ble Tribunal may delete INCOIS as a party to the Original Application as INCOIS does not have any role apart from providing trajectory of the possible spill/missing objects for the concerned authorities to be able to contain the spill/missing objects, if any.

16. That the Answering respondent most humbly craves leave of this Hon'ble Tribunal to amend, add or alter this affidavit, if required, at a later stage. The Answering respondent also reserves its right to file a detailed affidavitif necessary. The answering Respondent also humbly craves leave of this Hon'ble Tribunal to make further submissions if so required, at the time of hearing.

17. That the statements made above are true to my knowledge and belief. The legal submissions made in the affidavit are based on the legal advice which I believe to be true and correct. I state that nothing has been concealed from this Hon'ble Tribunal.

**DEPONENT**

**VERIFICATION**

Verified at Hyderabad on ____ day of _____, 2025 that the contents of the above affidavit are true and correct, and no part of it is false and nothing has been concealed therefrom.

**DEPONENT**

04 SEP 2025

// ATTESTED //
BADDALA SRINIVASA RAO
ADVOCATE & NOTARY
Flat No: 108, Aditya Homes, Kukatpally, MM (Dt)
G.O.Ms No.2742, Sl. 189, Expire On : 25-12-2026
Cell: 9440777455

# Indian National Centre for Ocean Information Services (INCOIS)
# Ministry of Earth Sciences (MoES), Govt. of India, Hyderabad

## Press Release

### Search and Rescue and Oil spill trajectory advisories from INCOIS for Ship capsize incident off Kerala coast on 24 May 2025

The Indian National Centre for Ocean Information Services (INCOIS), Ministry of Earth Sciences, Government of India, provides vital ocean state forecasts and advisory services to safeguard the lives and livelihoods of maritime communities, especially during extreme weather events such as cyclones, high waves, and swell surges. These forecasts are generated using an advanced multi-model operational ocean forecasting system, which integrates real-time observational data from coastal and deep ocean buoys, including those deployed in the southern Indian Ocean.

On 24 May 2025, the Indian Coast Guard and the Kerala State Disaster Management Authority (KSDMA) reported regarding an incident involving the Liberian-flagged container ship MSC ELSA 3, which reportedly capsized around 13:25 hrs while en route from Vizhinjam to Kochi Port in the Arabian Sea  In response, INCOIS promptly activated its Search and Rescue Aid Tool (SARAT) to assist reported in locating containers or drifting objects. Additionally, Oil Spill Trajectory Advisory simulations were run to forecast the potential spread and movement of any oil discharge, aiding mitigation and clean-up planning.

**Search and Rescue Aid Tool (SARAT) output for drifting/missing objects**

Based on simulation results from INCOIS's Search and Rescue Aid Tool (SARAT), there is a high probability (45%) that overboard containers could drift toward Region 1, covering the entire coastal stretch of Alappuzha district—including Alappad, Purakkad, and Chappakkadavu. Region 2, which includes the coastal areas of Kollam district such as Vellanathuruthu, Kovilthottam, and Maruthadi, has a 25% chance of being affected. These regions may be impacted within the next 48 hours and should be monitored closely to mitigate potential risks.

