



LATEST CHALLENGES FOR MAJOR OIL SPILL RESPONSE

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CHALLENGES: AN OSRO'S PERSPECTIVE

Michael Roldan
Regional Director, Americas

What is OSRL

Largest
International
industry funded
cooperative

Owned by major oil
& gas production /
transportation
companies

Train and respond
effectively anywhere
in the world



Membership

35 Participant members



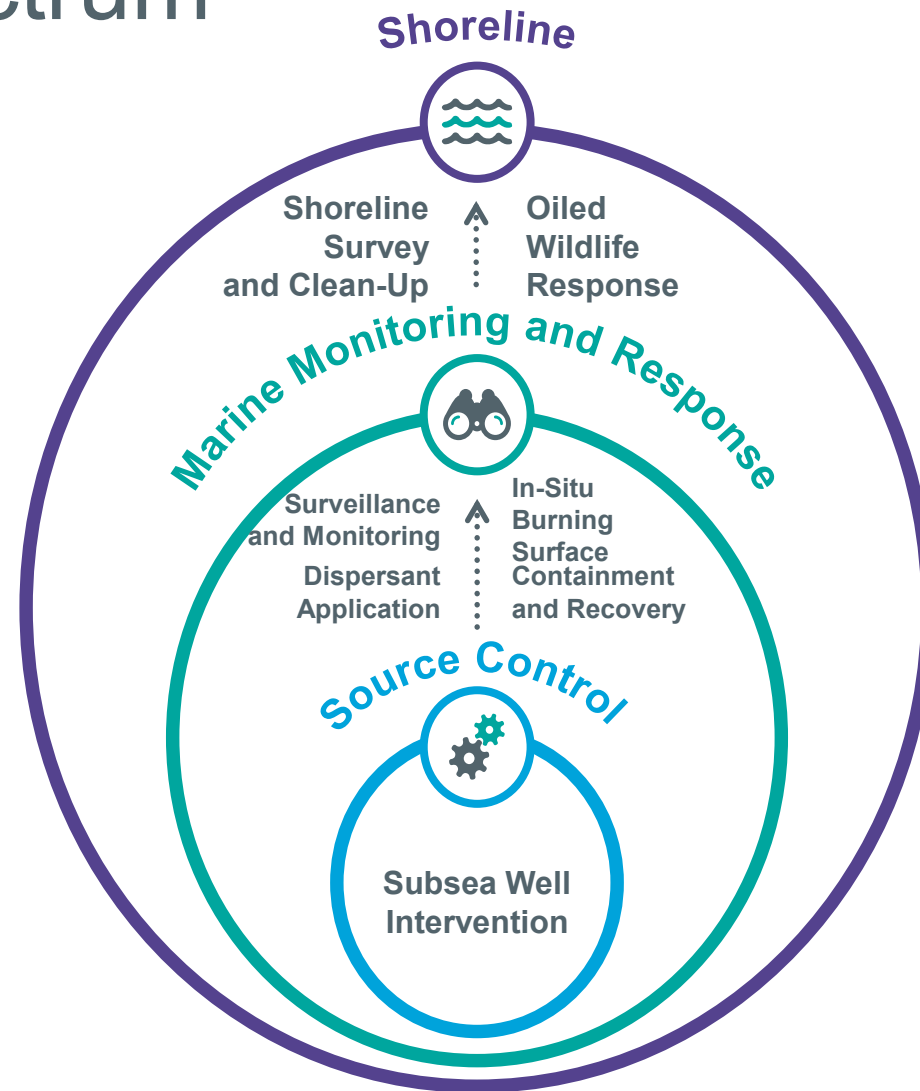
And 120+ Associate Members

Global Footprint - Regional Response

12 Locations Worldwide



Response Spectrum



Containment & Recovery

Advancing Skimmers



In-situ Burning



Boeing-727 Spray Aircraft (2)

Global Dispersant Stockpile



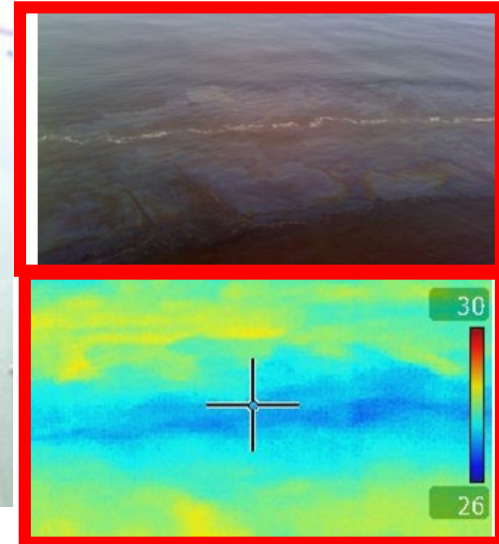
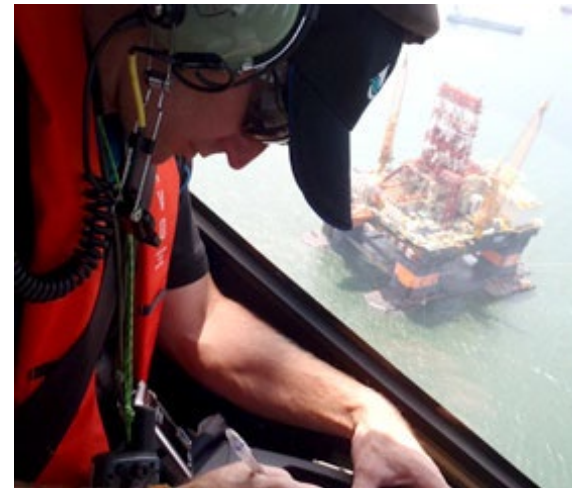
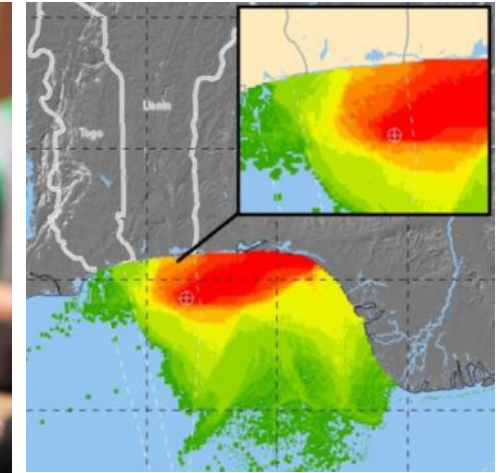
Surveillance and monitoring

💧 Satellite, Aerial Services

- > Global satellite imagery
- > Aerial surveillance services

💧 Modelling

- > Capability to run surface models and subsea (3D) models to track the movement of oil before wind driven currents act upon its trajectory.



