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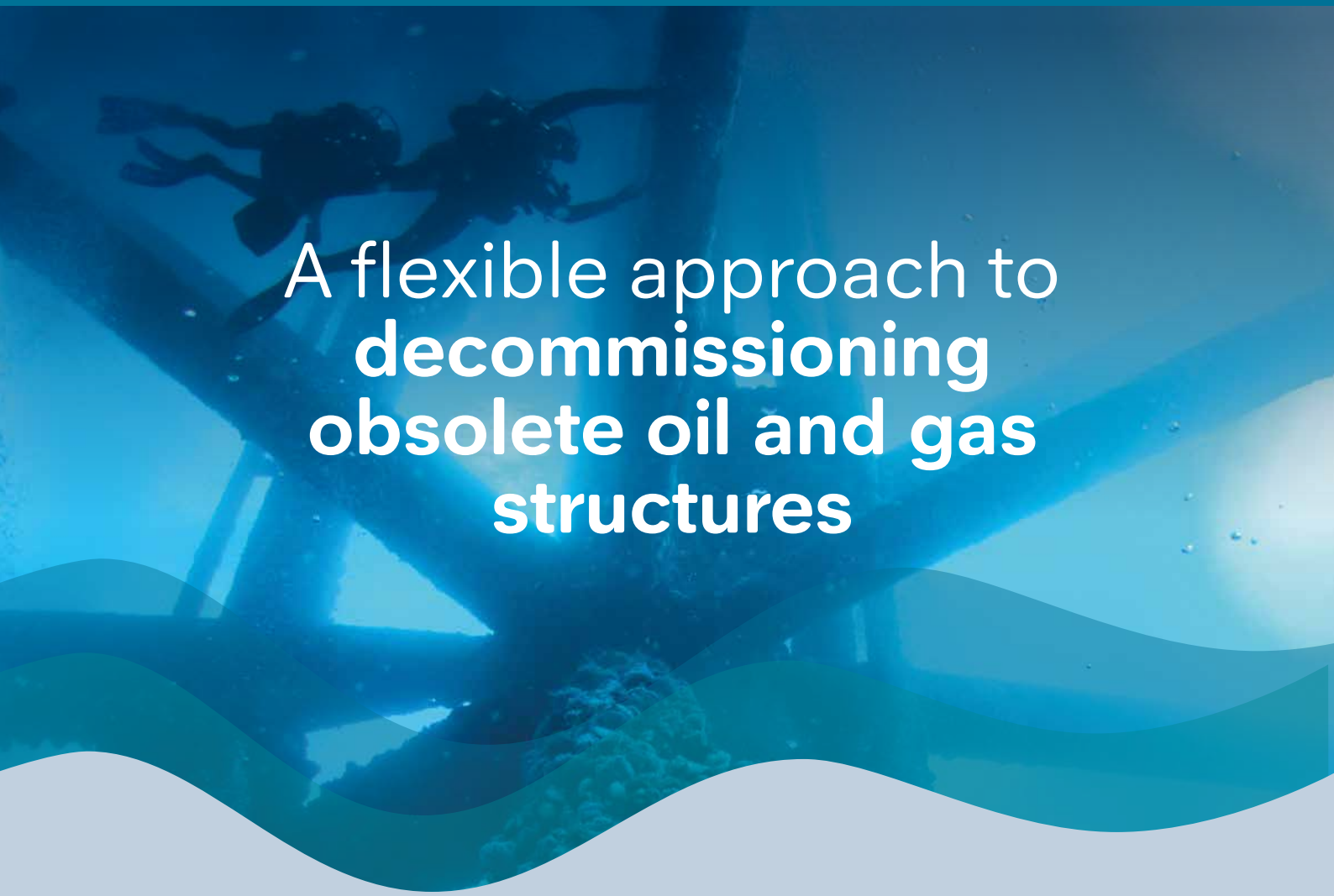
POLICY BRIEFING



