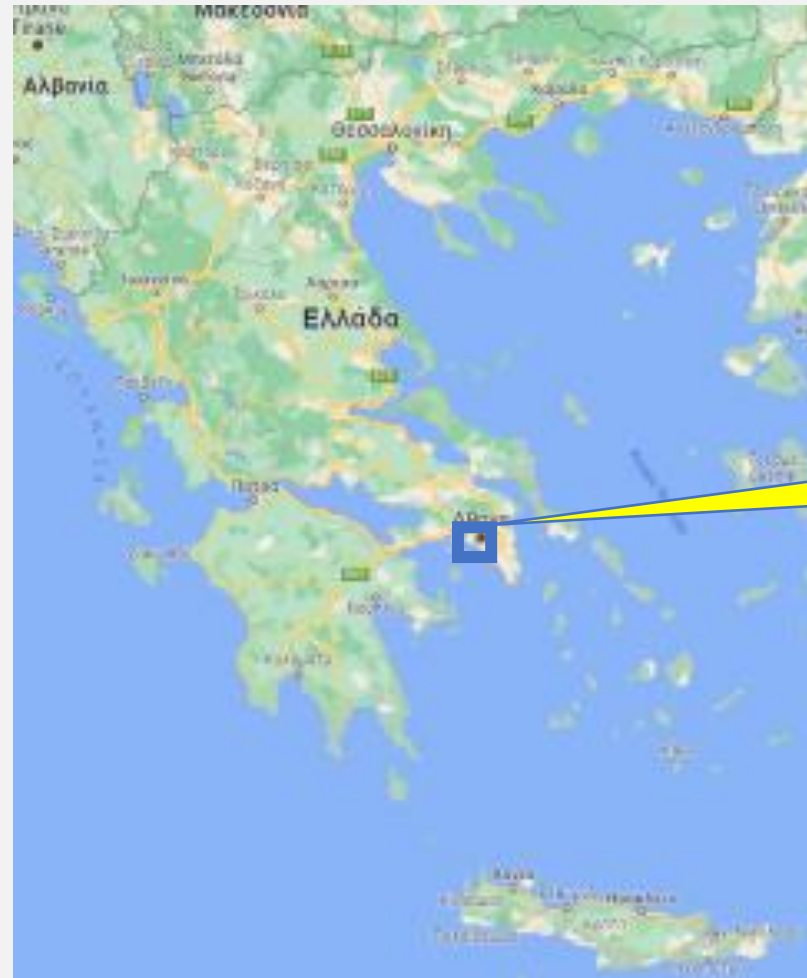


# ***“Sea cleaning activities and waste management in ports, PPA’s case study”***

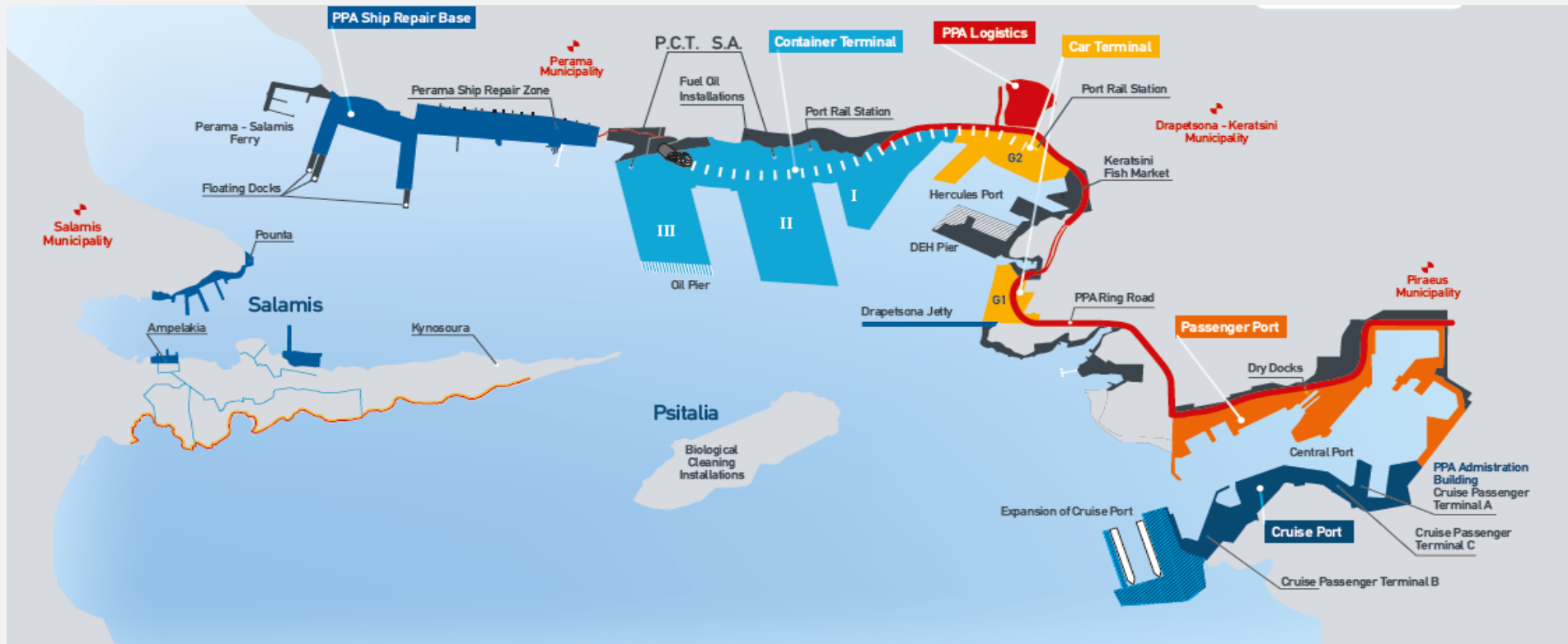
E. Lagkadinou, C. Kontogiorgi  
Environmental Protection Sector  
Property and Environmental Dpt, PPA SA

