

A selection of resources dealing with Modelling Tools and Services.

Using the MARINER Knowledge Tool



MAKING THE MOST OF THE EXISTENT KNOWLEDGE



MARINER



**ENHANCING HNS PREPAREDNESS
THROUGH TRAINING AND EXERCISING**



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INDEX

INTRODUCTION	4
REPORTS	6
Validation of ecological modelling to predict the population level-impact of priority HNS.....	6
State of the art of air pollution models.....	6
Wind coefficients and model calibration for drifter trajectories simulation with MOHID.....	6
SERVICES / TOOLS.....	7
MARINER modelling Platform – Common Operating Picture	7
Modelling of HNS hazards to the environment	7
OGC GML schema for HNS Spills	7
MARPOCS web-based Common Operating Picture (COP)	7
SOFTWARE / MODELLING TOOL	8
CAMEO software suite	8
MULTIMEDIA	9
Video explaining the experiments and use of drifters to follow slicks	9

INTRODUCTION

The aim of MARINER, a DG ECHO funded project, is to improve planning, preparedness and response to HNS spills by harnessing and capitalising existing HNS knowledge and resources, improving tools for decision making, reinforcing training and exercise capabilities, and increasing awareness and information exchange.

Aligned with its objectives, one of the MARINER tasks was the identification and compilation of existing HNS preparedness and response knowledge generated by EU funded public research, as well as other HNS related resources produced by international organisations dealing with maritime pollution, and make them easily available through a user friendly publicly available database: the [MARINER knowledge tool](#). This online database allows users to search for resources by major HNS theme, organisation, projects, type of output, and funding source. Through a combination of simple and advanced queries, users can have direct access to resources or when appropriate, to the author's website. It currently stores information on 110 research projects and 28 organisations and contains 467 resources with relevance for HNS matters such as contingency planning, response protocols and equipment, environmental monitoring, impact and recovery, HNS characterisation, modelling, risk analysis, and training and exercising among others. The compiled resources include thematic reports, scientific publications, prototypes, software and modelling tools, books, guidelines, databases, services and tools, multimedia and training activities and materials.

With the help of the MARINER Knowledge Tool, and based on a criterion guided selection of HNS resources, this booklet provides an example on how the knowledge generated by expert organisations and EU projects have addressed “Modelling tools and services” to improve preparedness, response and mitigation of marine pollution caused by HNS.

A total of 9 resources have been selected keeping in mind the considerations mentioned earlier and the following criteria:

- Free online availability
- No confidentiality restrictions
- Development completed



- No limits in the geographic scope of application or easy adaptability to other areas
- Prioritisation of operational materials vs scientific publications

The selection of resources in this booklet includes modelling tools and other online services such as web-based platforms for studying and predicting trajectories of pollutants, explanatory videos and reports on pollution models.

To facilitate the reading of the booklet, resources have been listed in chronological order (most recent resources appear first) and grouped into 4 different categories according to resource types: reports, services and tools, software and modelling tools and multimedia. For each resource, a basic description (title, description, source, year of publication, and link to resource) is provided.

MARINER booklets are intended to demonstrate how knowledge can be compiled and clustered to facilitate its uptake. Nevertheless, to get a comprehensive overview of all the resources potentially relevant for the different thematic areas, readers are kindly invited to explore the full content and search functionalities of the [MARINER knowledge tool](#).



REPORTS

Validation of ecological modelling to predict the population level-impact of priority HNS

Summary: In this study aniline was selected as a priority HNS test chemical and *Tisbe battagliai* as appropriate test organism to carry out tests on population level endpoints that could provide an example dataset relevant to the modelling and prediction of longer term population level impacts of HNS spills. Part 1: Development of test data for population modelling. Part 2: Population models as a basis for Ecological Risk Assessments of HNS in marine organisms. Case studies of two marine crustacean under exposure to aniline.

Project: ARCOPOLplus, Improving maritime safety and pollution response through technology transfer, training & innovation

Publication year: 2014

Language: English

[Link](#)

State of the art of air pollution models

Summary: Report on the most relevant air pollution models used for modelling the dispersion of the gaseous pollutants produced in maritime accidents.

Project: ARCOPOL, Atlantic Regions' Coastal Pollution Response and Preparedness

Publication year: 2010

Language: English

[Link](#)

Wind coefficients and model calibration for drifter trajectories simulation with MOHID

Summary: Successful development of methodology for the calibration of drifter models in two case studies proved by the obtaining of optimal wind drag coefficients and turbulent diffusion coefficients.

Project: DRIFTER, HNS, Oil and Inert Pollution: Trajectory Modelling and Monitoring

Publication year: 2010

Language: English

[Link](#)



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SERVICES / TOOLS

MARINER modelling Platform – Common Operating Picture

Summary: The MARINER modelling platform comprises the software (3D HNS spill model) and interface (Common Operating Picture - COP) for predicting the fate, behaviour and environmental / public health risks from a chemical spilled in the European Atlantic area and whether it may potentially affect the marine or coastal environment. In addition to this, the following reports and resources were developed by the MARINER consortium to provide support in the use of this platform: 1) two reports concerning the modelling of HNS hazards to the environments explaining the choice of toxicological parameters and the rationale of the environmental impact module, 2) an OGC GML Schema for HNS spills to assure the interoperability among different agencies when they share information about HNS spill events.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2017

Language: English

[Link](#)

Support resources:

[Modelling of HNS hazards to the environment](#)
[Link 1](#) and [Link 2](#)

[OGC GML schema for HNS Spills](#)

MARPOCS web-based Common Operating Picture (COP)

Summary: MARPOCS Common Operating Picture (COP) is an integrated web-based and mobile-friendly decision support system that provides MARPOCS stakeholders (mainly marine pollution managers from national, regional and local authorities) a better maritime situational awareness, improving their preparedness to face oil or chemical incidents.

Project: MARPOCS, Multinational Response and Preparedness to Oil and Chemical Spills

Publication year: 2017

Language: English

[Link](#)



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SOFTWARE / MODELLING TOOL

CAMEO software suite

Summary: The Office of Response and Restoration (OR&R) of NOAA developed the CAMEO software suite, to help emergency responders and planners to assess hazardous material releases and protect public health and safety. CAMEO is a group of programs that can be used by first responders and planners to help them prepare for and deal with hazmat emergencies.

Organisations: NOAA, National Oceanic and Atmospheric Administration - US Department of Commerce

Publication year: First products introduced in 1986

Language: English

[Link](#)



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MULTIMEDIA

Video explaining the experiments and use of drifters to follow slicks

Summary: The aim of this video is to warn fishermen and other sectors about the use of drifters and their importance in combatting marine pollution.

Project: DRIFTER, HNS, Oil and Inert Pollution: Trajectory Modelling and Monitoring

Publication year: 2010

Language: Spanish

[Link](#)