



**8<sup>th</sup> SUT/  
MASTS  
work  
shop**

# **Salvage, Decommissioning & Wreck Removal:**

**Influence, Educate and  
Unlock Opportunities:**

# **Informing Global Sustainability Challenges**

8th October (13:30) to 9th October (12:45), 2020



# SUT/MASTS work shops



Welcome to our 8<sup>th</sup> annual workshop, which have over the years built up a wide, transdisciplinary following.

Year on year, we have seen a maturation of discussion, that has been built on incremental build up of respect and trust, in what were previously, largely siloed communities.

It is the hallmark of a Learned Society that people who know each other can exchange knowledge and experience in an apolitical, non-combative environment. Bringing the operationally focused membership of the SUT with the extensive, outward-looking researchers that make up MASTS, and opening this up to others, makes this a particularly enlightening forum. **Thank you for joining us.**

INSTALLATIONS / SUBSEA

OIL. GAS. RENEWABLES

SHIPS

WRECK REMOVAL

ARTIFICIAL REEFS

+/- ECOSYSTEM IMPACT

INNOVATION

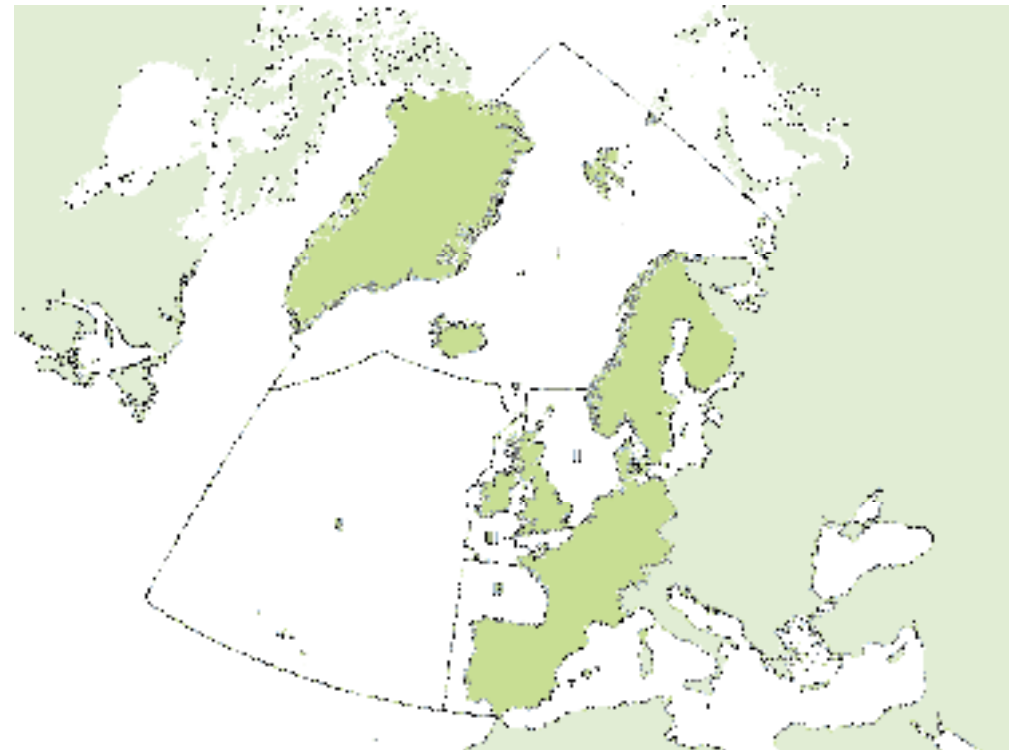
TECHNOLOGY

SOCIETY

ENGAGEMENT

# 2020 workshop

This year we are bringing together a range of international expertise across the 'Triple Helix' of industry, science and government, to build a shared understanding of the ecosystem impact of anthropogenic activity, particularly in the Arctic and Greater North Sea OSPAR area. Focus will be on shipping (including offshore vessels), oil and gas, and wind and wave energy, as actors within the same space. Engineers, scientists, salvors, operators, regulators, NGOs, insurers, lawyers, and other users of the sea will consider sustainability taking a holistic lifetime approach.