Subsea Well Intervention Service (SWIS)



People: Responders and Technical Advisors

- 💧 Oil Spill Response is Science & Technology-driven
- 💧 270 Employees
- 💧 Subject Matter Expert-Technical Groups
 - > Dispersants
 - > In-situ Burning
 - > SCAT
 - > Offshore
 - > Surveillance & Monitoring
 - > Wildlife



Review of Recent Incidents

Highlighted

- > 3 Shipping incidents (Sri Lanka, Reunion, Gibraltar)
- > 2 Terminal offloading operations – failure of SPM hose/PLEM (Thailand & Peru)
- > 2 Infrastructure – Pipeline Leak, collapse of oil storage tank (UK & Gabon)
- > 1 Capping Stack – pre-mobilization due to subsea well incident (Brazil)

Others

- > 2 unknown sources (Dubai)
- > 1 Subsea toolkit – diamond pipe saw (Brazil)
- > Contingency stand-by – FSO De-commissioning (West Africa)
- > 1 Process failure – UKNS

Responses & Trends

- 💧 Mainly personnel resources – expertise
- 💧 Four incidents required significant assets to be mobilized
- 💧 Four required use of OSRL aircraft for surveillance
- 💧 Internal & external exercise programs have ramped up from COVID times
- 💧 High level of external training being conducted
- 💧 Several secondments of personnel to member companies

X-Press Pearl

Incident Overview

Mobilisation Date : 26th May 2021

Location : 10 km north-west of Colombo, Sri Lanka

Response Type : Protracted response to significant plastic 'Nurdle' release

Response Statistics

- ◆ Responder Days: >2180 days
- ◆ Shoreline Cleaned: >300km
- ◆ Waste Collected: > 1000 tonnes (excluding large burnt debris)



X-Press Pearl

OSRL Activities

Role Evolution: From Oil to Plastic Nurdles

- 💧 Shoreline Response Project Management
- 💧 Stakeholder Engagement
- 💧 Equipment & Logistical Coordination
- 💧 Shoreline Survey, Monitoring & Visualisation
- 💧 Nurdle clean-up guidance
- 💧 Waste Management
- 💧 Equipment design, fabrication and procurement



Thailand

Incident Background



Photo by Reuters 29 Jan 2022

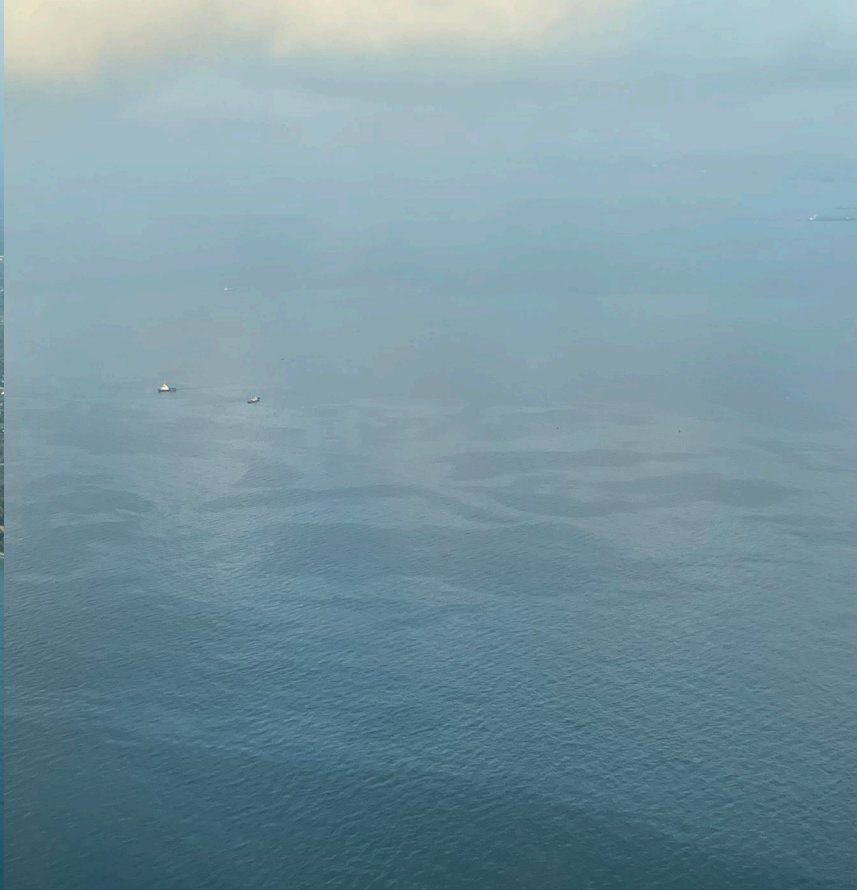
- 💧 **25 Jan 2022** : Est. 2,500 bbl Murban Crude released from SPM off coast of Rayong
- 💧 **26 Jan 2022**: OSRL was notified and mobilised
Spill made landfall on 29th
- 💧 **27–28 Jan 2022**: Thai Navy Initial Response
- 💧 **29 Jan 2022**: Oil impacts shoreline
- 💧 **Sensitivities at risk:**
 - > Ko Samet tourist island (Impacted site for Rayong spill 2013)
 - > Khao Laemya National Park

Thailand - Response

Response



- Aerial surveillance conducted navy helicopters, and UAV
- Vessel dispersant spraying
- Offshore containment and recovery
- Helicopter dispersant spray operations (via heli-bucket)