# Piraeus Port at a glance



Piraeus port

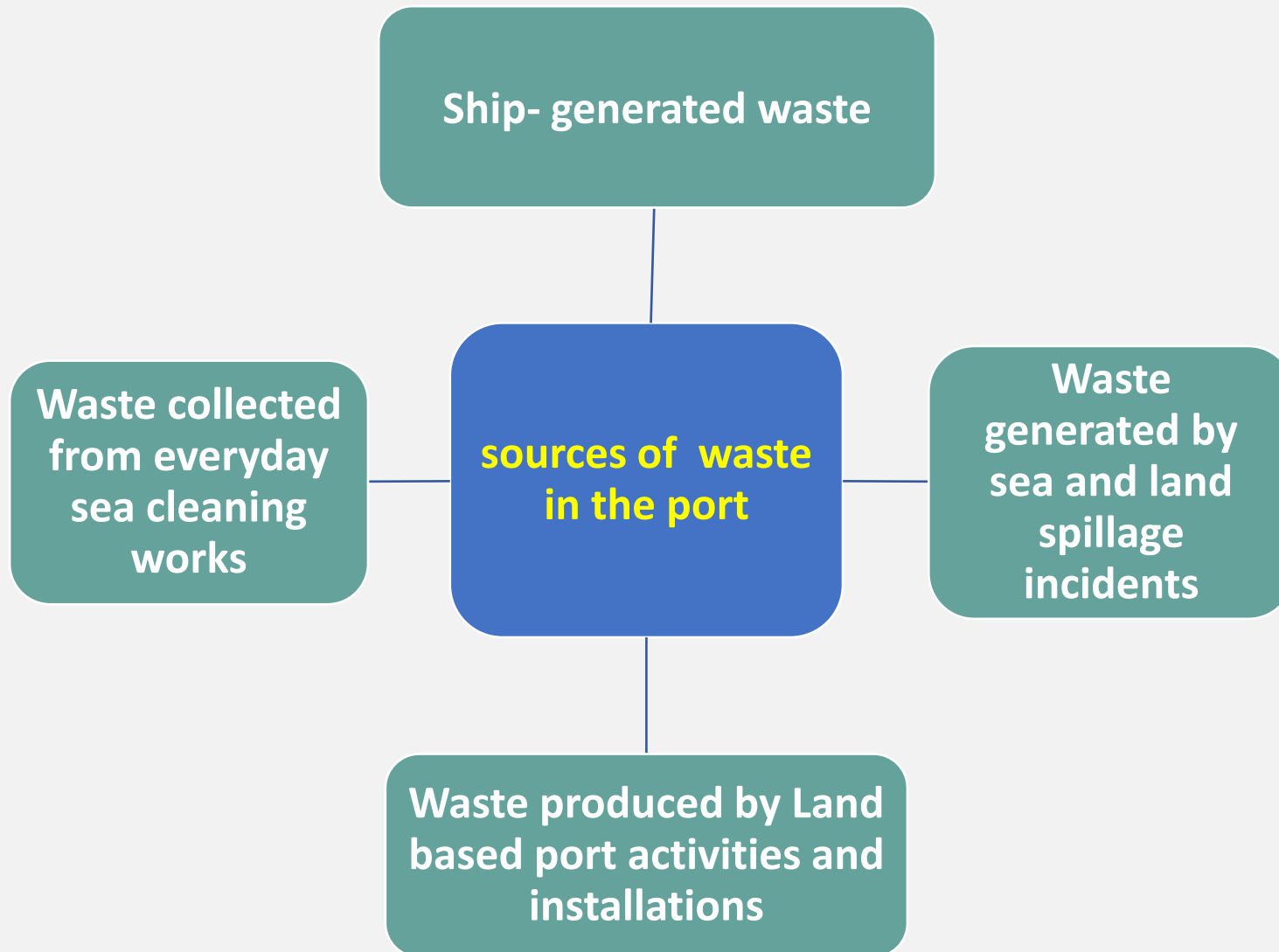
# Piraeus Port at a glance



- PPA serves nearly 20 million passengers per annum
- More than 1.1 million cruise passengers

- Car terminal with approx. 400.000 cars
- In the top 5 largest container ports in Europe with approx. 5.5 mil TEUs

# Port's sources of waste



## Ship- generated waste

### Waste Management Plan for Ship-generated Waste

We implement a special Plan, approved by the competent Ministry, for the receipt and management of ship-generated waste and cargo residues in accordance with the relevant European Directive 883/2019, the International Convention for the Prevention of Pollution from Ships MARPOL 73/78.

According to this Plan, a Port Reception System has been created for the collection and management of solid and liquid waste from ships by specialized contractors. To date, there has been no complaint from any ship about the inadequacy of the provided services.

**228.483 tn in 2022**

## Waste produced by Land based port activities and installations

### Waste Management Plan for Land based installations and activities

Since 2009 we implement special management system in order to enhance recycling, to enhance the reuse of materials, to reduce the quantities led for final disposal in landfills. We recycle:

- biowaste
- empty toners
- WEEE
- paper
- used batteries & accumulators
- wood waste
- glass
- lubricating oils
- functional garage waste
- packaging
- old tires
- docks operational waste

2.429 tn in 2022

# Port's waste management planning

**Waste collected from everyday sea cleaning works**  
**Waste generated by sea and land spillage incidents**

Sea Contingency Plan  