Region I: Arctic Waters  
Region II: Greater North Sea  
Region III: Celtic Seas

Region IV: Bay of Biscay  
& Iberian Coast  
Region V: Wider Atlantic

# Review/Update MMOMS



When the International Salvage & Decommissioning Committee was formed, twelve years ago. It produced a Discussion Document, ***Developing a Consistent, Cross-Sector Approach for Assessing the Impact of Man-Made Objects, and Materials and Substances (MMOMS) on the Marine Ecosystem***, with a focus on **Legacy Issues**.

It is in the process of updating this document with the insight gained over the past decade. The new focus being put on the 'Blue Economy' makes this very timely.



Examples of Man-Made Structures used in the original document

# New Experience / Contemporary Research / Societal Opinion



In the intervening period, new experience has been gained and contemporary research undertaken. Also, societal opinion changed, especially around issues of sustainability and behavioural change.

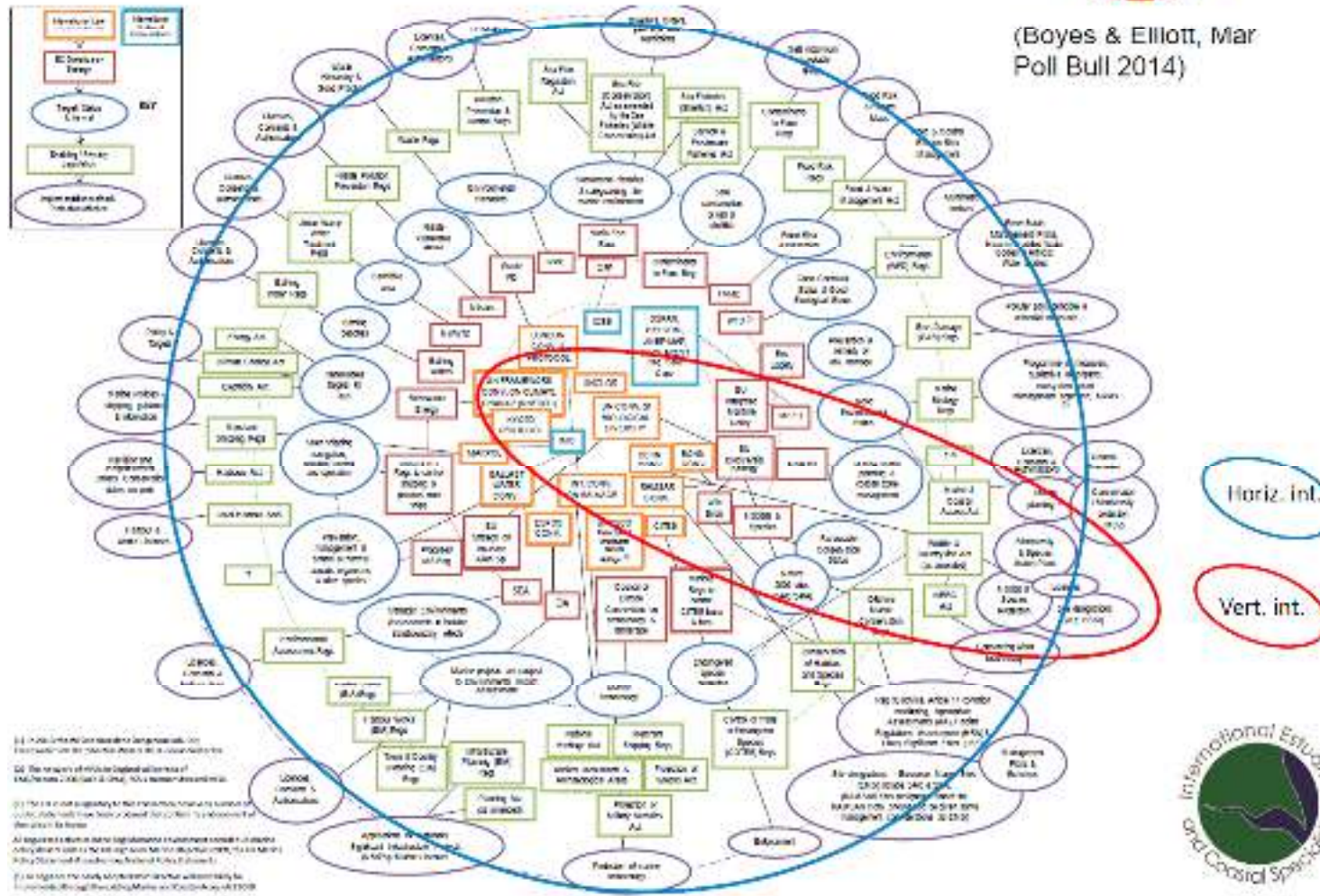


# 'On the Ground' Reality

How individuals and organisations, alike, are to be compliant – let alone innovate to 'do the right thing' - is a challenge, especially if existing requirements are the starting point. This is why we are delighted that the OSPAR Secretariat is joining us, to share its vision. How do we tackle this kind of 'horrendogram' together?