C130 Aerial Surveillance Photos

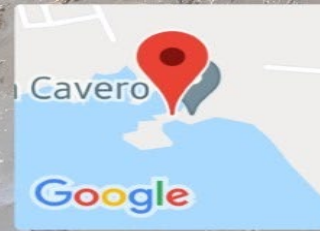
Lima, Peru: Marine Terminal (Refinery)

Incident Information

- When:** 15 January 2022 (Tonga volcano tsunami)
24 January 2022: OSRL notified
- Where:** Marine terminal serving refinery, Lima
- What:** Oil spill from pipeline fracture (PLEM) while crude tanker unloading at multi-buoy mooring.
- Quantity:** Approximately 10,000 bbls of Buzios crude oil released



Cavero Beach

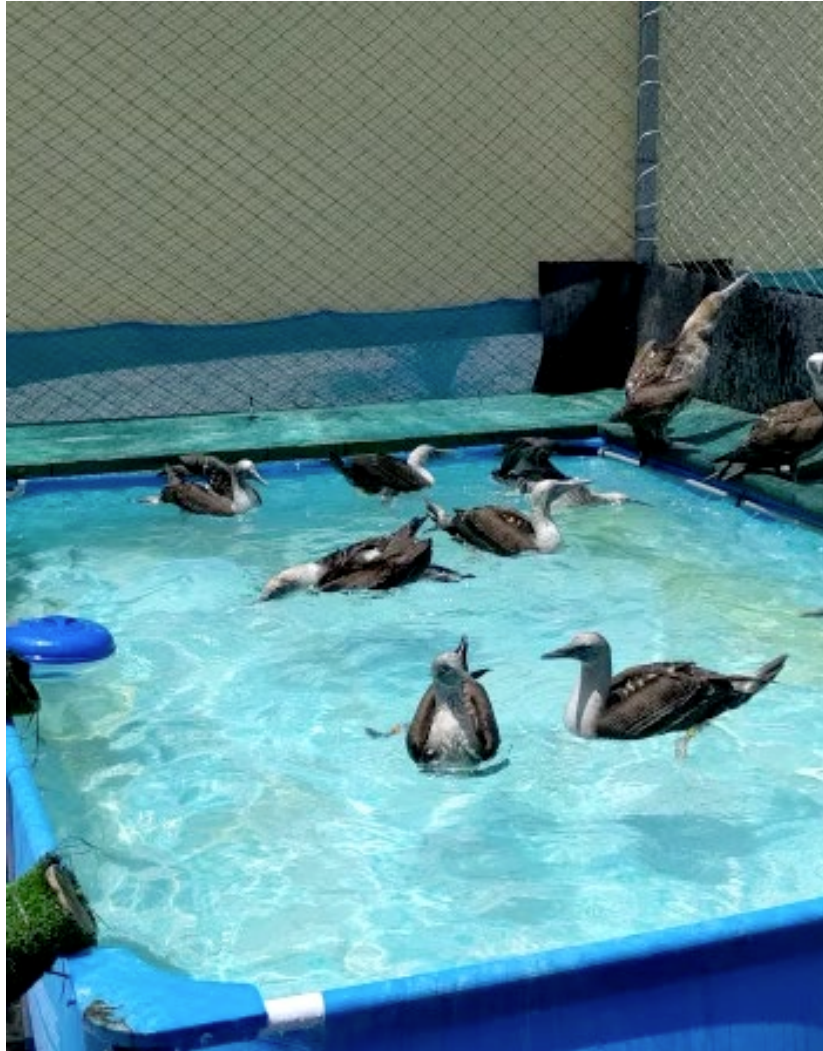


Ventanilla, Callao, Peru
Unnamed Road, Ventanilla 07071, Peru
Lat -11.845031°
Long -77.176169°
24/02/22 12:08 PM