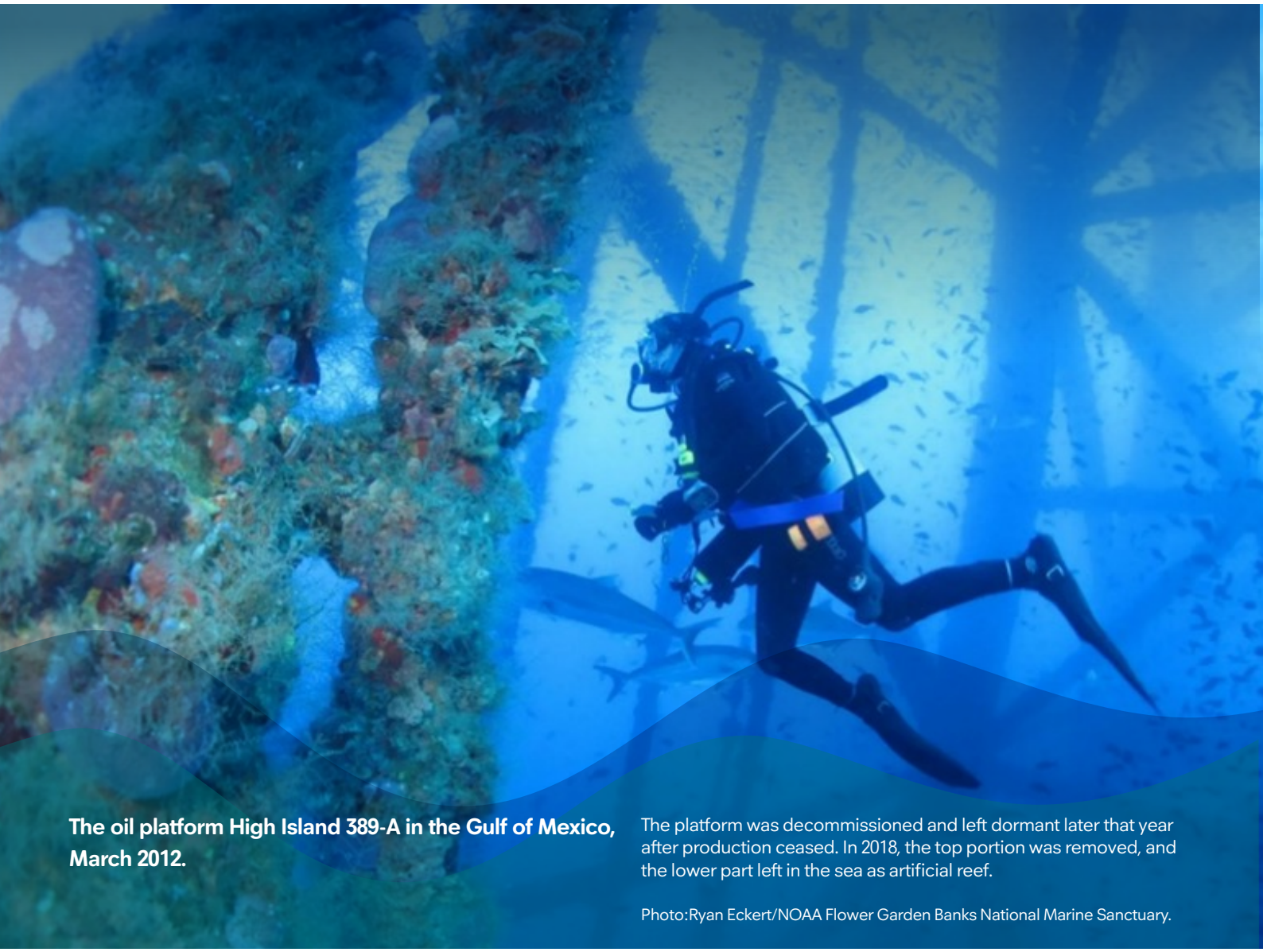
A flexible approach to **decommissioning obsolete oil and gas structures**

EXECUTIVE SUMMARY

Dr Anaëlle J. Lemasson and Dr Antony M. Knights

There are more than 1,500 oil and gas installations in the North Sea. An increasing number of them will reach end of production and require decommissioning in the next two decades. Since the 1990s, legislation in the North Sea and wider northeast Atlantic under OSPAR Decision 98/3 dictates that obsolete oil and gas platforms must be fully removed from the marine environment at end-of-life. As the world transitions to greener energy, wind turbines and wave-energy devices are being added to the marine environment but will also require removal at end-of-life. Options other than removal do exist and are being implemented elsewhere in the world, including partial removal, relocation, or repurposing (e.g. as artificial reefs, dive resorts or mariculture facilities), but are not currently considered in the OSPAR maritime area

The Insite **DREAMS** and **Synthesis** projects undertook research to provide scientific evidence on the environmental and societal effects of human-made artificial structures in the sea and the effects of various decommissioning options.