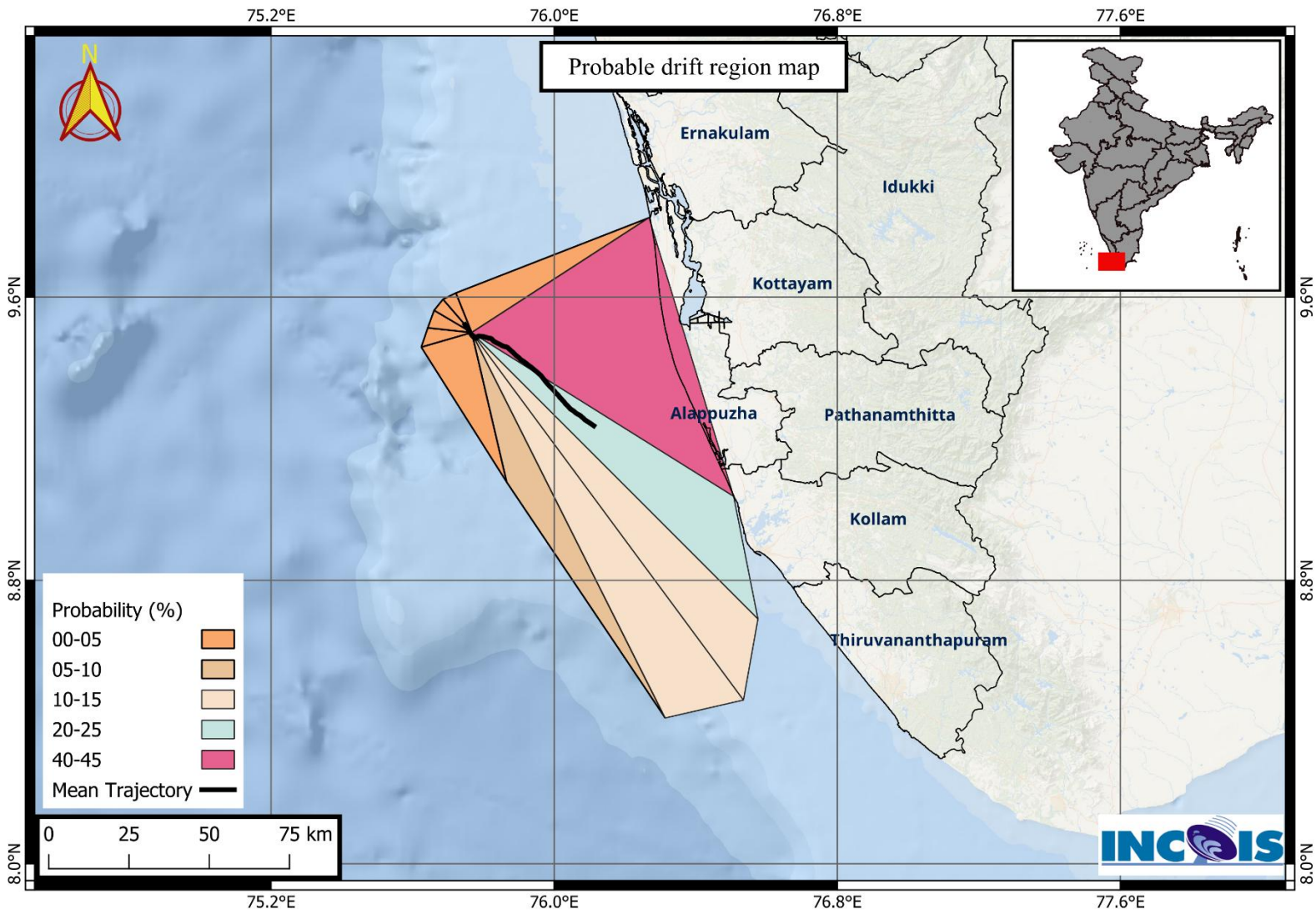



**Figure 1 :** Probable areas for Search and rescue operations.

**Oil Spill Trajectory pattern of any possible oil leak from the vessel**

An actual oil spill incident has not yet been reported or confirmed by the concerned authorities. However, based on hypothetical simulations, the spilled oil pollutant can reach the coastal stretch of Alapuzha, Amabalapuzha, Arattupuzha and Karunagapalli within 36-48 hrs of release. These coastal zones are at risk of contamination and should be given prompt attention to minimize potential environmental impact.