Buried Oil



AIUKA – Wildlife Rehab Center



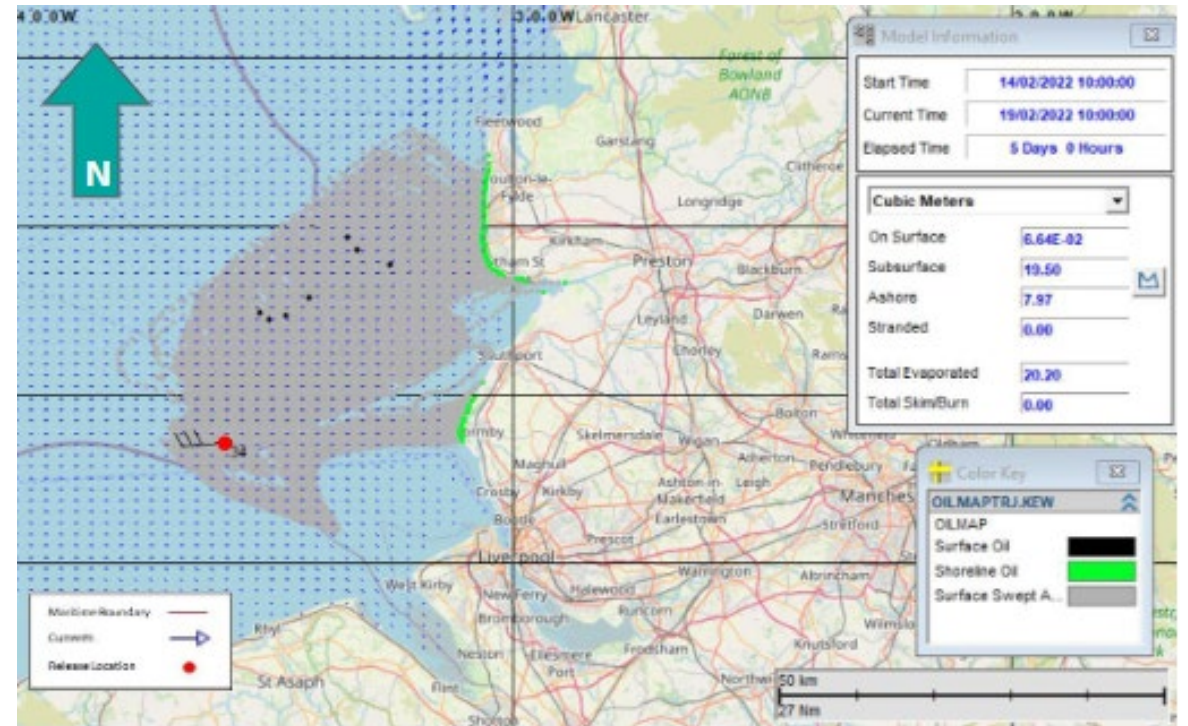
Liverpool Bay

Incident Overview

- Mobilisation Date :** 14th February 2022
- Location :** Douglas Field, Liverpool Bay UK (off the North Wales coast)
- Cause :** Pipeline leak (between Douglas and Conwy platforms) – est. 80m³ crude oil
- Response Type :** Incident Command Support, Surveillance, modelling, SCAT, Shoreline cleanup and Offshore containment and recovery

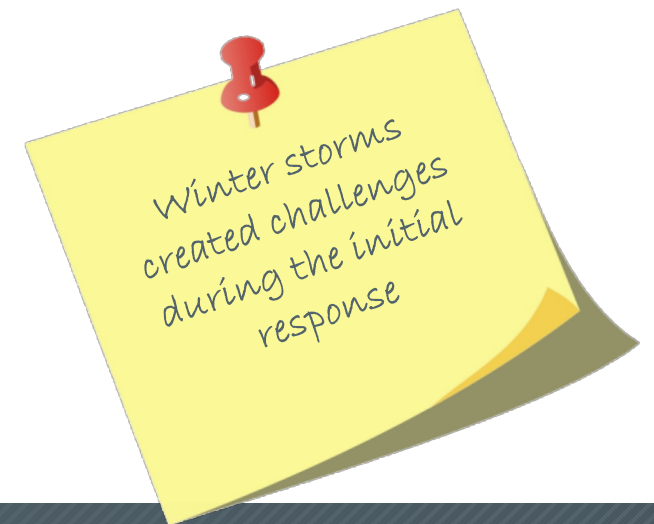
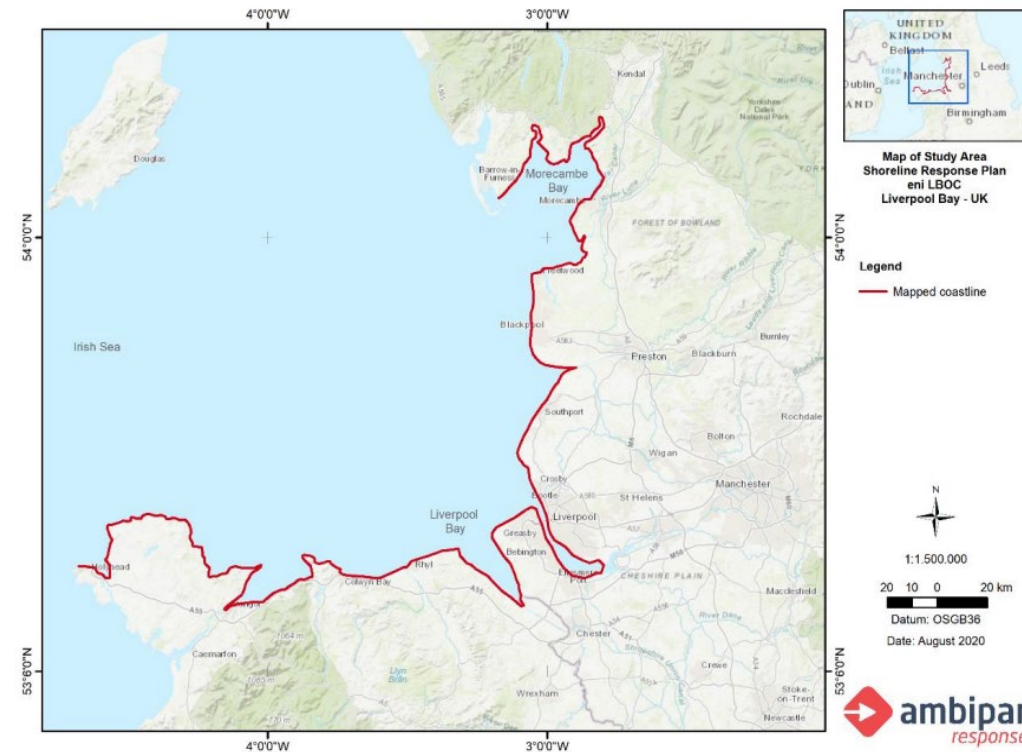
Response Statistics

- ◆ Approx 100 Responder Days Involvement
- ◆ Nearshore & Offshore Equipment
- ◆ UKCS aircraft



OSRL Activities

- Command
 - Technical support to the IMT on response strategies, promotion of good practice and efficient use of resources
- Shoreline
 - Conducted shoreline pre-oiling surveys
 - Established a baseline and validated existing shoreline response plans
 - Reported and monitored sites for tar balls/oiling using SCAT
 - Surveillance and Modelling
 - Weather permitting, conduct surveillance overflights
 - Satellite surveillance
 - Advice and modelling provided



Liverpool Bay

- Minimal shoreline impact
 - > Most areas survey showed no oiling
 - > Small number of Tar-balls
- Offshore standby support
 - > Vessels of opportunity (VOO) assessment and survey
 - > C&R package on standby



MV Tresta Star

Incident Overview

- Mobilisation Date** : 25th February 2022
- Location** : Eastern shoreline, La Reunion.
- Cause** : Vessel (tanker) suffered engine trouble and lost control during a Cyclone, resulting in a grounding – est. 15m³ diesel oil onboard
- Response Type** : Shoreline cleanup assessment surveys, response options and recommendations
- Response Statistics**
- 🔹 14 Responder days



MV Tresta Star

OSRL Activities

Shoreline

- Shoreline surveys close to the MV Tresta Star and of surrounding area
- Identify suitable response options if required in future or during salvage
- Report detailing findings of the survey and recommendations