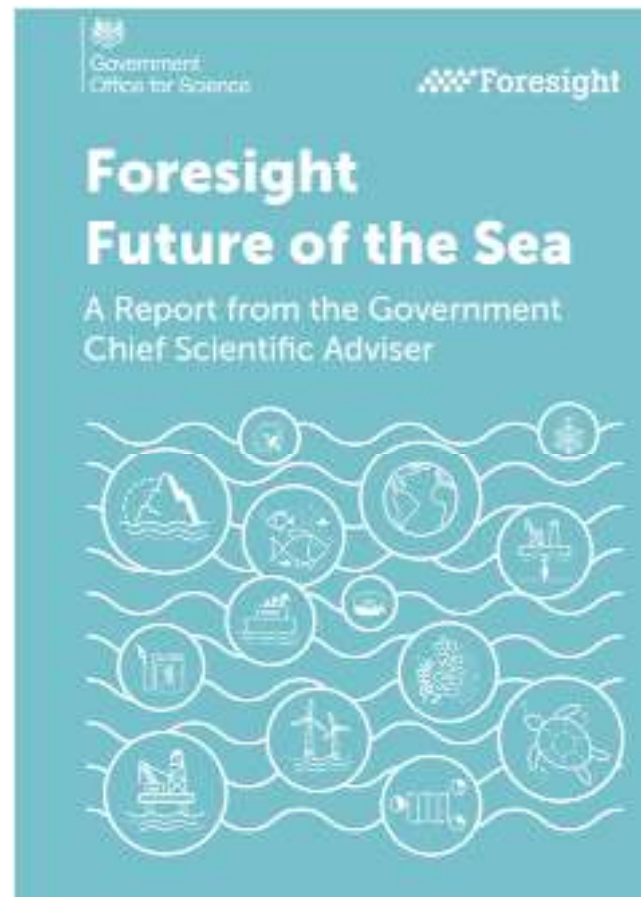
(Boyes & Elliott, Mar Poll Bull 2014)



# Work Shop: Main Theme: Consistent Decision Making



This builds on the recommendations of the **UK Foresight Future of the Sea Report (2018)**, the specific issue of fragmentation across government and regulatory bodies will be addressed: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/706956/foresight-future-of-the-sea-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/706956/foresight-future-of-the-sea-report.pdf)



**Recommendation 1**  
The UK should develop a more strategic position, with clear priorities, with regards to its marine interests. This would underpin all the other recommendations made in this report.

# Focus 1: Climate Change and Sustainability Challenges



Climate change will have an impact on the natural environment, potentially increasing risk to all sectors, including decom. and wreck removal. How do we quantify and mitigate these impacts and risks, and how do we understand our contribution to climate change? The latest academic knowledge, research and sector experience will evaluate these pressing matters.



It is not just mounting cost and the potential for accidents ...with respect to negative ecosystem impact and wreck removal - do we need to review scuttling as an option?



# Focus 1: Climate Change and Sustainability Challenges



Of particular importance to OSPAR areas I and II is the potential opening of the NE Passage, due to increase in Global Mean Surface Temperature (GMST).

Where do satellites and the acquisition of crucial geo-spatial data fit into the equation? Should Scotland be building new marine research vessels? We need to ask ourselves these and other pertinent questions, free of dogma and self interest.