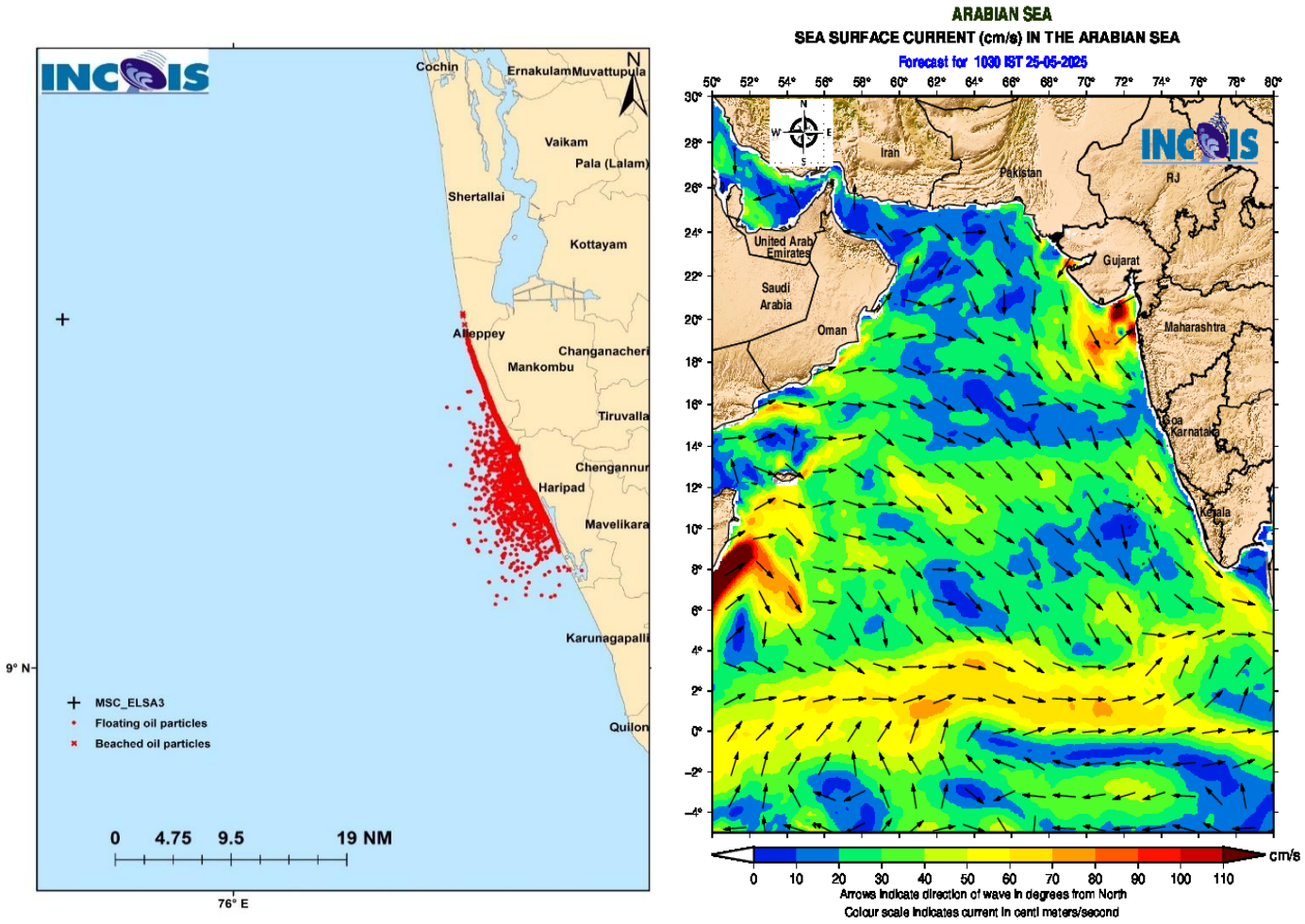



**Figure 2:** Oil Spill Trajectory pattern to coastal areas of any possible oil leak (Left), Surface current forecast valid at 25-05-2025 10:30 (Right)

INCOIS continues to closely monitor the situation and remains in coordination with relevant authorities, providing vital ocean forecast information and advisory services to support ongoing search, rescue, and environmental response operations.

25th May 2025
INCOIS, Hyderabad

**Note**: The information provided is based on available data and simulations run by INCOIS using Mathematical models and forecasting tools. INCOIS is not responsible for any decisions or actions taken based on this information. Users are advised to consult relevant authorities for official guidance.

# Indian National Centre for Ocean Information Services (INCOIS)
# Ministry of Earth Sciences (MoES), Govt. of India, Hyderabad

## Press Release

### Search and Rescue and Oil spill trajectory advisories from INCOIS for Ship capsize incident off Kerala coast on 24 May 2025

The Indian National Centre for Ocean Information Services (INCOIS), Ministry of Earth Sciences, Government of India, provides vital ocean state forecasts and advisory services to safeguard the lives and livelihoods of maritime communities, especially during extreme weather events such as cyclones, high waves, and swell surges. These forecasts are generated using an advanced multi-model operational ocean forecasting system, which integrates real-time observational data from coastal and deep ocean buoys, including those deployed in the southern Indian Ocean.

On 24 May 2025, the Indian Coast Guard and the Kerala State Disaster Management Authority (KSDMA) reported regarding an incident involving the Liberian-flagged container ship MSC ELSA 3, which reportedly capsized around 13:25 hrs while en route from Vizhinjam to Kochi Port in the Arabian Sea  In response, INCOIS promptly activated its Search and Rescue Aid Tool (SARAT) to assist in locating containers or drifting objects. Additionally, Oil Spill Trajectory Advisory simulations were conducted to forecast the potential spread and movement of the oil discharge, aiding in mitigation and clean-up planning. The oil spill bulletin is attached as Annexure 1 to this document.

**Search and Rescue Aid Tool (SARAT) output for drifting/missing objects**

Based on simulation results from INCOIS's Search and Rescue Aid Tool (SARAT), there is a high probability (80%) that overboard containers may drift towards Region 1, covering the entire coastal stretch of Alappuzha, Kollam and Thiruvananthapuram districts. These regions may be impacted within the next 96 hours and should be monitored closely to mitigate potential risks.