Surveillance and Modelling

- Conduct overflights as required

Spill - Tresta Star - Situational Awareness

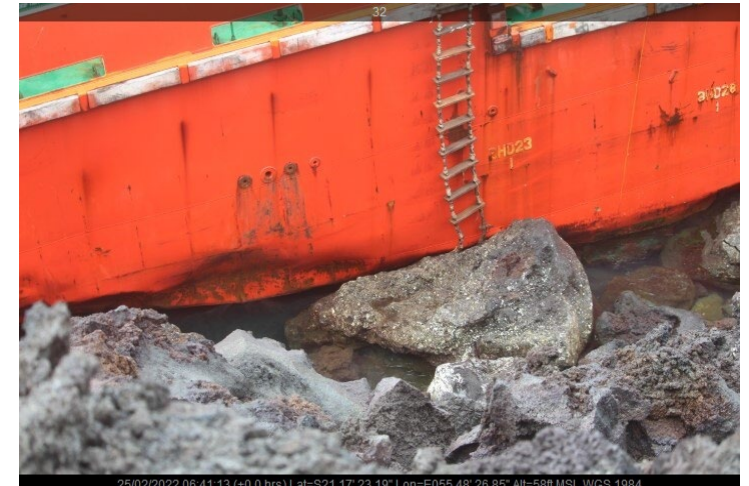
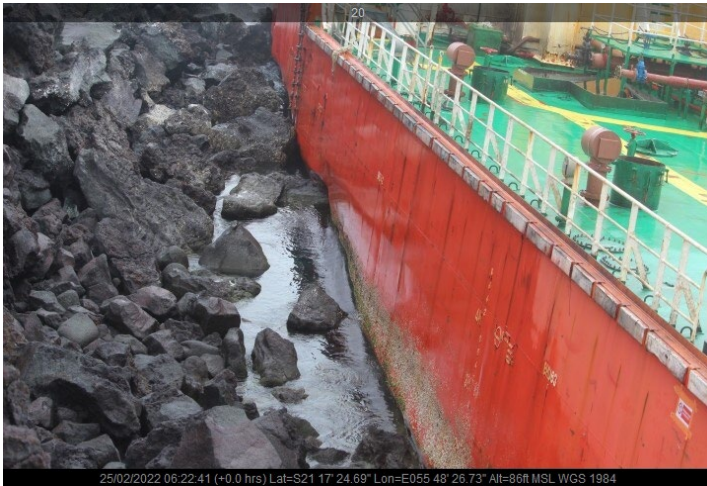
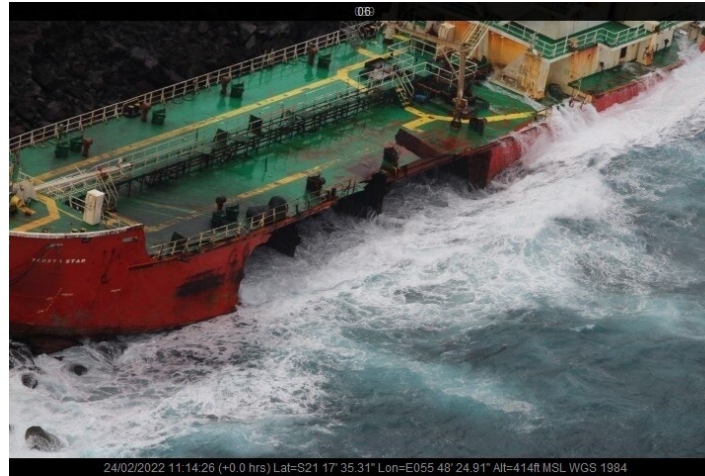


ESI

Shoreline classification

- 1A - Exposed Rocky Shore
- 1B - Exposed Solid Manmade structures
- 1C - Exposed rocky cliffs with boulder talus base
- 2A - Exposed Wave-cut platforms in bedrock, mud or clay
- 2B - Exposed scarps and steep slopes in clay
- 3A - Fine to medium-grained sand beaches
- 3B - Scarps and steep slopes in sand
- 3C - Tundra cliffs
- 4 - Coarse-grained sand beaches
- 5 - Mixed sand and gravel beach
- 6A - Gravel beaches
- 6B - Riprap
- 7 - Exposed tidal flats
- 8A - Sheltered scarps in bedrock, mud, or clay
- 8B - Sheltered, solid man-made structures
- 8C - Sheltered riprap
- 8D - Sheltered rocky rubble shores
- 8E - Peat shoreline

Early attempts to re-float vessel unsuccessful



Cap Lopez, Gabon

Incident Overview

Mobilisation Date : 28th April 2022

Location : Cap Lopez, Port Gentil, Gabon

Cause : Catastrophic failure of a crude storage tank releasing 300,000 bbls (50,000m³) of Rabi crude oil mainly into the tanks bunded area

Response Type : 6 responders mobilized to provide technical support, incident management and training of local personnel

