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Post spill monitoring and assessment: preparedness is key

Dr Sue Ware

Together we are working for
a sustainable blue future

Centre for Environment
Fisheries & Aquaculture
Science

Cefas

Risks: What Do We Need to Prepare For?

Whilst the **number of shipping related pollution incidents has decreased in recent decades**, there is still the potential for occasional large, high-profile incidents.

Risk assessment:

- Hazards?
- Probabilities?
- Consequences?

Hazards: Recent Examples

- Oil (VLSFO): Mauritius
- Plastic Pellets: Sri Lanka

Preparedness: Key Steps

Once risk has been established:

- Strategy
- Operational planning
- Equipment
- Information repository

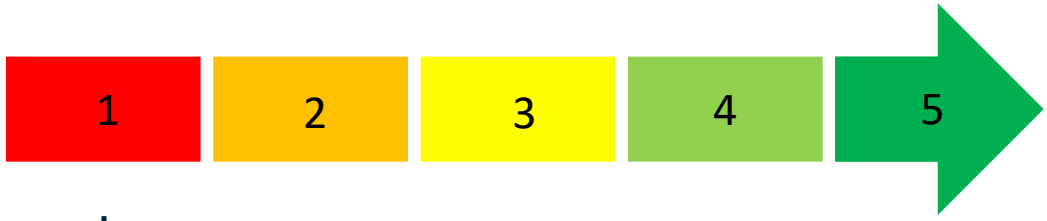
Preparedness Matrix

Principle

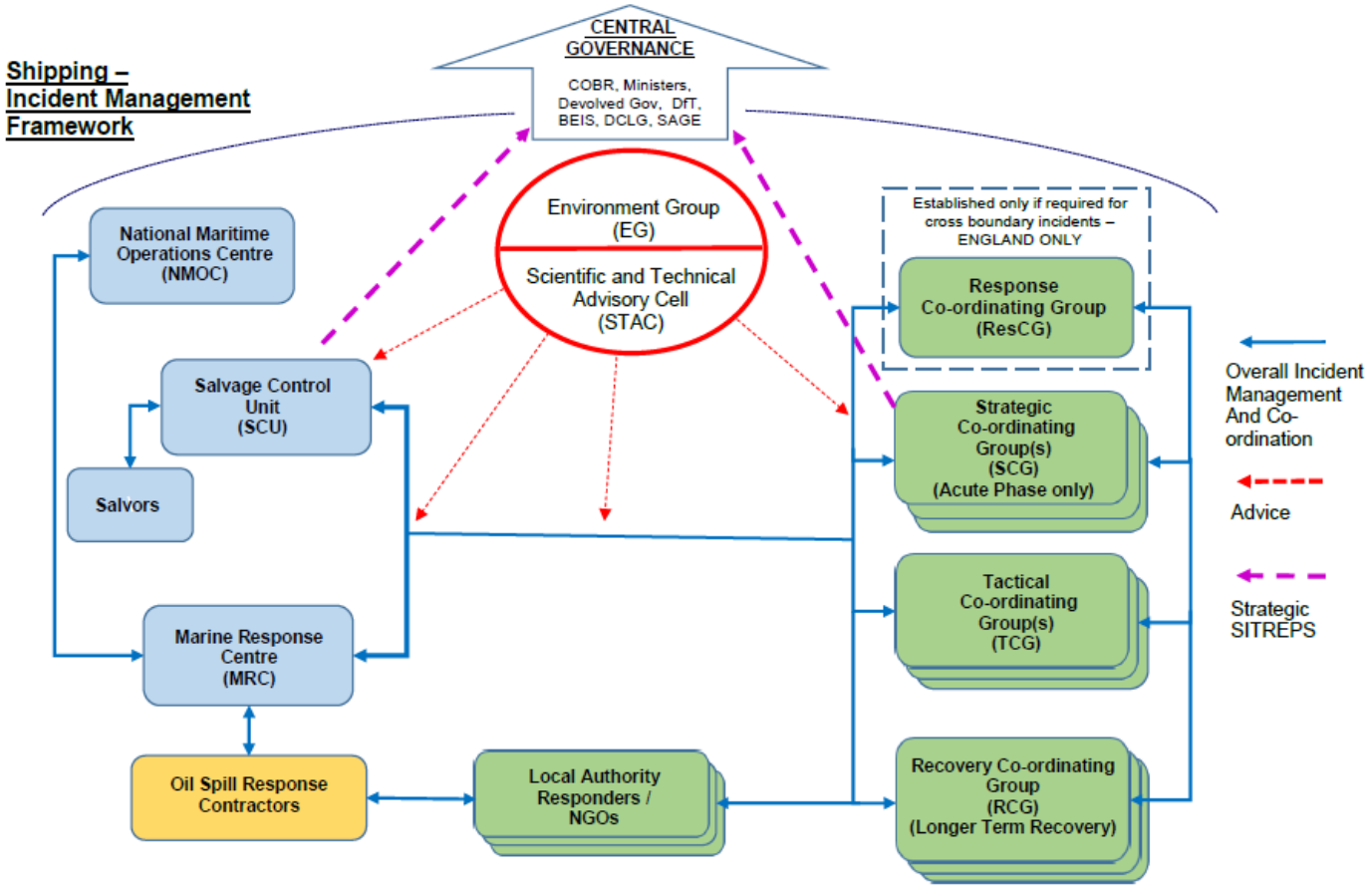
1. Scientific Guidance
2. Skills & Knowledge
3. Equipment
4. Funding
5. Responsibility & Management
6. Integration & Coordination
7. Support & Buy In
8. Practise