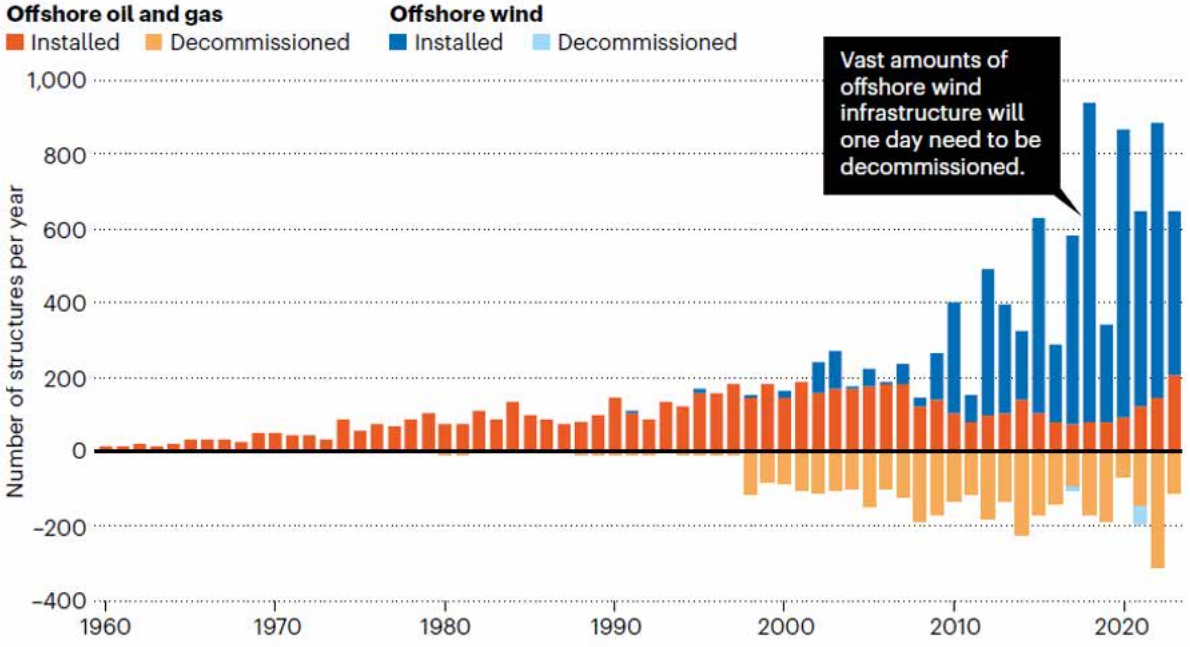
The oil platform High Island 389-A in the Gulf of Mexico, March 2012.

The platform was decommissioned and left dormant later that year after production ceased. In 2018, the top portion was removed, and the lower part left in the sea as artificial reef.

Photo:Ryan Eckert/NOAA Flower Garden Banks National Marine Sanctuary.

DECOMMISSIONING LOOMS

Only a fraction of the oil, gas and wind infrastructure in the world's oceans has been decommissioned to date.



RESEARCH BACKGROUND

DREAMS and **Synthesis** are two linked projects funded by the **INSITE** programme (industry-research consortium) and led by researchers from the University of Plymouth, University College Cork, CEFAS and Plymouth Marine Laboratory.