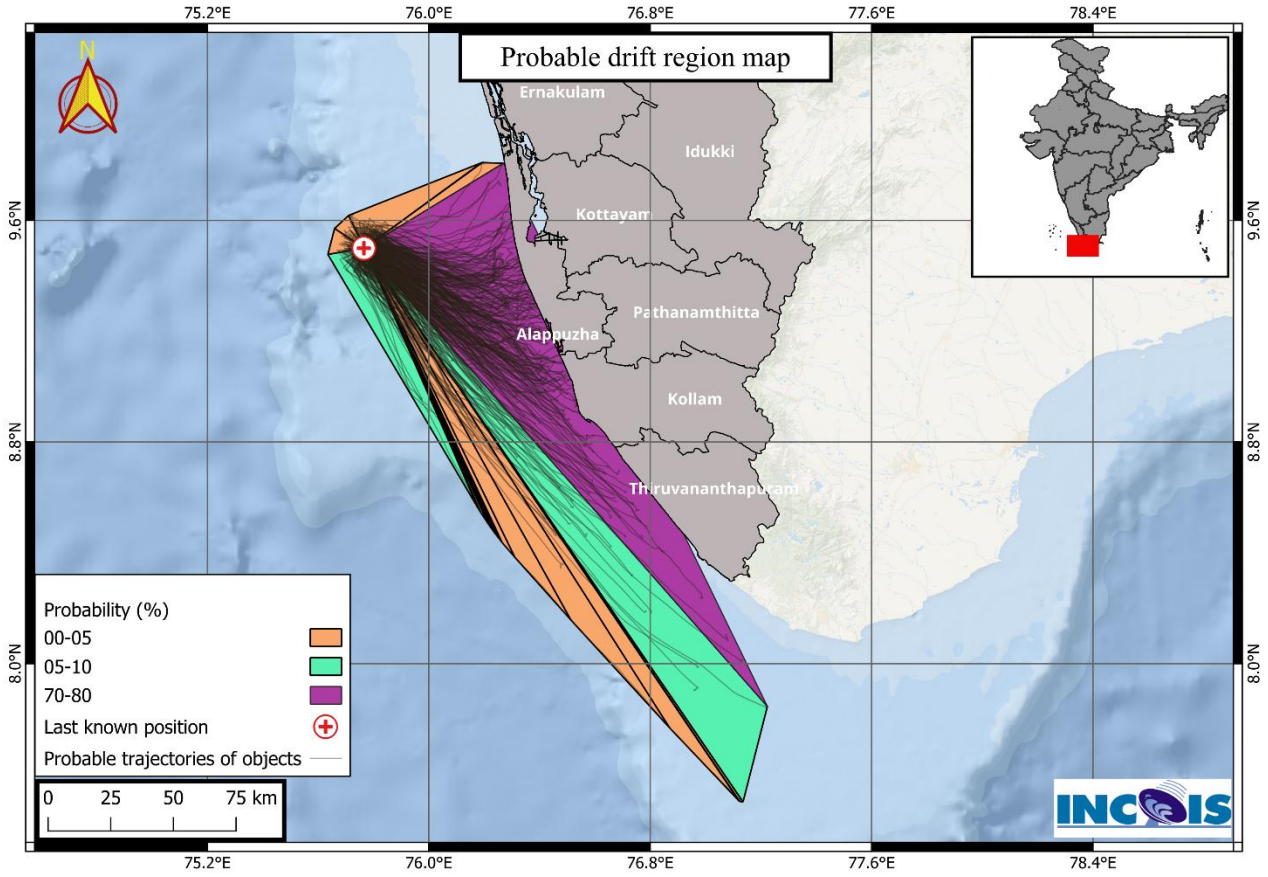



**Figure 1 :** Probable drift areas of overboard containers.

INCOIS continues to closely monitor the situation and remains in coordination with relevant authorities, providing vital ocean forecast information and advisory services to support ongoing search, rescue, and environmental response operations.

25th May 2025
INCOIS, Hyderabad

**Note**: The information provided is based on available data and simulations run by INCOIS using Mathematical models and forecasting tools. INCOIS is not responsible for any decisions or actions taken based on this information. Users are advised to consult relevant authorities for official guidance.

## Annexure: 1

**INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES. MoES, GOI, HYDERABAD**

*Bulletin -1, Issued on 25.05.2025, 1900hrs, IST*

**ADVISORY ON THE OIL SPILLED SOUTHWEST OFF KOCHI**

Details of the model run

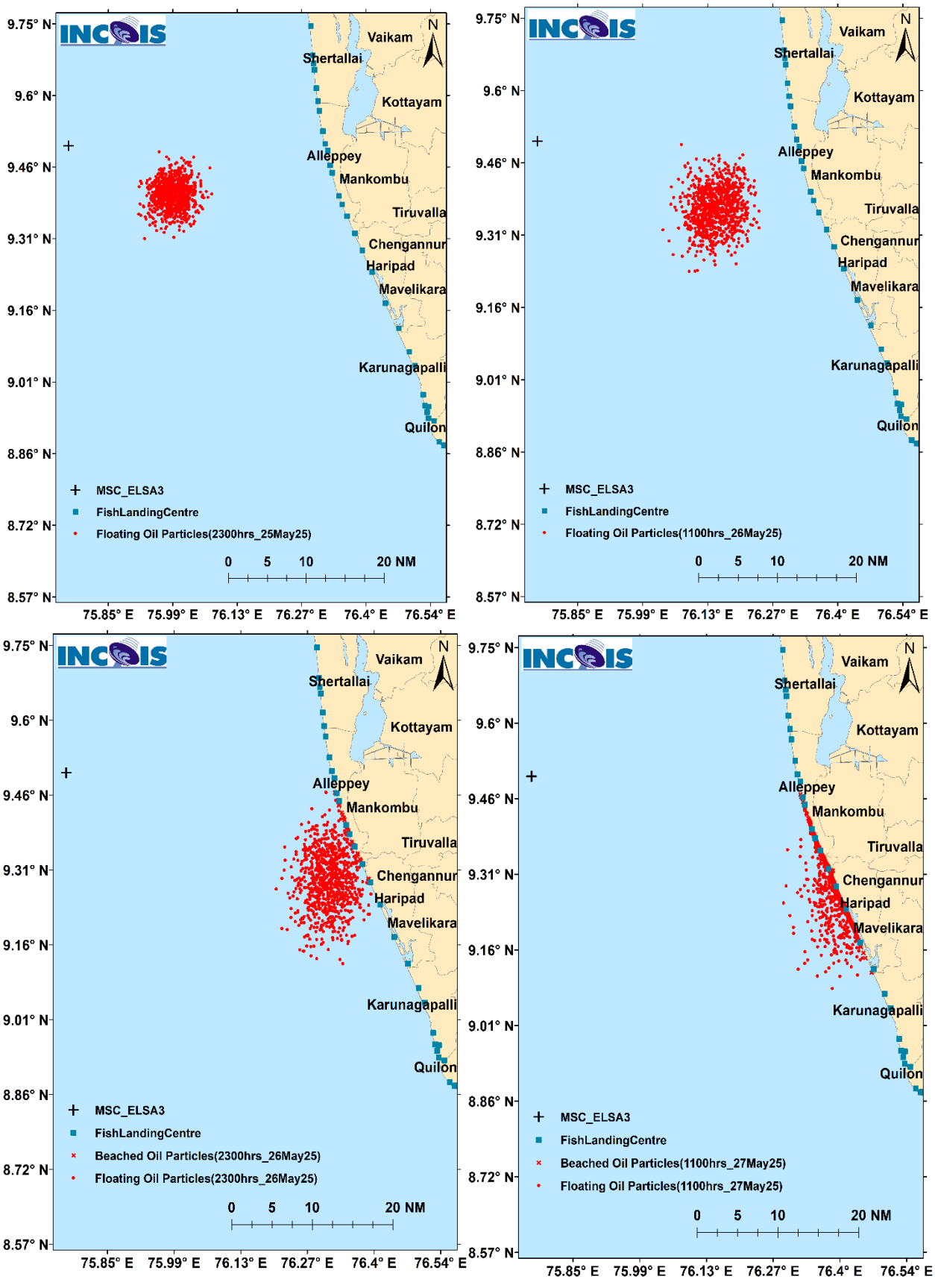
Spill location: 73.7667 °E, 9.5000 °N; Spill start at 11:00 hrs of 25.05.2025.
Pollutant: Very Low Sulphur Fuel Oil (VLSFO).
Quantity: 100 Tons is considered for the simulation (as exact quantity not known)
Model Run: 1100hrs hrs of 25.05.2025 till 1100hrs of 27.05.2025 IST.

