A selection of resources dealing with Environmental Monitoring, Impact, and Recovery.

Using the MARINER Knowledge Tool

MAKING THE MOST OF THE EXISTENT KNOWLEDGE

MARINER

ENHANCING HNS PREPAREDNESS THROUGH TRAINING AND EXERCISING

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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 HNS related issues relevant for "Environmental monitoring, impact and recovery".

A total of 14 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

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- Prioritisation of operational materials vs scientific publications

The selection of resources in this booklet includes guidelines and protocols to assess the environmental impact and to support recovery operations, toxicological studies, tools for post-incident and chemical monitoring, a few examples of software and modelling tools for forecasting and mapping the evolution of spilled substances in the environment, and a chemical database for facilitating risk assessment.

To facilitate the reading of the booklet, resources have been listed in chronological order (most recent resources appear first) and grouped into 5 different categories according to resource types: guidelines and standards, reports, services and tools, software and modelling tools and databases. 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.

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GUIDELINES / STANDARDS

Guidelines and protocols for environmental impact assessment

Summary: A systematic compilation and validation of existing chemical, biological and ecological information to produce guidelines and protocols for HNS environmental monitoring and impact assessment associated with HNS accidental spills.

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English

Link

Post-spill monitoring for environmental impact assessment

Summary: Overview of main scientific approaches and methodologies for sampling strategies and ecotoxicology studies regarding post-spill monitoring. Post-spill monitoring includes all the procedures undertaken to obtain and process information related with the behaviour and fate of a spill, its effects, and the effects of response activities.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Language: English

Link

UK recovery handbook for chemical incidents (and associated publications)

Summary: A guidance document specifically designed to aid decisions in managing the recovery phase of a chemical incident where contamination has affected food production systems, inhabited areas and water environments.

Organisations: PHE, Public Health England

Publication year: 2013

Language: English

Link

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Post-incident monitoring guidelines

Summary: The guidelines are to help the design and management of post-spill monitoring; determine impact to marine food chains, ecosystems and resources; gather data to help establish the effectiveness of response and promote scientific best-practice. These are a major deliverable of the PREMIAM programme and cover key principles of an environmental monitoring programme.

Project: PREMIAM, Pollution Response in Emergencies: Marine Impact and Monitoring

Publication year: Second edition, 2018

Language: English

Link

Concise International Chemical Assessment Documents

Summary: Concise International Chemical Assessment Documents (CICADs) are similar to Environmental Health Criteria (EHC) documents in providing internationally accepted reviews on the effects on human health and the environment of chemicals or combinations of chemicals. They aim to characterize the hazard and dose-response of exposure to chemicals and to provide examples of exposure estimation and risk characterisations for application at the national or local level. They summarise the information considered critical for risk characterisation in sufficient detail to allow independent assessment, but are concise not repeating all the information available on a particular chemical.

Organisations: ILO, International Labour Organisation and WHO, World Health Organization

Publication year: The first documents were published in 1998

Language: English

Link

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REPORTS

Guidance list of appropriate passive samplers for different monitoring situations for selected HNS compounds

Summary: As a wide range of chemicals, many in bulk quantities are transported at sea, the primary focus of this study was on some of the most hazardous substances that are most frequently transported. This report considers the most suitable types of passive samplers for monitoring chemical spills at sea and takes as its focus the priority HNS identified by Neuparth et al., 2011.

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

Publication year: 2014

Language: English

Link

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.

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

Publication year: 2014

Language: English

Link

Datasheets with toxicological environmental data

Summary: This report outlines available toxicological data on 24 HNS that pose major environmental risk to the EU Atlantic marine environment

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

Publication year: 2010

Language: English

Link

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SERVICES / TOOLS

Information Platform for Chemical Monitoring

Summary: IPCheM - the Information Platform for Chemical Monitoring - is a single access point for locating and retrieving chemical monitoring data collections managed and available to European Commission, European Agencies, Member States, international and national organisations and researchers.
The Platform aims to support a more coordinated approach to collecting, storing and accessing monitoring data on chemicals and chemical mixtures, in relation to humans and the environment. IPCheM is a de-centralised system, providing remote access to existing information systems and data providers.

Organisations: JRC, Joint Research Centre

Publication year: 2016

Language: English

Link

HNS online Platform

Summary: This HNS online platform provides systematized information of HNS properties and spills response, educational tools, guidelines and protocols, environmental sensitive index for the Portuguese coast and modelling tools. This platform aims to support preparedness and response to accidental spills (including Oil), to foster a more effective decision-making process and response.

Project: ARCOPOLplatform, Platform for improving maritime coastal pollution preparedness and response in Atlantic regions

Publication year: 2015

Language: English

Link

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SOFTWARE / MODELLING TOOL

MARINER modelling Platform

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 resource:

Modelling of HNS hazards to the environment

Summary: Two reports were produced. The first explains the choice of toxicological parameters selected and their application to evaluate the environmental hazard and risk following a maritime spill. The second report explains the rationale of the environmental-impact module developed and coupled to the 3D HNS-spill model and includes a description of the model developed to predict the effects of a HNS spill on a population of representative marine crustaceans (amphipods).

Project: MARINER, Enhancing HNS preparedness through training and exercising

Publication year: 2018

Language: English

Link 1 and Link 2

Chemical Aquatic Fate and Effects (CAFE) Database

Summary: The Chemical Aquatic Fate and Effects (CAFE) database is a software program that can be used to estimate the fate and effects of thousands of chemicals, oils, and dispersants. CAFE serves as a tool to help responders in their assessment of environmental impacts from chemical or oil spills into an aquatic environment.

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

Publication year: 2015

Language: English

Link

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DATABASE

ChemAgora web portal

Summary: The JRC's ChemAgora web portal provides search capabilities to retrieve chemical data from a plethora of online resources enabling users to access both regulatory information on chemicals and public databases on chemical properties. ChemAgora is intended to support chemical risk assessment activities by assisting stakeholders to gain a quick overview of globally available data about chemicals they are interested in. This speeds up the process of data discovery and saves valuable resources. ChemAgora, through an on-the-fly search, informs whether a chemical features in any of 17 external data sources or the OECD eChemPortal (featuring another 30 external sources), and provides clickable links leading to the third-party website pages containing the information.

Project: diXa, Data Infrastructure for Chemical Safety

Publication year: 2017

Language: English

Link

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