Preparedness Level

(Levels 1 – 5)

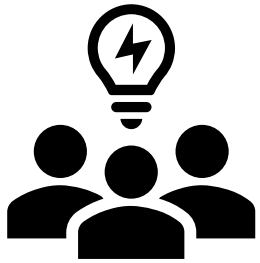


Strategy: Roles & Responsibilities

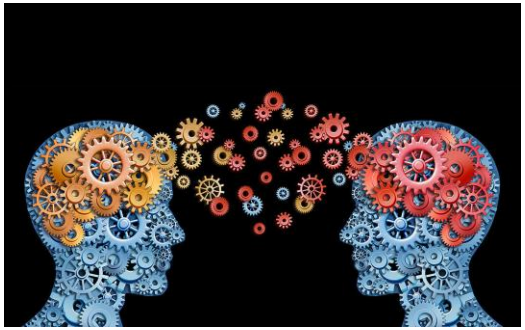


Preparedness: in practise

- Capability/Capacity assessment



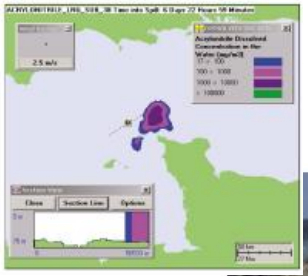
- ID knowledge gaps, prioritise knowledge sharing



- Operational planning & exercising

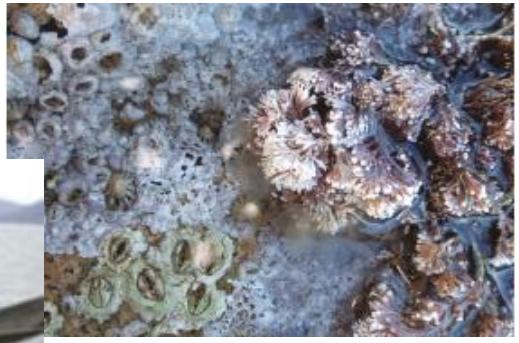
‘Best Practise’: Initial Response

- Mitigation
- Clean up
- Wildlife Response



‘Best Practise’: Monitoring

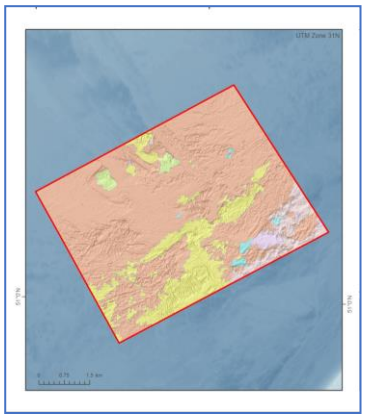
- Pre-incident baseline information
- Sample collection
- Sample analysis
- Indicators & end points



Repository of Information

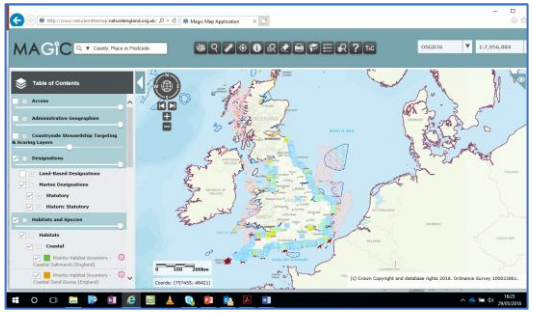
Spatial/temporal distribution of important resources:

- Commercial fisheries & aquaculture facilities
- Conservation habitats & species
- Recreation & tourism amenities



Vulnerable Resources

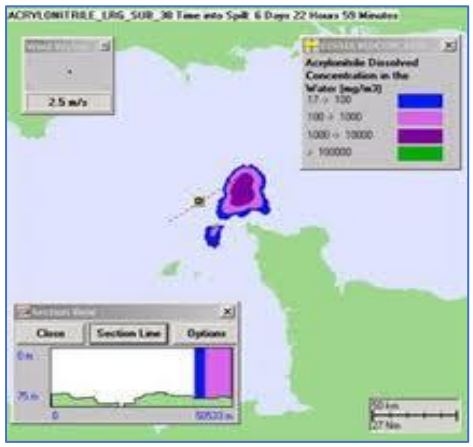
- **Bathing waters** (***source:*** *https://environment.data.gov.uk/bwq/profiles/*);
- **Commercial fish and shellfish resources** (***source:*** *Local Inshore Fisheries and Conservation Authority (IFCA), Food Standards Agency (FSA);*
- **Conservation features (habitats & species)** (***source:*** *Statutory Nature Conservation Bodies (SNCBs) e.g., Natural England (http://www.natureonthemap.naturalengland.org.uk/magicmap.aspx), the Joint Nature Conservation Committee (JNCC))*.