Response Statistics

🔹 35 Responder days



Crude contained mainly within the bunded area

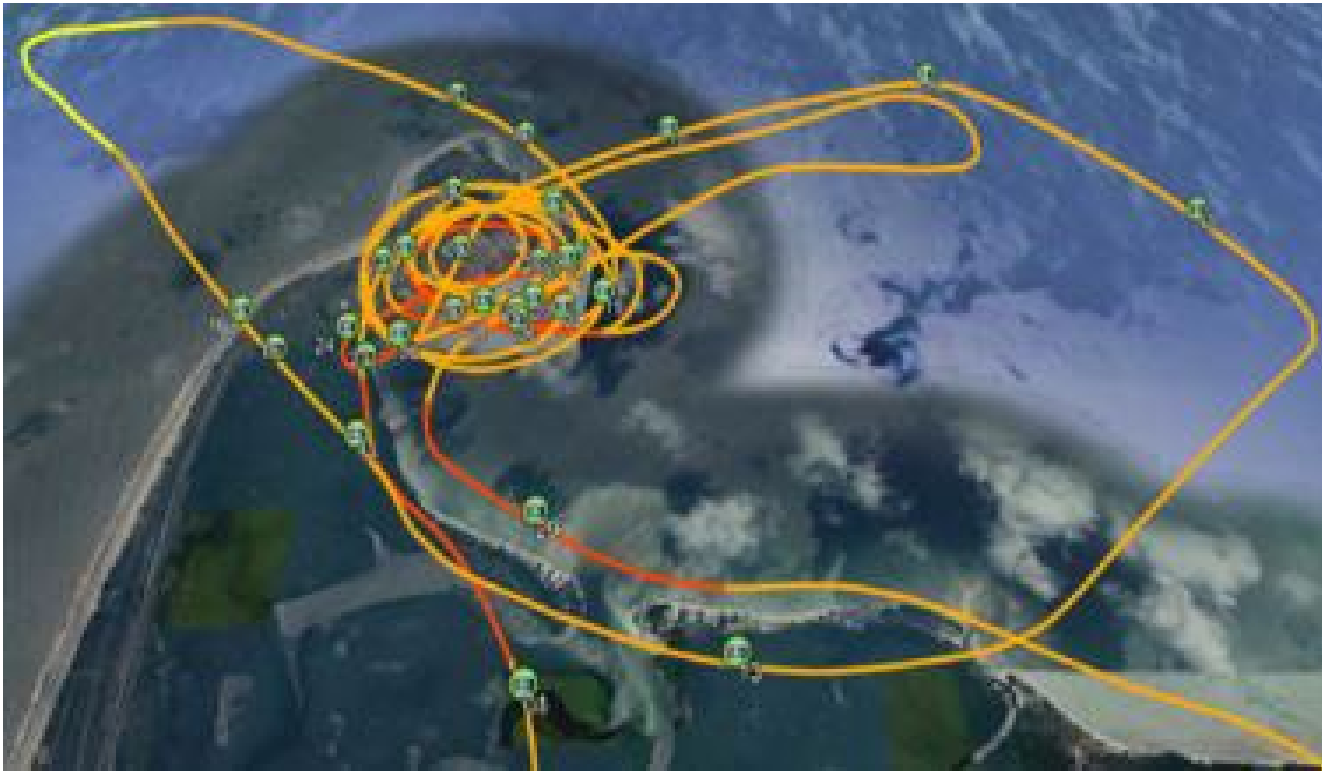


High levels of VOC's prevented initial response.

Once the VOC levels were safe pumping operations commenced using local resources to transfer the crude oil from bund to other tanks.

VAC trucks used to recover oil spilled outside bund.

Overflights conducted and boom deployed to contain any oil entering the sea.



- ◆ Booms deployed around the jetty area to prevent further migration of any residual oil
- ◆ Light sheen observed within the harbor area during the overflight

Anasuria FPSO

Incident Overview

Mobilisation Date : 13th April 2022

Location : Guillemot A field ~ 150km East Aberdeen

Cause : The release is believed to have come from over pumping of the FPSO slop tank late on the 12th of April

Response Type : Aerial Surveillance flights by UKCS and Satellite Imagery through OSRL contractor MDA

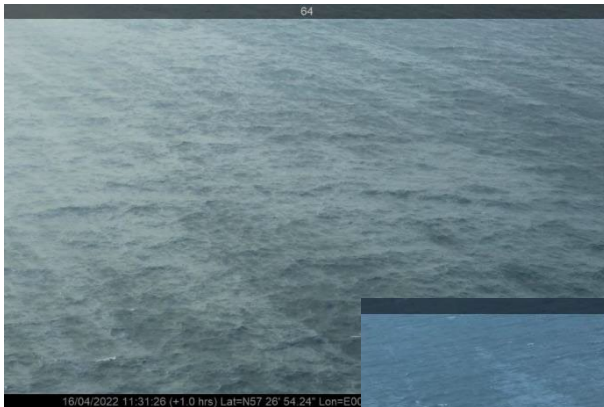
Response Statistics

🔹 10 Responder days



Anasuria FPSO

- Aerial Surveillance showed small trace of hydrocarbons which was monitored by several overflights and satellite imagery. OSRL also provided modelling support.



Campos Basin Brazil

Incident Overview

When : Pre-mobilization notice received on 15th June 2022

Cause : Low confidence of BOP in a deep-water exploration well

Incident owner proactively notified OSRL and capping stack was configured and prepared for mobilization.

Deployment plans prepared and reviewed.

Vessels identified etc.

No release of hydrocarbons.

Cap was moved to quay side to ensure it was ready for immediate deployment.



Latest Challenges on Oil Spill Response

Opportunities

REGULATORY Framework	READINESS	NON-TRADITIONAL RESPONSE	PERSONNEL
OPRC - 90	Assessments	Alternative Fuels	COVID
Nat 'l Updates	Collaborations	Plastics	Gaps
Dispersants	Wildlife	Chemicals	Training

Latest Challenges on Oil Spill Response

Opportunities – Regulatory Framework

OPRC Convention (& National Laws)

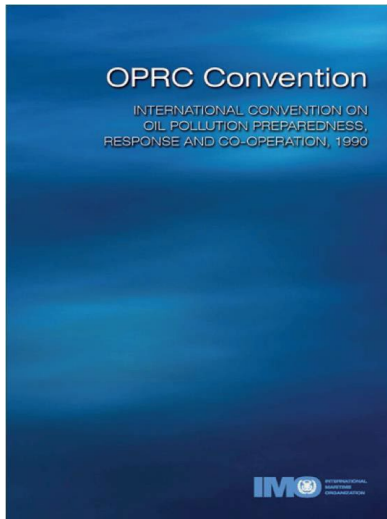
Article 3 Emergency plans

Article 4 Reporting procedures

Article 5 Actions on receiving pollution report

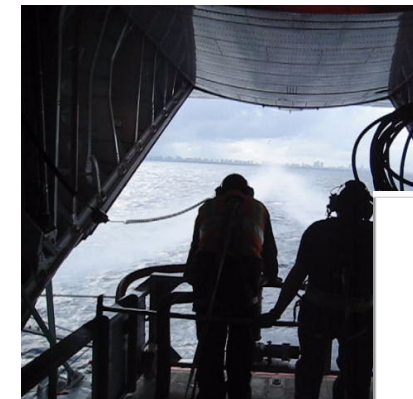
Article 6 National and regional systems

Article 7 International co-operation



Contingency planning for oil spills on water

Good practice guidelines for the development
of an effective spill response capability