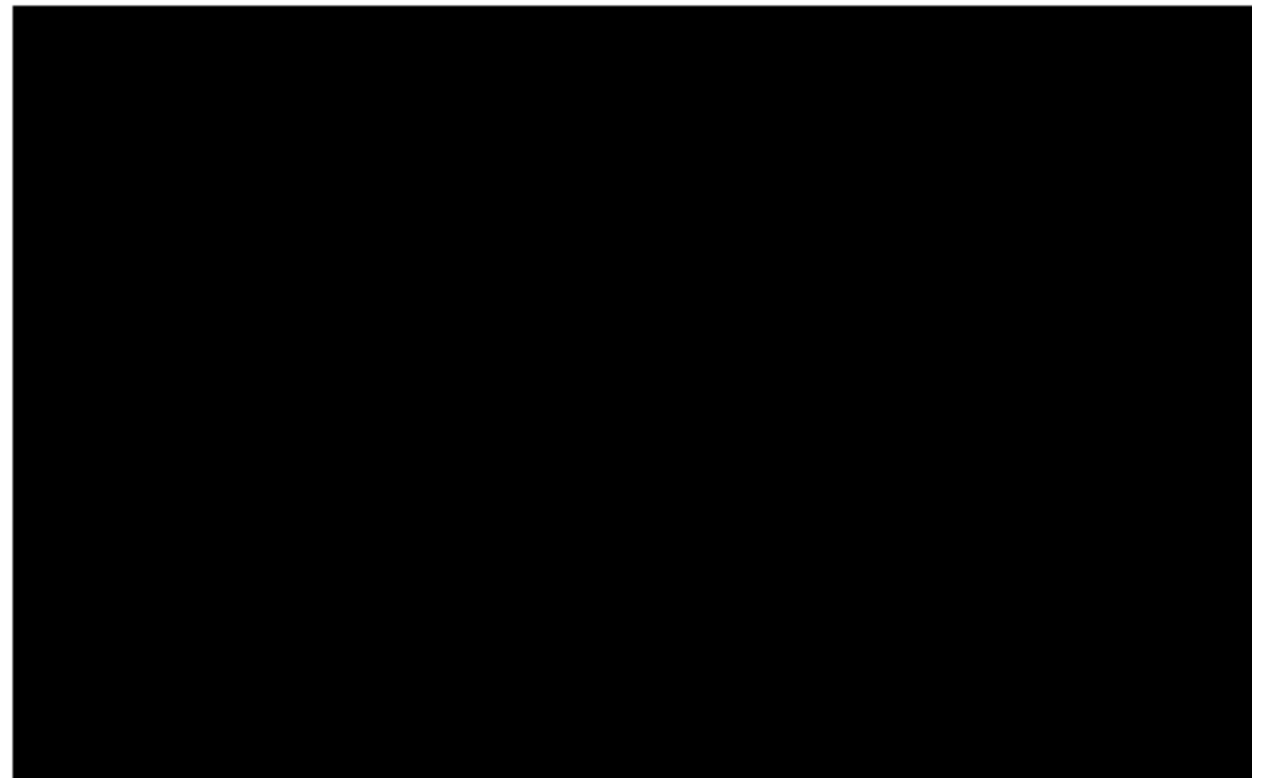
NEP graphic by Collin Knopp-Schwyn and Turkish Flame, CC BY 4.0,  
<https://commons.wikimedia.org/w/index.php?curid=7865628>

# Focus 2: Simulation, Visualisation & Geo-Spatial Data



This simulation quantifies the whole systems' difference of using High Modulus PolyEthylene rope for deployment and recovery as an alternative to steel wire rope.

Plug-ins linked to global position and MetOcean data enable reference data to be hypothesised for fuel consumption of library vessels, using set assumptions. This methodology is useful where real data is lacking.

