

MASTS Annual Science Meeting 2015

September 30th to October 2nd

Decommissioning and wreck removal workshop:

Best practice for managing man-made structures on the seafloor over their life cycle, using an evidence based approach

SUMMARY

Session One - 1st October- Current Baseline Knowledge and Experience

Science and the Decommissioning Debate, the Art of the Possible- Nick Owens (Director of the Sottish Association of Marine Science (SAMS))

- Issues surrounding oil platforms also apply to other industries such as renewables, wrecks and mooring systems. There is a need for dialogue between these different stakeholders
- Some of the main areas that science needs to address- colonisation effect on structures, impact on invasive species, impact of different decommissioning approaches, aggregation effects of multiple structures and higher ecosystem effects.
- SAMS is committing resources to answering some of these questions

Subsea Equipment Past, Present and Future- Peter Metcalf (Chairman of Council, Society of Underwater Technology (SUT))

- Specs and codes of decommissioning are insufficient and struggling to keep pace with technological changes
- There is an increasing drive to reuse old equipment, an area that needs monitoring to ensure safety standards are maintained
- As reserves dwindle, drilling is taking place in more testing environments, technology is making this possible, but needs close monitoring

Underwater Structure Design: the Potential for Marine Habitat Creation and Fish Attraction- Mike Elliott (Director of Institute of Estuarine and Coastal Studies, University of Hull)

- Placing structures in the seas creates new niches and fundamentally alters the ecosystems, or create totally new ecosystems
- There is a wealth of information on the ecological results of new manmade structures, and therefore a reasonably amount can be deduced about the impacts of removal/ alternative decommissioning options. What is better or worse, ecologically, varies on a case by case basis.
- Ten central tenants to consider in terms of environmental solutions

Measuring the Socio-economic and Environmental Value of Artificial Reefs in the Sound of Mull- Annabelle Lawrence (Director of Lochaline Dive Centre) and Louise Hives (PhD Student at SAMS)

- Wrecks can bring significant economic benefit to an area by providing a diving site
- Several ecological factors need to be considered when sinking a new wreck, including proximity to other reefs/ habitats
- There is scope to utilise recreational divers to monitor marine ecosystems, such as the development of a new reef

Innovation Programmes Update- Sarah Keynes (NERC Knowledge and Innovation Manager)

- NERC is running an innovation programme to select and fund projects in the oil and gas sector. Specifically focusing on decommissioning
- £1 million available to fund projects
- First funding application round currently open, with first projects to be started by April 2015

Session Two - 1st October- Enabling Technology

The Darkdale Case – Approach to Managing Wrecks- Andy Liddell (Salvage and Marine Operations, Ministry of Defence (MOD))

- A large amount of wrecks around the country, a large amount of these are the responsibility of the UK Government and each pose different levels of risk
- Removal of hydrocarbons is the most pressing issue, and removing oil in situ is cheaper than dealing with a spill
- Not all risk can be eliminated, but other issues such as explosives may need to be dealt with in the future.

The Environmental Considerations of Wreck Removal- Nigel James (Master Mariner and Associate Director of LOC Group)

- Dealing with large scale wreck removal, such as Costa Concordia, is a high complex organisation, requiring the coordination of a large amount of stakeholders and can raise unforeseen environmental issues
- Pollutants from the Costa Concordia included- soaps from the laundry room, medical supplies and food. As well as the more obvious sources such as oil.
- There are huge economic and political pressures in such situations and some decisions may not reflect the best options in hindsight

Transferring Methodology from Reference Industries- Jelle Lanting (General Manager, MAMMOET Decom BV)

- There is a huge potential for innovation through the deployment of existing technologies and methods in novel environments
- Some of the barriers to this include conflicting guidelines, industry inertia and reluctance to invest in untested approaches
- Cross stakeholder participation is key, and MAMMOET aid this process by demonstrating the similarities between the novel and normal application of the given technology/ method

Fisheries Interactions with North Sea Pipelines: Considerations for Decommissioning- Sally Rouse (MASTS intern, Scottish Association of Marine Science (SAMS))

- North Sea hosts high level of fishing and pipelines, interaction is inevitable
- There is evidence that around 1% of fishing trips target pipelines as fishing grounds, with 12.4% of boats engaging in this behaviour at least once over the 5 year data set
- There is a need to further study and understand this interaction, to help inform pipeline covering/ removal

Session Three – 2nd October- Measurement, Calibration and Quantification

Consideration during Design to Later Benefit the Environment during Decommissioning- Mark Purcell (Environmental Consultancy DNV GL)

- There is a large diversity of different structures that each pose their own threats in terms of decommissioning and abandonment
- Potential contaminants include asbestos, PCBs, NORMs, mercury, TBT, steel and concrete. Some of these have since been banned, however may still be a risk on old structures
- Structural risks and contaminant risk should be considered in the design of new equipment, however currently this is not always the case

Partnerships in Environmental Monitoring: the Strengths of Industry-Academic Collaborations- Murray Roberts (Director for Centre of Marine Biodiversity and Biotechnology, Herriot-Watt University)

- Ocean is facing a wide level of threats, coral bleaching, deep sea mining, acidification, trawling. As a result marine communities in the North Sea have been drastically altered
- The environmental impact of drilling platforms is minimal, especially in comparison to wide scale effects such as warming
- Moving forward there is a need to bring data sets together and allow free access to data

High Resolution Metrical Imaging of Subsea Assets: A Tool for Monitoring Change over Time- Mark Lawrence (Managing Director, ADUS Deep Ocean)

- Use sonar and laser data to create high resolution 3D renderings of subsea objects
- This data can help to inform work on subsea structures, such as wreck removal
- Data can be combined with existing data sets to assess damage to subsea structures

Scotland's Data Science Innovation Opportunity- Duncan Hart (BD Executive, The Datalab)

- The Datalab is a government based hub with a mandate to provide expertise and facilitate collaboration in data projects
- Work across industry, public sector and academia
- Datalab can deal with a wide range of projects at various scales, with a specific focus on increasing economic output of organisations

Session Four – 2nd October- The Case for Future Demands

The Cost Drivers- Mike Pettigrew (Oil and Gas Authority (OGA))

- By 2040, decommissioning in the oil and gas sector will cost the tax payer approximately £47 billion
- There is a huge diversity of structures, and mandatory 'one size fits all' regulations are not appropriate
- Economic costs of decommissioning can be brought down through increased industrialisation and repeatability of processes

The Environment- Dr Vitoria Todd (Managing Director, Ocean Science Consulting)

- Platforms serve wildlife in a number of ways- providing a surface, exclusion zones protect from fisheries, primary colonisers provide for whole ecosystems.

- Marine mammals in particular appear to heavily utilise food sources around offshore platforms
- The removal of structures is only justified for political and social reasons, ecologically it is usually preferable to leave them in place

Gone Fishing- John Watt (Industry Advisor, Scottish Fishermen's Federation (SFF))

- Diverse fishing fleet, targeting very different stocks, and therefore are differentially impacted by pipelines. Some positive effects, and some negative
- Snagging can pose a significant risk and should be considered in decommissioning of platforms and pipelines
- One size does not fit all, but there is a preference for as many structures to be removed as possible to open up fishing grounds

Net Environmental Benefits Analysis (NEBA) in Decommissioning- Tom Campbell (Partner, Pillsbury Winthrop Shaw Pittman)

- There is a need to value various ecosystem functions and services, in order to inform compensation claimed during environmental disasters, and to compare different environmental intervention strategies
- NEBA and HEA both offered methodologies for carrying out these calculations and informing decisions
- These are increasingly being recognised in at a governmental level, allowing for evidence based decision making