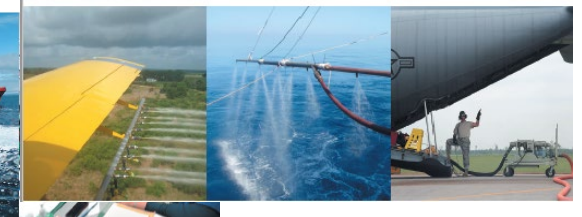
Oil spill exercises

Good practice guidelines for the development
of an effective exercise programme



Dispersants: surface application

Good practice guidelines for incident management
and emergency response personnel



Wider Caribbean Region

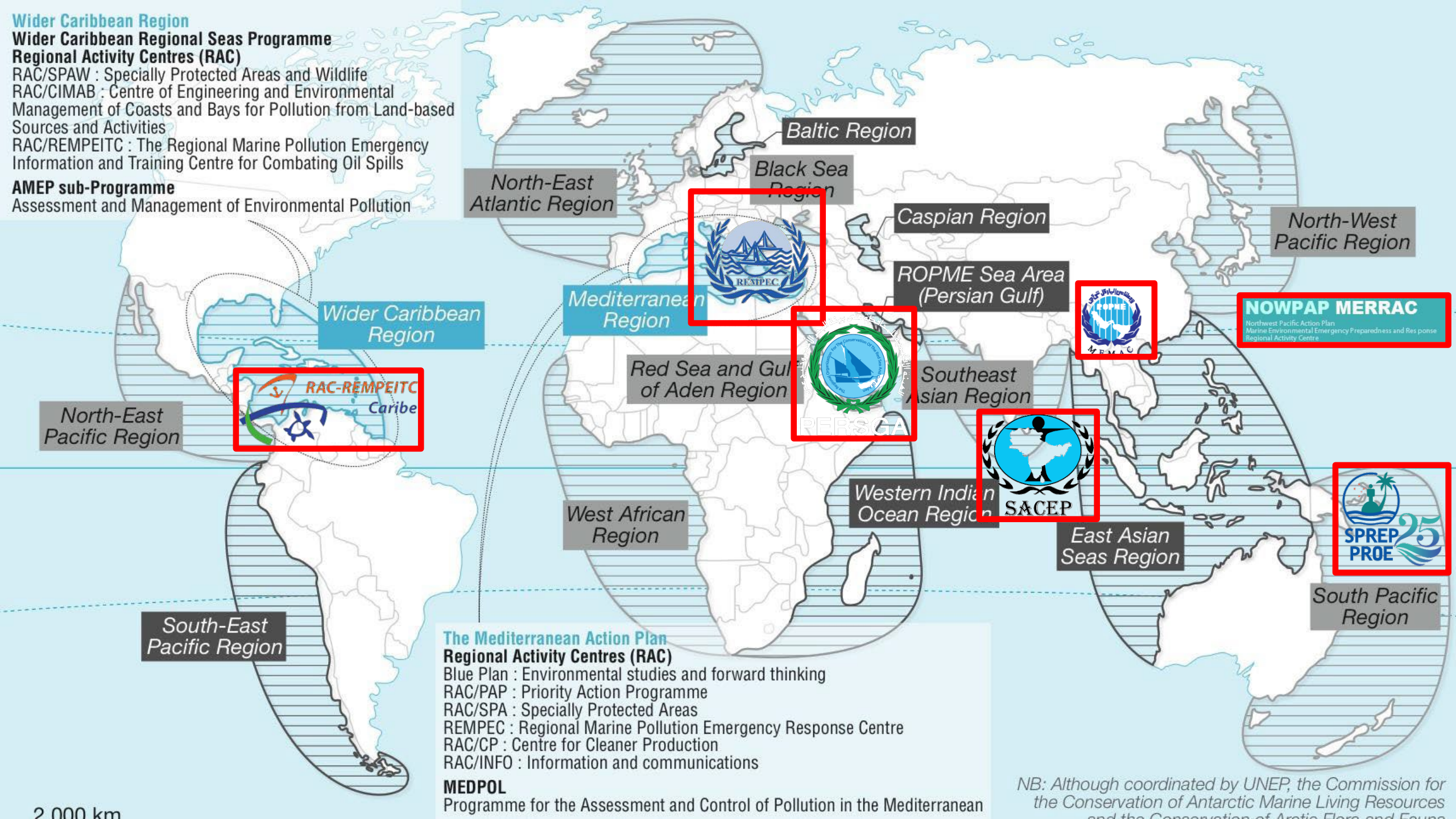
Wider Caribbean Regional Seas Programme

Regional Activity Centres (RAC)

- RAC/SPAW : Specially Protected Areas and Wildlife
- RAC/CIMAB : Centre of Engineering and Environmental Management of Coasts and Bays for Pollution from Land-based Sources and Activities
- RAC/REMPEITC : The Regional Marine Pollution Emergency Information and Training Centre for Combating Oil Spills

AMEP sub-Programme

Assessment and Management of Environmental Pollution



North-East Atlantic Region

Baltic Region

Black Sea Region

Caspian Region

North-West Pacific Region

Wider Caribbean Region

Mediterranean Region

ROPME Sea Area (Persian Gulf)

NOWPAP MERRAC
Northwest Pacific Action Plan
Marine Environmental Emergency Preparedness and Response
Regional Activity Centre

North-East Pacific Region

RAC-REMPEITC Caribe

Red Sea and Gulf of Aden Region

REMPEEC
Regional Marine Pollution Emergency Response Centre for the Mediterranean Region

Southeast Asian Region

ROPME
Regional Organization for the Protection of the Marine Environment

SPREP PROE
South Pacific Regional Environment Programme

South-East Pacific Region

West African Region

Western Indian Ocean Region

SACEP
South-East Asian Seas Regional Centre for Pollution Prevention and Control

East Asian Seas Region

South Pacific Region

The Mediterranean Action Plan Regional Activity Centres (RAC)

- Blue Plan : Environmental studies and forward thinking
- RAC/PAP : Priority Action Programme
- RAC/SPA : Specially Protected Areas
- REMPEC : Regional Marine Pollution Emergency Response Centre
- RAC/CP : Centre for Cleaner Production
- RAC/INFO : Information and communications

MEDPOL

Programme for the Assessment and Control of Pollution in the Mediterranean

NB: Although coordinated by UNEP, the Commission for the Conservation of Antarctic Marine Living Resources and the Commission of Arctic Flora and Fauna

2 000 km

Latest Challenges on Oil Spill Response

Assessments

Fewer Operational Spill Incidents
Is team is ready for protracted response?