Advisory:

Based on simulation results, the oil pollutant from the reported spill location is observed to drift southeastward toward the coast during the 23 hours of 25 May. By 1100 hours on 26 May, the spill continues to move east-southeast, approaching the shoreline. Approximately 12 hours later, by 2300 hours on 26 May, the pollutant makes landfall near Alappuzha (Alleppey), affecting an estimated 11.4 nautical miles of coastline. By the following day (27 May), the impacted coastal stretch increases to approximately 23 nautical miles. The oil drift patterns are illustrated in the accompanying figures. The black "+" symbol marks the reported spill location, while red crosses and red dots represent beached and floating oil particles, respectively. The spill movement is being continuously monitored using forecast data. INCOIS will issue periodic advisories to provide timely updates and guidance for mitigation efforts.

Table 1: Quantitative status of the spilled oil pollutant (Approx)

| S.no | Time/Date (IST) | Floating quantity (Tons) | Beached quantity (Tons) | Evaporated and dispersed quantity (Tons) | Coastline affected (NM) |
|---|---|---|---|---|---|
| 1. | 2300Hrs_25.05.25 | 88 | 0 | 12 | 0 |
| 2. | 1100Hrs_26.05.25 | 83 | 0 | 17 | 0 |
| 3. | 2300Hrs_26.05.25 | 75 | 3 | 22 | 11.4 |
| 4. | 1100Hrs_27.05.25 | 30 | 45 | 25 | 23 |


INCOIS
Vaikam
Shertallai
Kottayam
Alleppey
Mankombu
Tiruvalla
Chengannur
Haripad
Mavelikara
Karunagapalli
Quilon
MSC_ELSA3
FishLandingCentre
Floating Oil Particles(2300hrs_25May25)
Floating Oil Particles(1100hrs_26May25)
Beached Oil Particles(2300hrs_26May25)
Floating Oil Particles(2300hrs_26May25)
Beached Oil Particles(1100hrs_27May25)
Floating Oil Particles(1100hrs_27May25)
0 5 10 20 NM
9.75° N
9.6° N
9.46° N
9.31° N
9.16° N
9.01° N
8.86° N
8.72° N
8.57° N
75.85° E
75.99° E
76.13° E
76.27° E
76.4° E
76.54° E

Item No. 20A Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL**
**PRINCIPAL BENCH, NEW DELHI**

Original Application No. 270/2025

News Item titled "Containers from sunken ship likely to drift towards Alappuzha, Kollam Coasts in 48 hours: INCOIS" appearing in The Hindu dated 25.05.2025.

Date of hearing: 27.05.2025

**CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON**
**HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER**

Applicant: None appeared

**ORDER**

1. This original application is registered *suo-motu* on the basis of the news item titled "Containers from sunken ship likely to drift towards Alappuzha, Kollam Coasts in 48 hours: INCOIS" appearing in The Hindi dated 25.05.2025.