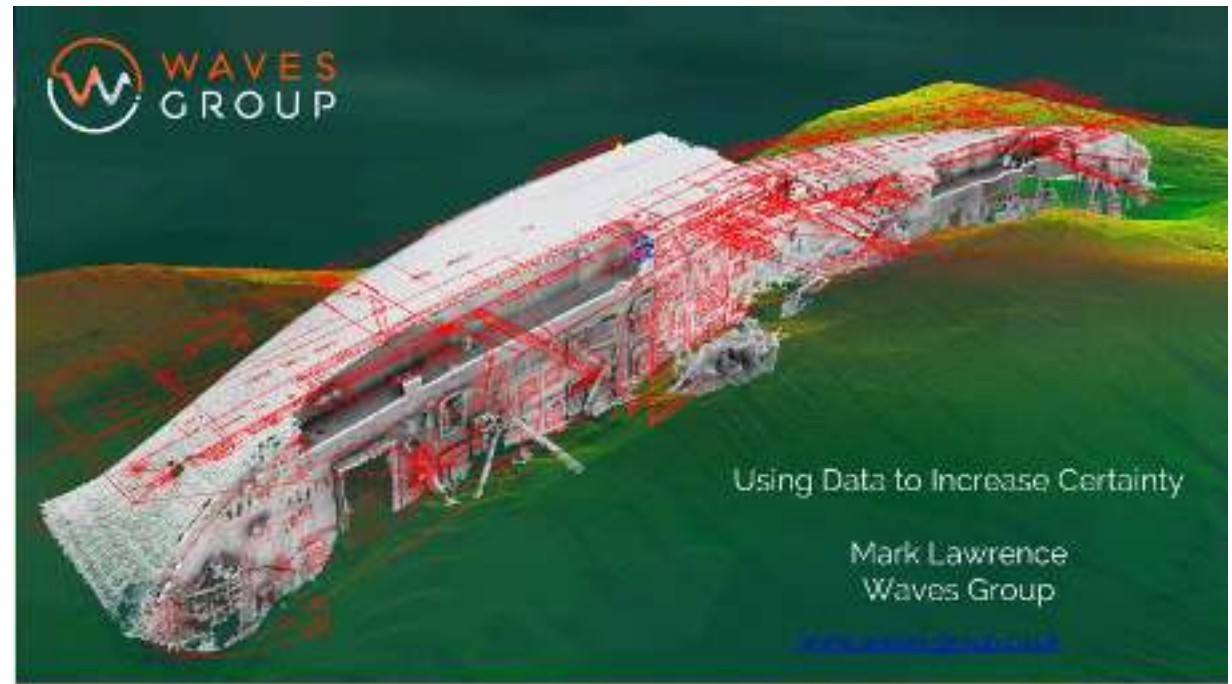


# Focus 2: Simulation, Visualisation & Geo-Spatial Data



## Implementing new Technologies and Methodologies:

Reliable data that is contextually nested within time and space is essential for good decision making. A demonstration of the advances in the remote acquisition of centrimetrically accurate, geo-located data will be shown live, with audience participation to demonstrate, the power of imported digital twins and simulation in determining optimal 'Solutions Choice'.



# Focus 3: Impact of Explosives



A new impact assessment model will be unveiled, and the pros and cons of cutting options discussed, with particular focus on Unexploded Ordnance (UXOs) and ecosystem impact.

This discussion ties back into vessel use of time and CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>, heat and underwater noise output.



# Appendix: Input to updated Discussion Document



The original MOMMS document is being updated and retitled:

**AMMOSS Anthropogenic Matter, Material, Objects, Structures and Substances: +/- Impact on the Marine Ecosystem.**

It is being compiled taking a holistic lifeTIME approach, and forms the first in a series of three, industry agnostic discussion documents:

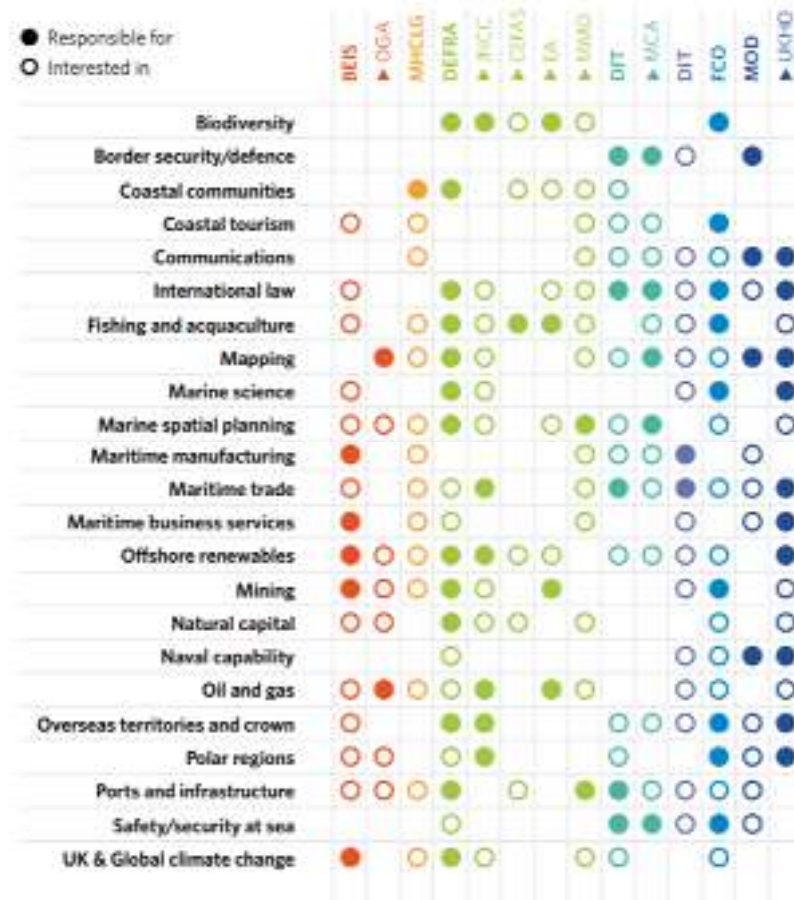
- Legacy Issues
- End of Life Fate in Design
- Sustainable Delivery of Function in Service