Land Contingency Plan

**The current presentation focuses to Marine clean-up operations**

# Waste from everyday sea cleaning works

Inspections by dedicated antipollution vessel by PPA's authorized contractor are performed in everyday base to collect all the floating waste.

The total marine cleaning area is approx 17 km<sup>2</sup> and the length of coastline is approx 33 km:

- 2.74 km<sup>2</sup> Passenger and Cruise port
- 14.26 km<sup>2</sup> the rest port area

## Frequency of inspections/sea cleaning works

Port area	Frequency
Passenger and Cruise port	2 times /day, 7 days/week
Ship repair area and commercial port	1 time/day, 5 days/week
Cleaning of the vertical sections of the seawalls and rocks along the coastline	2 times/year



# Waste from everyday sea cleaning works

During the ordinary sea cleaning works are collected **approx. 5 m<sup>3</sup> of marine litter per week**.

The majority of the collected waste are listed as marine litters and managed as non hazardous solid waste of category EWC 20 01 99 (other fractions not otherwise specified).

## Severe storm events

Upon the outbreak of extreme climatic phenomena the collected waste is differentiated in quantity and kind of, affected by weather conditions and stream runoff.

After severe storms and weather events end up in the sea huge volumes of large scale waste, branches, tree trunks, brought materials from drainage network. The direction of the sea currents resulted to the accumulation of the waste to specific areas at the port.

Approx. 2-4 times/ year    ➡    collected 10-20 m<sup>3</sup> marine litter per week

Highlight: storm 'Mpalos' on October 2021    ➡    collected 154 m<sup>3</sup> (8.06 tons of waste).