2. The news item relates to the Liberian – flagged container ship, MSC ELSA 3 which sank off the Kochi Coast on Sunday morning drifting towards the entire coastal stretch of Alapppuzha district and parts of Kollam. The Ship was carrying 640 containers including 13 with hazardous cargo and 12 containing calcium carbide.

3. As per the news item Indian National Centre for Ocean Information Services (INCOIS) is monitoring the impacts. As per the initial study Alappad, Purakkad and Chappakkadavu in Alappuzha apart from Vellanathuruthu, Kovilthottam and Maruthadi along the Kollam coast have a 25 % chance of being affected. The ship was also carrying 84.44

MT of diesel and 367.1 MT of furnace oil, as per a communication issued by the Ministry of Defence.

4. Further the ship owner firm MSC is expected to clarify on the contents of the hazardous cargo in the 13 containers. Since the sunken ship is carrying hazardous materials like calcium carbide, oil and other undisclosed items there are chances of serious impact to the marine and coastal environment affecting the bio diversity and water quality of the area. On account of wave, wind and current actions of the waters these pollutants can travel to other coastal parts of the Country including Lakshadweep islands affecting them. The impact on the Lakshadweep Island will be severe as the Insland coastal water has high bio-diversity with corals.

5. The above matter indicates violation of the Biodiversity Act, 2002; Water (Prevention and Control of Pollution) Act, 1974 and the Environment Protection Act, 1986.

6. The news item raises substantial issues relating to compliance with the environmental norms and implementation of the provisions of scheduled enactment.

7. The power of the Tribunal to take up the matter *suo-motu* has been recognized by the Hon'ble Supreme Court in the matter of *"Municipal Corporation of Greater Mumbai vs. Ankita Sinha & Ors." reported in 2021 SCC Online SC 897.*

8. Hence, we implead the following as respondents in the matter:

(i) Member Secretary, Kerala Pollution Control Board:
Head Office, Pattom PO,
Thiruvananthapuram, Kerala - 695004.

(ii) Member Secretary,
Lakshadweep Pollution Control Committee:
Lakshadweep Administration,
Dept. Of Sc. and Technology & Environment
Kavaratti Island-682 555, Lakshadweep

(iii) Member Secretary,
Central Pollution Control Board (CPCB):
Parivesh Bhawan, East Arjun Nagar,
Delhi-110032

(iv) Secretary, Ministry of Environment,
Forest and Climate Change (MoEF&CC),:
Indira Paryavaran Bhawan, Jorbagh Road,
New Delhi – 110 003

(v) Secretary,
Ministry of Ports, Shipping and Waterways:
Parivahan Bhavan, 1,
Parliament Street, New Delhi.

(vi) Director General, Indian Coast Guards:
Coast Guard Headquarters,
National Stadium Complex,
New Delhi – 110001

(vii) Director-National Centre for Ocean
Information Services (INCOIS)
under Ministry of Earth Sciences:
"Ocean Valley", Pragathi Nagar (BO),
Nizampet (SO) Hyderabad-500090

9. Issue notice to the above respondents for filing their response/reply by way of affidavit at least one week before the next date of hearing. If any respondent directly files the reply without routing it through his advocate then the said respondent will remain virtually present to assist the Tribunal.

10. List on 30.07.2025.

Prakash Shrivastava, CP

Dr. A. Senthil Vel, EM

May 27, 2025
Original Application No. 270/2025
A

# Indian National Centre for Ocean Information Services (INCOIS)
# Ministry of Earth Sciences (MoES), Govt. of India, Hyderabad

## Press Release

### INCOIS advisory Bulletin (No.3) on drift of Containers, Debris, Nurdles due to wreckage of MSC ELSA-III Ship off Kerala coast on 24 May 2025

Indian National Centre for Ocean Information Services (INCOIS), under the Ministry of Earth Sciences, Government of India, delivers critical ocean state forecasts and advisory services aimed at safeguarding the lives and livelihoods of maritime communities. These services are especially vital during extreme weather events such as tropical cyclones, high wave episodes, swell surges, search and rescue, oil spill, etc. INCOIS employs a state-of-the-art, multi-model operational ocean forecasting system that assimilates real-time observational data from a network of coastal and deep-ocean buoys.

On 24 May 2025, the Indian Coast Guard and the Kerala State Disaster Management Authority (KSDMA) reported a maritime incident involving the Liberian-flagged container vessel *MSC ELSA 3*. The vessel, which was en route from Vizhinjam to Kochi Port, reportedly capsized at approximately 13:25 hours in the Arabian Sea.

INCOIS promptly activated its Search and Rescue Aid Tool (SARAT). This tool is designed to assist maritime authorities in identifying probable drift paths of containers, or other floating objects at sea based on real-time and forecast oceanographic and meteorological data. The SARAT simulation provided vital insights to support ongoing search and rescue operations being carried out by the Indian Coast Guard and other response agencies.

In addition, recognizing the potential risk of environmental contamination, INCOIS deployed its Oil/Nurdles Spill Trajectory System. This system forecasts the movement and dispersion of Nurdles in the marine environment using advanced ocean circulation models. The simulation outputs help decision-makers assess the possible spread of Nurdles, identify vulnerable coastal areas, and coordinate timely and efficient containment and clean-up strategies to minimize ecological damage.