Natural Capital is a foundation with taxonomic classification being used to consider technologies that may compete for the occupation of same spatial area. This approach is used specifically to act as a bridge between biology, engineering, innovation and certification.

# Addressing Regulatory Fragmentation



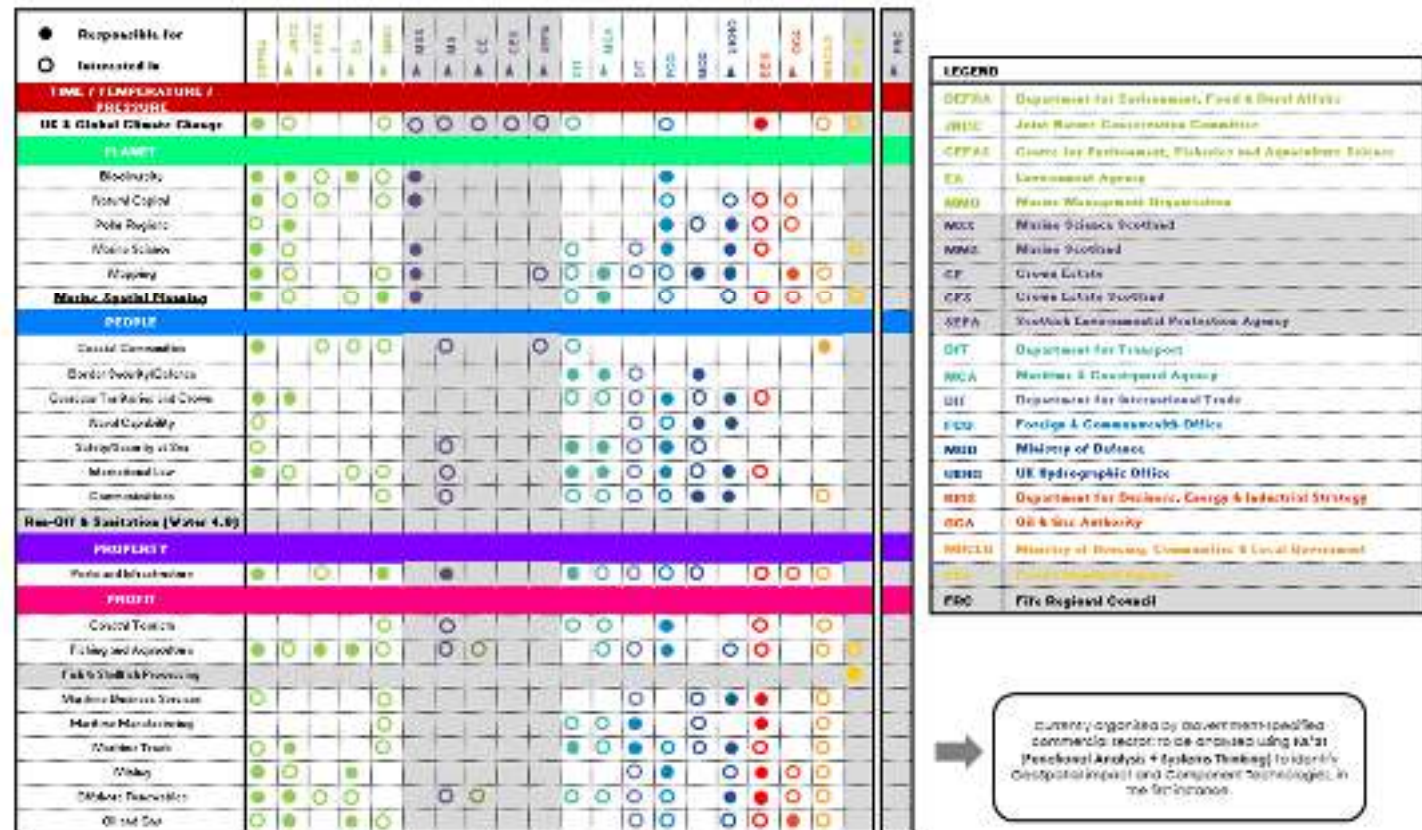
FIGURE 37 (Page 107)  
 Departments' responsibilities and interests in different marine issues (self-identified). As well as the departments listed, others such as HMRC and DfID have some responsibility for the issues described in this report. A significant proportion of marine policy responsibility is devolved, so the full picture is even more complex.