# Waste from spillage incidents

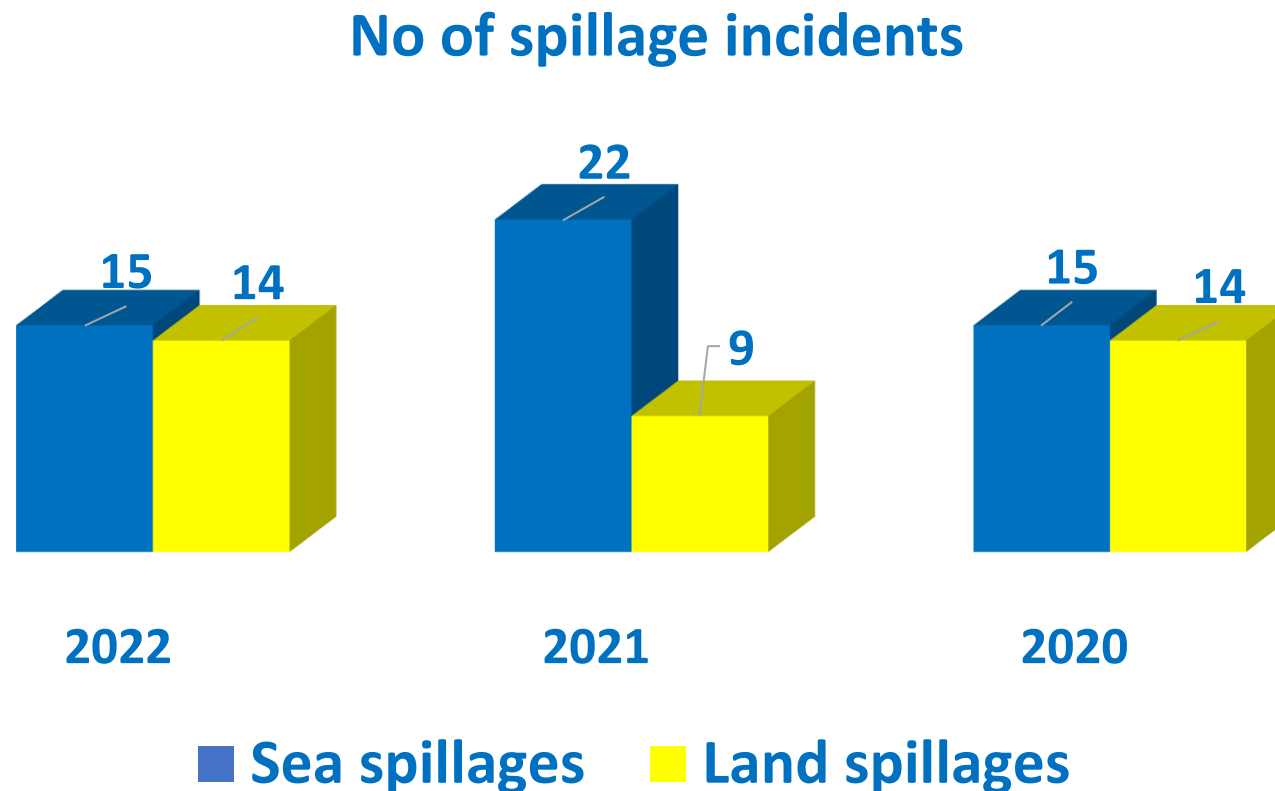
---

PPA implements the provisions of the International Convention on Preparedness, Cooperation and Response to Marine Oil Pollution OPRC (1990), the Protocol on Preparedness, Cooperation and Response to Marine Pollution Incidents by Hazardous and Noxious Substances OPRC – HNS (2000) and the National legislation for the preparation and implementation of a Marine Pollution Emergency Response Plan to deal with incidents of pollution from oil and other harmful substances within the PPA's Port Zone.

In this context PPA has approved by the Hellenic Coast Guard and applies through specialized contractor:

- **Sea Contingency Plan for spill incident at the sea area**
- **Land Contingency Plan for dangerous substances spillages in land area**