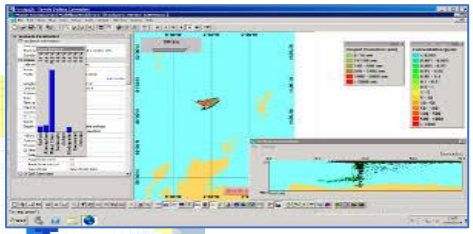


Repository of Information

Fate & transport models:

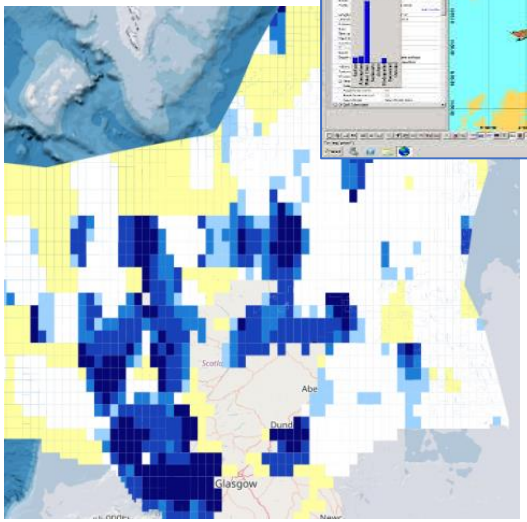
- Access to input information





Sensitivity & vulnerability indices:

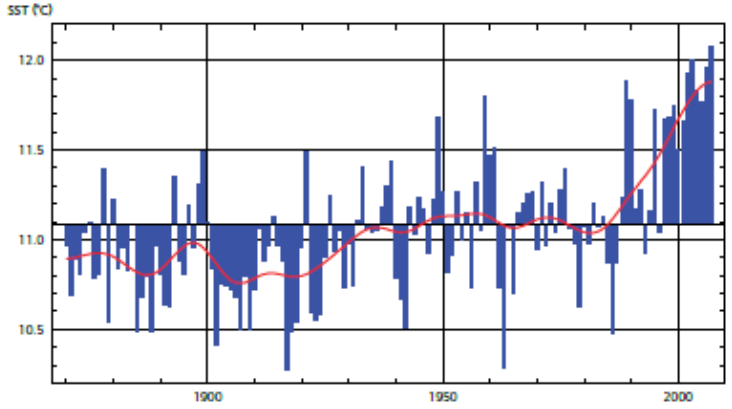
- e.g., Seabird Oil Sensitivity Index (SOSI)



Data for Modelling

Prevailing environmental conditions:

- **Sea temperature/salinity** (***sources:*** *drifting/moored buoys, vessels e.g., ferrybox, coastal stations, earth observation (EO) data*);
- **Sea state/waves/wind** (***sources:*** *satellite altimetry, moored buoys (e.g., wavenet*);
- **Suspended particulate matter (SPM)** (***sources****: secchi disk data, EO data*);
- **Currents/tides** (***sources:*** *in situ observations e.g., ADCP, predictive models*).



Repository of Information

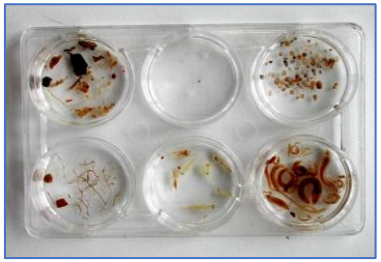
Standard Operating Procedures:

- Sample collection;
- Sample analysis;
- Reporting

'Collect once, use many times'



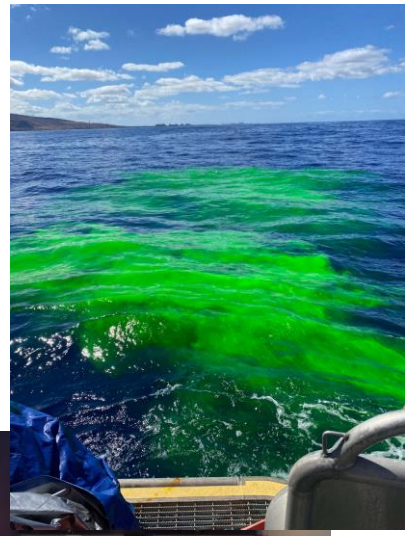




‘Practise Makes Perfect’ (Almost…)

Exercising & lessons learned:

- Practise without the pressure;
- Identify gaps;
- Prioritise capability & capacity building.



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‘Thankyou for Listening’

suzanne.ware@cefas.co.uk