# ...through improved Analysis



The DEFRA framework is in alphabetical order, with BEIS as a government department being put in 'poll position'. In this view, the 'scatter pattern' is altered significantly by using a layer of analysis; putting DEFRA first; and adding Scotland's devolved administration. This will be taken down to local level, shortly by adding regional authorities, such as Fife.



# Keeping up with the GeoSpatial Context: such as Conventions with Neighbours



Currently, there are different limitations and acceptance criteria for industries operating in same locale. OSPAR's role/responsibility in remedying this will be explored.

Downloaded from the OSPAR website, its extant Decisions are shown. Recommendations are additional to this. What is very noticeable to those who remember the original OSPAR convention, is how many of the Paris ('PAR' land/river focused) conventions have been rescinded.

YEAR	OSPAR NUMBER	OSPAR DECISION (blue highlight indicates 'set aside')	RESERVATIONS / NON-ACCEPTANCE
1990	30	PARCOM Decision 90/8 on Reducing Atmospheric Emissions from Existing Chlor-Alkali Plants	
1995	58	PARCOM Decision 95/1 on the Phasing Out of Short-Chain Chlorinated Paraffins	UK
1998	69	OSPAR Decision 98/1 Concerning the Status of Decisions and Recommendations and Other Agreements Adopted under the former Oslo Convention and Paris Convention within the framework of the OSPAR Convention	
1998	70	OSPAR Decision 98/2 on Dumping of Radioactive Waste	
1998	71	OSPAR Decision 98/3 on the Disposal of Dismantled Offshore Installations	
2000	72	OSPAR Decision 2000/1 on Substantial Reductions and Elimination of Discharges, Emissions and Losses of Radioactive Substances, with Special Emphasis on Nuclear Reprocessing	
2000	78	OSPAR Decision 2000/2 on a Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals, Amended by Decision 2005/1	
2000	79	OSPAR Decision 2000/3 on the Use of Organic-phase Drilling Fluids (ODF) and the Discharge of ODF-contaminated Cuttings	
2005	89	OSPAR Decision 2005/1 Amending OSPAR Decision 2000/2 on a Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals	
2007	97	OSPAR Decision 2007/1 to Prohibit the Storage of Carbon Dioxide Streams in the Water Column or on the Sea-bed	
2007	98	OSPAR Decision 2007/2 on the Storage of Carbon Dioxide Streams in Geological Formations	
2010	109	OSPAR Decision 2010/1 on the Establishment of the Mima Seamount Complex Marine Protected Area	
2010	111	OSPAR Decision 2010/2 on the Establishment of the Charlie Gibbs South Marine Protected Area	
2010	113	OSPAR Decision 2010/3 on the Establishment of the Atoll Seamount High Seas Marine Protected Area	
2010	115	OSPAR Decision 2010/4 on the Establishment of the Antillar Seamount High Seas Marine Protected Area	
2010	117	OSPAR Decision 2010/5 on the Establishment of the Jepprine Seamount High Seas Marine Protected Area	
2010	119	OSPAR Decision 2010/6 on the Establishment of the Mid-Atlantic Ridge North of the Azores High Seas Marine Protected Area	
2012	131	OSPAR Decision 2012/1 on the creation of the Charlie Gibbs North High Seas Marine Protected Area	



# Considering Air, Land, Sea and Human Activity, Together



SUSTAINABLE, NATURE-BASED ECONOMIES: from space and river water source, to coastal communities and subduction zones. Digitally nesting local, spatial areas regionally and ultimately globally enables local research, the incorporation of citizen science and industry participation.



A photograph of the Eden Estuary, Fife



A still of Ålesund in the OSC simulator