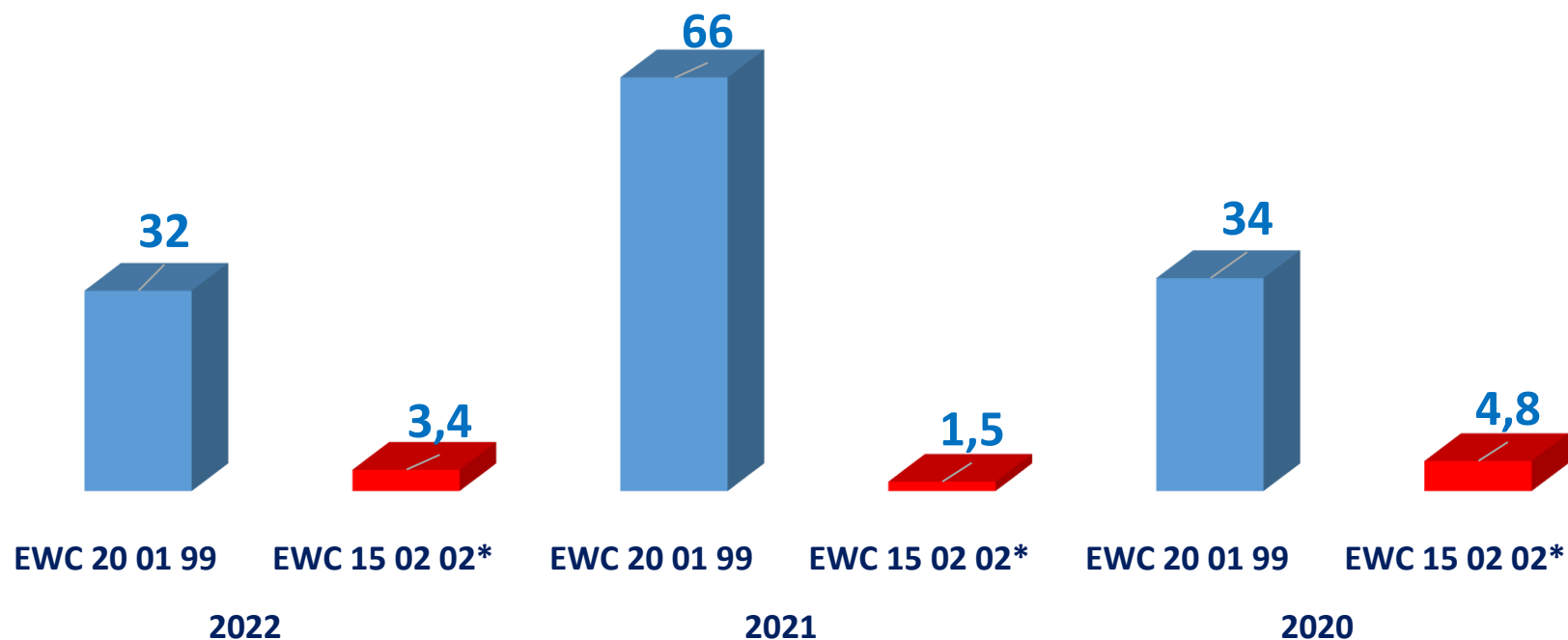
# Activation of Contingency Plans



All incidents were small and local and were dealt immediately without any problems, by implementing the PPA S.A. Emergency Plans

# Waste quantities collected from sea

Waste collected from sea (tns)



**EWC 20 01 99** (other fractions not otherwise specified) managed as non hazardous solid waste sent to recovery.

**EWC 15 02 02\*** (absorbents, filter materials contaminated by hazardous substances) managed as hazardous waste at special hazardous management units.

# Special equipment at sea cleaning operations

---

Proper and dedicated equipment is available on site :

- 1 special anti-pollution vessel for cleaning the sea surface which provides the possibility of collecting and storing both liquid and solid waste collected from the sea
- 3 auxiliary boats
- 500m meters of floating booms
- Approved absorbent materials
- Portable oil pumping systems (skimmers)
- High pressure steam washing machine
- 1 tank truck for liquid hazardous waste
- 1 solid waste truck

# Photos\_ Sea cleaning operations

Floating litter



Auxiliary boat



High pressure steam washing machine



Collected waste





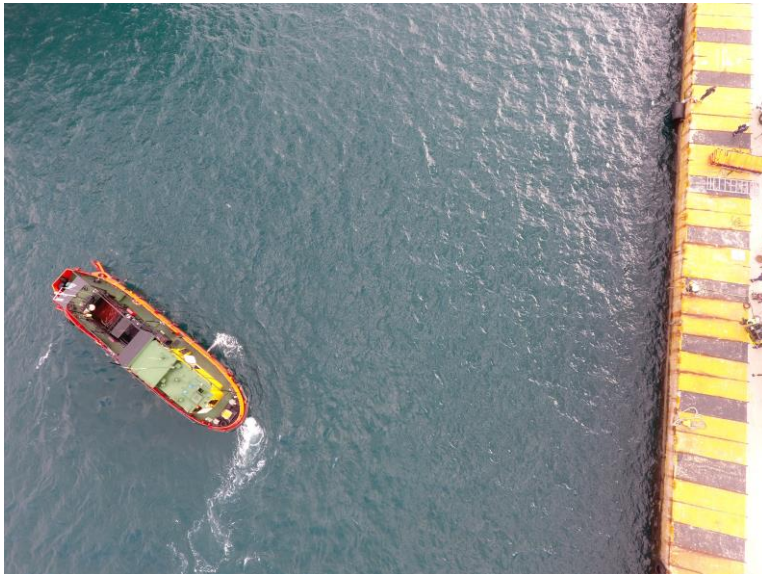
# Photos\_ Spill response



Anti-pollution  
vessel



Floating booms  
application



Floating booms  
& skimmer





Thank you for  
the attention!!