This coordinated response underscores the critical role of operational oceanographic services in maritime safety and environmental protection. INCOIS continues to monitor the situation and remains in close coordination with the Coast Guard, KSDMA, and other stakeholders to provide updated advisories as needed.

The updated information of Search and Rescue Aid Tool and Nurdle Spill Trajectory advisories given as Annexure-1 and Annexure-2 respectively.

**Annexure-1**

**Search and Rescue Aid Tool (SARAT) output for drifting/missing objects**

Based on the simulation outputs generated by INCOIS using its Search and Rescue Aid Tool (SARAT), there is an estimated 80% probability that the containers/debris which went overboard from the capsized vessel MSC ELSA 3 may drift toward the southeastern coastal region of Kerala, as shown in figure 1. This region encompasses the entire coastal stretches of Alappuzha, Kollam, and Thiruvananthapuram districts. According to the model projections, these containers or floating debris are likely to approach the coastline within the next 96 hours, depending on prevailing ocean currents, wind patterns, and sea state conditions. This forecast provides a critical window for local authorities to enhance coastal surveillance, issue precautionary advisories to coastal communities, and prepare for potential marine hazards such as navigational obstructions or shoreline contamination.

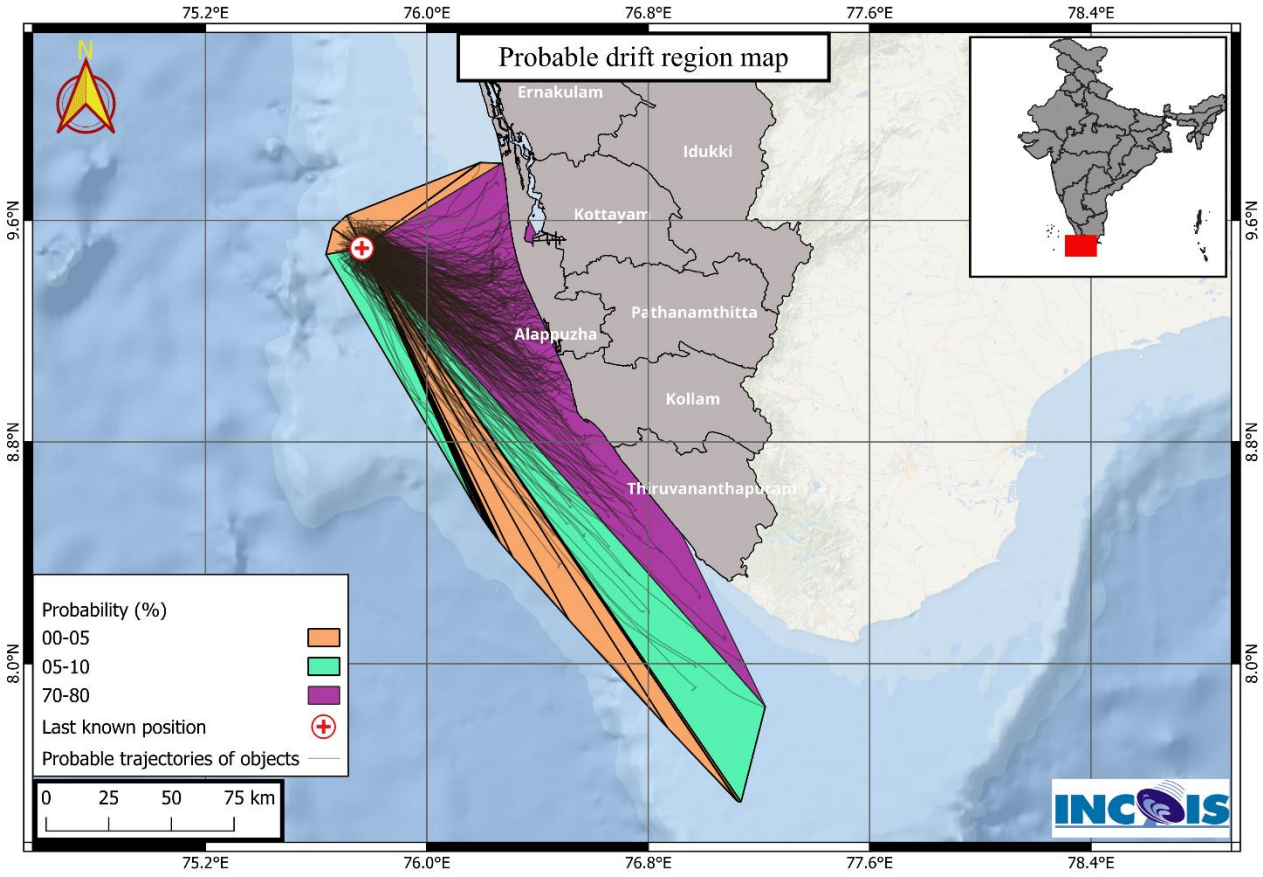



Figure 1**:** Probable drift areas of overboard containers/debris.

