

# What are the risks posed to aquatic life by the hazardous compounds transported around EU marine waters?

Marine Theme Objective: Human pressures and impact on the marine environment

## What's the problem?

Marine pollution, in general, and accidental marine pollution, in particular, are issues of major concern from the standpoint of their impacts on the health of the marine environment and their socio-economic uses. The primary objective of this project is to toxicologically profile the major oil and hazardous and noxious substance (HNS) types transported within EU waters using a suite of aquatic animal bioassays and biomarkers recommended by the International Council for Exploration of the Seas (ICES) Working Group for Biological Effects of Contaminants (WGBEC). The data generated by the project will provide base-line reference data should a spill occur. These data would be used to inform the assessment of the environmental risk posed by the spill, identify vulnerable species and suitable monitoring organisms with expected effects. The project is an international collaboration with partners from Norway, United Kingdom, Spain and France.

## What are the aims of the project?

The project aim is to undertake the toxicological profiling / hazard identification of the major oil and HNS types transported around European marine waters. The importance of undertaking this research is to establish the applicability of biological effects techniques (using aquatic species as sentinels) for risk assessment, management and policy purposes after oil spill accidents. The project will be performed in close collaboration with another AMPERA-funded project RAMOCS (developing risk assessment methodologies for oil and chemical spills in the European Marine Environment) to ensure synergy between the two projects.

The main scientific objectives of the project are:

- Select and chemically characterise the major oil and HNS types being transported within the EU.
- Toxicity profile the major transported oil/HNS types using biological effect techniques.
- Chemically identifying the petrogenic components responsible for the observed effects.



Figure 1: Oil rig. Source: Cefas

## Which policy areas will the research inform?

Information from this project will directly feed into the United Kingdom Marine Monitoring and Assessment Strategy (UKMMAS).

In addition, this project will aid the formulation of policy for the management of the marine environment, including the implementation of the OSPAR Joint Assessment Monitoring Programme.

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### What are the results from the project and how will they be used?

Driven by economic, ecological and security considerations, there is a growing pressure for new or improved prevention mechanisms and emergency response systems to better protect Europe's marine ecosystems.

Data generated by the project will provide base-line reference data should a spill occur in European waters. These data would be used to inform the assessment of the environmental risk posed by the spill, identify vulnerable species and suitable monitoring organisms with expected effects along with assisting in the design of fit-for-purpose monitoring programmes (strategies) and to ensure monitoring is cost effective.

The need for these data were highlighted following a request by the OSPAR Commission in 2006 that ICES, through the WGBEC, consider and assess the long term impact of oil spills on marine and coastal life as requested from OSPAR and provide a guidance document on the use of biological effects techniques for oil spill situations.

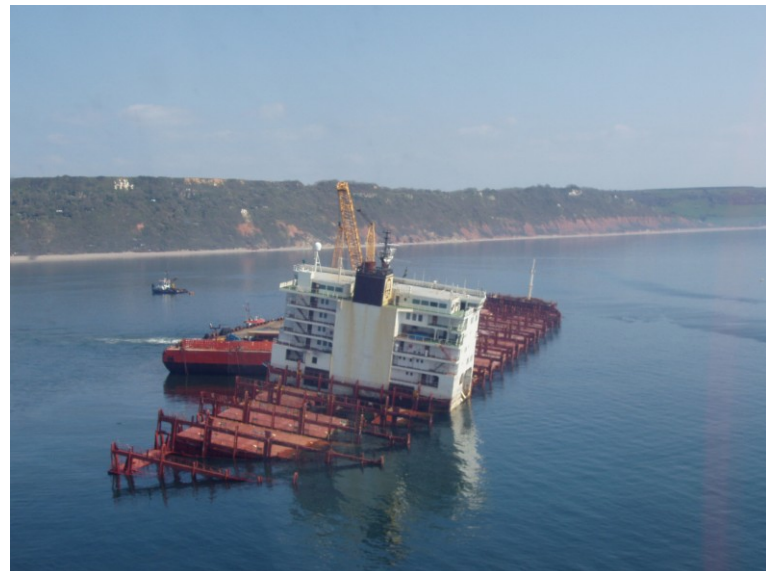


Figure 2: Accidental oil spill. Source: Cefas

### Where can I find further information about this and related research?

If you would like more information, please visit <http://www.cid.csic.es/ampera/>  
<http://www.niva.no/toxprof>  
<http://www.idaea.csic.es/ramocs/index.php> or  
[Brett.lyons@cefas.co.uk](mailto:Brett.lyons@cefas.co.uk)

Alternatively, please contact Defra's Marine and Fisheries Science Unit: [marinescience@defra.gsi.gov.uk](mailto:marinescience@defra.gsi.gov.uk)

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