We have established with DREAMS that:

- the empirical evidence needed to provide sound recommendations is still largely lacking (in particular, case studies from real-world decommissioning)[2-4]
- available evidence demonstrates that while oil and gas structures may not replicate the full benefits of natural reefs, they can provide some ecological benefits akin to that of artificial reefs, such as increased fish abundance[5]

'Synthesis' gathered expert international scientific views on the perceived effects of structures and their decommissioning in the sea. This revealed that:

- while general scientific consensus can be reached, environmental and societal benefits from structures are thought to vary depending on the decommissioning options but also depending on the local context[6]
- most experts preferred obsolete structures to be removed from the oceans, despite also being of the opinion that alternative options such as 'Rigs-to-Reefs' (leaving them in the sea to 'act as artificial reefs') were the best way to meet environmental targets as set in three international treaties (the UN Rio+20 'Future We Want', the UN Sustainable Development Goals, and the OSPAR North-East Atlantic Environment Strategy 2030)[7]
- whether the benefits of leaving structures in the sea warrants the consideration of alternatives to complete removal depends on the priorities of stakeholders in a given region[6-7]

WHAT IS OSPAR AND DECISION 98/3?

The OSPAR Commission (https://info.ospar.org/) is the cooperating body responsible for the protection of the marine environment of the North-East Atlantic. Its maritime area is divided into five regions, including Region II: Greater North Sea. Currently, 15 member states are contracting parties, including the United Kingdom, as well as the European Union. 62 observers (such as intergovernmental organisations, but also non-governmental organisations linked with nature conservation, environmental protection, industry and trade, and regional or local authorities) take part in OSPAR Commission meetings and contribute actively to its policy work.

OSPAR was formally established in 1992 as a successor to the Oslo and Paris Conventions (respectively, the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircrafts, 1972; and the Convention for the Prevention of Marine Pollution from Land-Based Sources, 1974). The OSPAR Convention comprises 34 Articles and five Annexes; Article 5 and Annex III specifically dealing with the prevention and elimination of pollution from offshore sources. OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations recalls these two texts.

OSPAR Decision 98/3 was implemented following global public opposition to the disposal in the deep sea of floating oil-storage platform Brent Spar. The resulting legislation was imposed in the northeast Atlantic, with the legal requirement to completely remove decommissioned energy infrastructure from the sea.

RESEARCH FINDINGS

We have established that decommissioning alternatives to removal should be considered, and that regional decision makers should be empowered to tailor solutions to their specific contexts[1]. This is because:

- Removal is a complex process.
- It is logistically difficult, costly (~£44.5bn for the UK over the next two decades), and accompanied by serious human health and safety risks.
- It can negatively impact the marine environment, while alternatives can provide some benefits.

RESEARCH RECOMMENDATIONS

We recommend that OSPAR 98/3 should be revised to allow more flexible approaches to decommissioning.
More specifically:

- Regional decision-makers should have the legal power to consider alternative decommissioning options better-suited to their local context
- Alternative ways of managing oil and gas structures at end-of-life could bring social and economic benefits as well as environmental benefits in specific cases
- A robust cost-benefit analysis process should be undertaken by regional decision makers on a case-by-case basis, rather than continuing with the current one-size-fits-all approach
- Further robust and objective empirical data must be collected on the effects of decommissioning structures to ensure a transparent evidence-based decision-making process

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WHERE TO GET MORE INFORMATION

You can find out more information about the research projects
DREAMS: https://www.plymouth.ac.uk/research/marine-eco-engineering-research-unit/dreams

SYNTHESIS: https://www.plymouth.ac.uk/research/marine-eco-engineering-research-unit/insite-synthesis

You can read our call for a change in the law: https://www.nature.com/articles/d41586-024-00645-0

Research outputs (for the scientific consensuses from Synthesis):
https://www.sciencedirect.com/science/article/pii/S0301479723026853

https://www.sciencedirect.com/science/article/pii/S0301479723024325

Research outputs (for DREAMS).

https://www.cell.com/trends/ecology-evolution/fulltext/S0169-5347(23)00083-6

https://link.springer.com/article/10.1186/s13750-022-00285-9

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Dr Anaëlle J. Lemasson
Post-Doctoral Research Fellow
School of Biological and Marine Sciences
(Faculty of Science and Engineering)
anaelle.lemasson@plymouth.ac.uk

Dr Antony M. Knights
Senior Lecturer in Environmental Sustainability
AKnights@ucc.ie

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Cefas

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