**Annexure-2**

**Nurdle Spill Trajectory pattern of (any possible) nurdle leak from the vessel (updated info)**

Details of the model run

Spill location: 75.7667 °E, 9.5000 °N; (Considering the wreck location)

Pollutant: Nurdle Particles.

Quantity: 100 Tons is considered for the simulation (as exact quantity not known)

Model Run: 1500hrs hrs of 24.05.2025 till 1500hrs of 29.05.2025 IST.

Advisory:

Based on simulation results, the nurdles are observed to drift southeastward from the reported location towards the quillon coast during the 15 hours of 26 May. By 1500 hours on 27 May, the drift continues moving east-southeast, beaching at Trivandrum. Around 1500 hours of 28 May, the pollutant continues beaching along Trivandrum coast, affecting approximately 83 nautical miles of shoreline. By 1500hrs of 29 May, the impacted coastal stretch (84 nautical miles) expands towards Kovalam.

The nurdle drift patterns are illustrated in the accompanying figures. The black "+" symbol marks the reported spill location, while red crosses and red dots represent beached and floating nurdle particles, respectively. The spill movement is continuously monitored using forecast data. INCOIS will issue periodic advisories to provide timely updates and guidance for mitigation efforts.

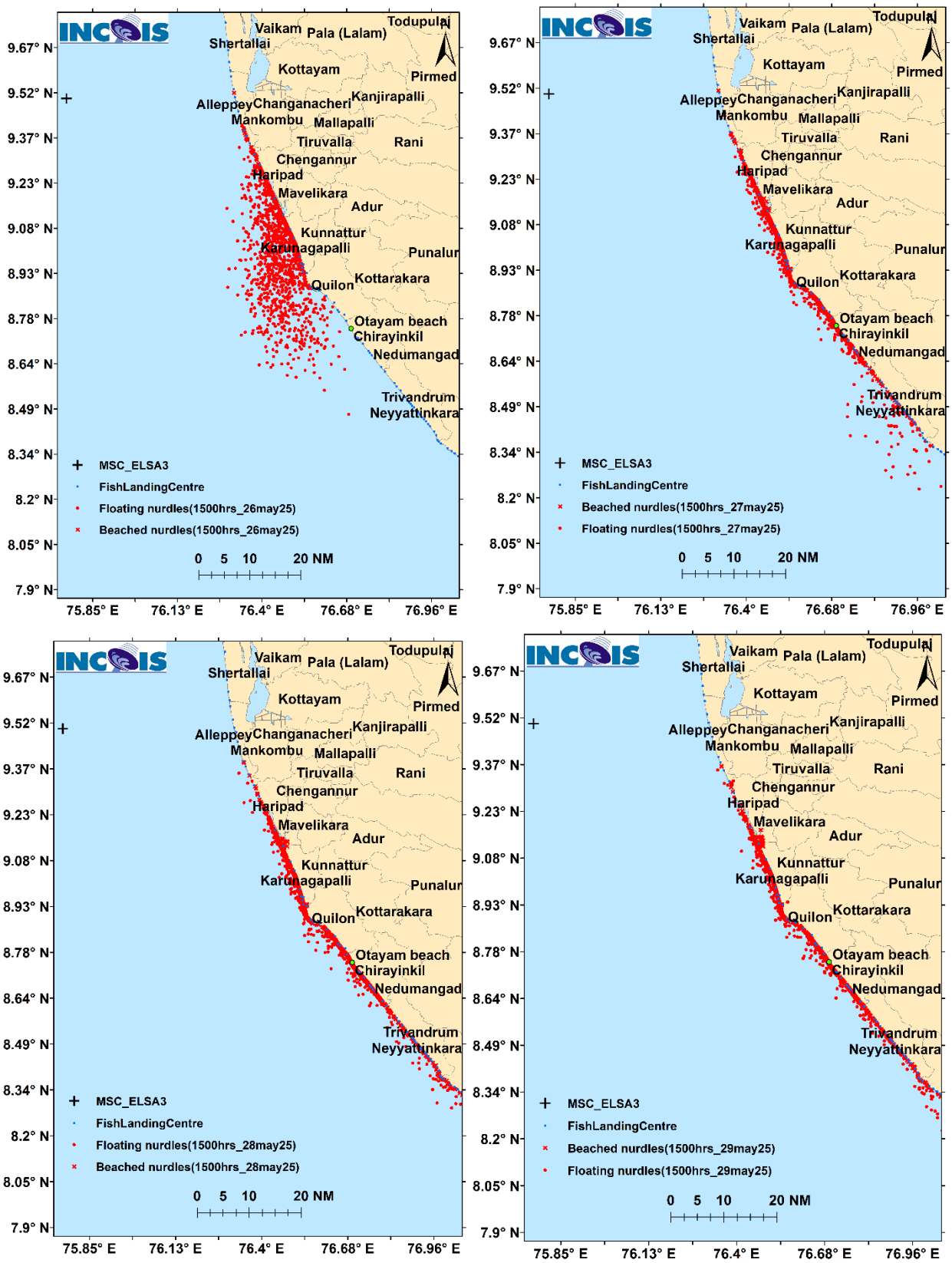



Figure 2**:** Probable Nurdle drift pattern along Kerala coast