Collaborations

Collect & Consolidate Exercise Calendars
Leverage Group Strength
Use repeatable platform: i.e.: Arpel's RETOS Tool
Share (AI) Exercise Results

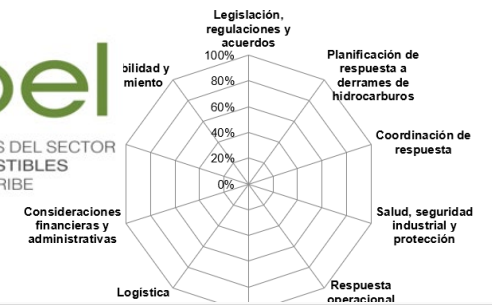
Wildlife – P-E-A-R - L

Greater Public Awareness
Greater Government Expectations

Opportunities – Non-Traditional Response



Resultados no ponderados del Nivel A



Wildlife response preparedness

Good practice guidelines for incident management and emergency response personnel



Latest Challenges on Oil Spill Response

Opportunities - Readiness

Alternative Fuels

Biofuels, Low Sulphur, Ultra Low Sulphur
Ammonia, LNG
Scrubbers waste Streams

Plastics

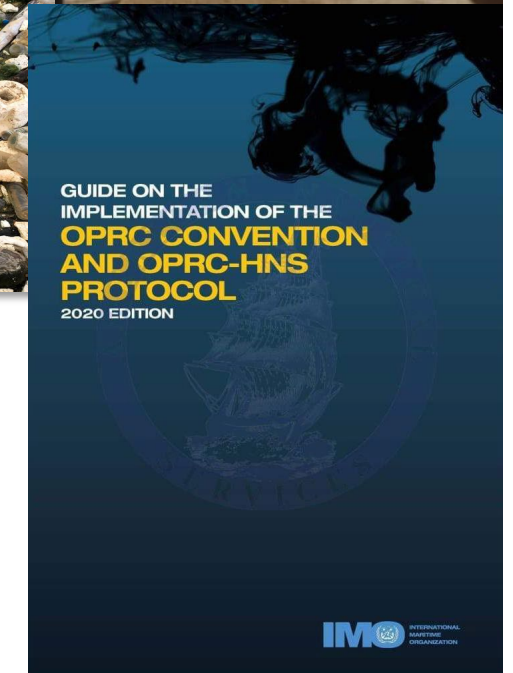
Protracted – weeks/months
Transferability of tools/techniques
NEBA // How Clean is Clean

Chemicals

Leveraging OSR knowhow
Command & Control
All-hazards efficiencies



Segregation Challenges



Latest Challenges on Oil Spill Response

Opportunities – Personnel

💧 Post – COVID

- 💧 Are teams caught up?

 - Is equipment fit for service?

💧 Industry Gaps

- Loss of corporate knowledge

- Challenging hiring environment

- Outsourcing?

💧 Latest Training

- Use of Artificial Intelligence

- Soft Skills – The Next Frontier

 - Crisis Management- Performing under Pressure

Stress and recovery balance



The score reveals whether you have enough recovery in your day in relation to the amount of stress.

Health effects of physical activity

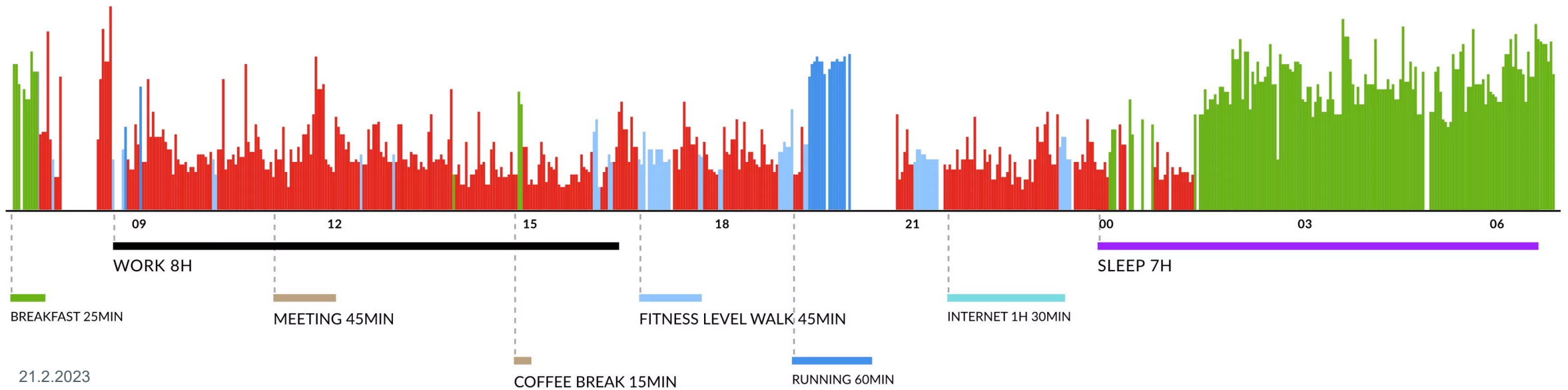


The score reveals whether you had enough physical activity this day to provide good health benefits.

Restorative effect of sleep



The score reveals how well you actually recover during the sleep period.



● Stress ● Recovery ● Exercise

Questions? // Staying in Touch



Courses

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