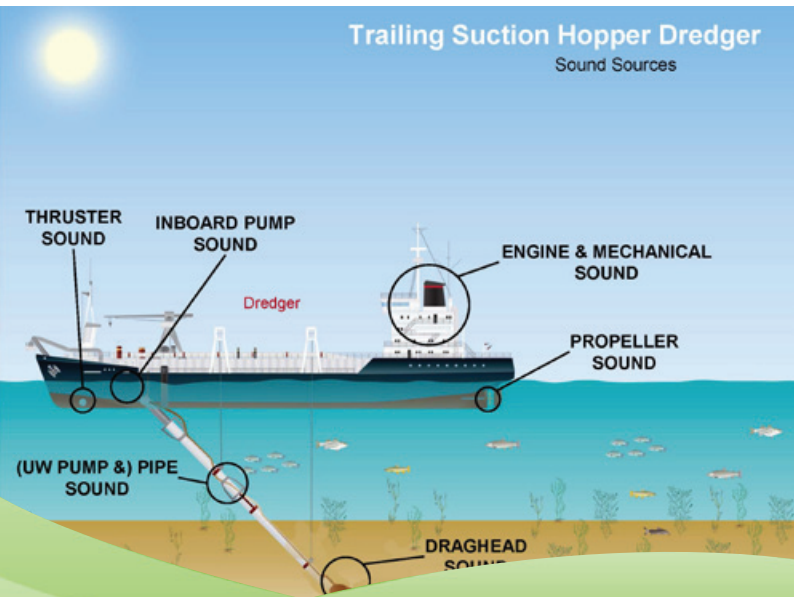




World Organisation of Dredging Associations



Central Dredging Association



## WODA Workshop

# Underwater Sound in Relation to Dredging: Translating science into first-hand guidance

26 March 2015, Paris, France

Organised by CEDA on behalf of WODA, which incorporates

- Western Dredging Association (WEDA)
- Central Dredging Association (CEDA)
- Eastern Dredging Association (EADA)

[www.cedaconferences.org/UWS](http://www.cedaconferences.org/UWS)

## Programme and Registration Information

### Supported by

Center for expertise and engineering on risks, urban and country planning, environment and mobility (Cerema)



Direction technique Eau, mer et fleuves

French Maritime Cluster (CMF)



Cluster Maritime Français

Le Faire-Savoir Maritime  
The Maritime Voice

French federation of companies working in the maritime field (Tramaf)

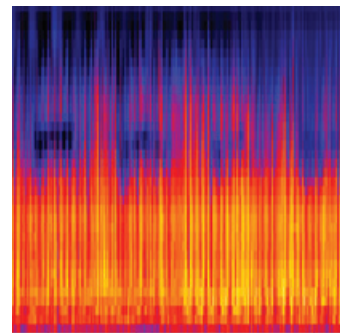
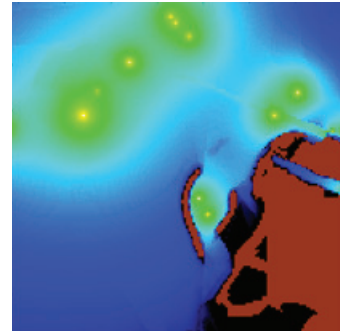


# INTRODUCTION TO THE WORKSHOP

The effects of underwater sound have become an important environmental issue. As a consequence the EU Marine Strategy Framework Directive addresses noise impacts. Outside Europe, developers and planners also have to consider and manage impacts related to underwater sound with increasing urgency.

In June 2013 WODA published a *Technical Guidance on Underwater Sound in Relation to Dredging*. It was compiled by the WODA Expert Group on Underwater Sound, under the remit of the WODA Environmental Commission, and reviewed by experts from the most relevant groups. The paper sets out a comprehensive risk assessment framework and provides a systematic approach to sound impact studies. It advises on how sound can affect aquatic life and provides a detailed compass for underwater sound measurements. It informs in detail on sound sources in relation to dredging and summarizes the knowledge on dredging sound effects. Finally it gives guidance on how dredging-related sound risks could be managed.

The paper was extremely well received among scientists and stakeholders from policy and industry. Yet, like its predecessor the CEDA position paper on underwater sound in relation to dredging (published in 2011), it also raised many questions and requests for further information and training.



## Objective of the workshop / Learning

Via interactive presentations, held by international leading experts, WODA will bring the Technical Guidance 'to life'. Also, based on the latest knowledge and experience, guidance will be given on how to assess the effects of the underwater sound from dredging operations on marine life. Participants will learn about:

- Underwater sound in general and how its impact should be assessed
- How underwater sound should be measured
- Sound levels of various dredging activities
- Documented impacts of underwater sound from dredging
- How dredging noise impacts can be managed

## Who should attend?

The workshop is aimed at:

- Regulators
- Policy makers
- Industry
- Stakeholders
- Scientists

# PROGRAMME

## 08.15 Registration and coffee

### 09.00 Opening

**Anders Jensen**, Vice-President WODA, President CEDA, DHI, Denmark

### 09.05 Welcome

**Paul Scherrer**, Ministry of Environment, Sustainable Development and Energy (MEED), France

### 09.15 Why is underwater sound an important issue and how should sound impacts be assessed?

The impacts of underwater sound on aquatic life have become an important environmental issue. This presentation provides background on underwater sound, and on the importance of sound for marine life for communication, orientation and other vital functions. It will provide a comprehensive risk assessment framework for the investigation of sound impacts on which the following talks will build. The different ways in which underwater sound can affect marine life will be introduced and critically discussed.

**Dr Frank Thomsen**, Workshop Chair, Chair WODA Expert Group Underwater Sound, Senior Marine Scientist, DHI Denmark

## 10.00 Coffee

### 10.30 To what degree is aquatic life exposed to underwater sound?

To assess the risks of the underwater sound generated by dredging activities for marine animals, one needs to be able to quantify the amount of sound to which the animals are exposed. This talk will address the progress in the development of international standards for underwater acoustic terminology and for underwater acoustic measurement procedures. It will describe the relevant acoustic metrics for quantifying the underwater radiated sound of dredgers and procedures for measuring this sound during various dredger operations. It will also propose an approach for quantifying the sound distribution in the area around the dredger(s) and the dose of sound to which marine animals can be exposed.

**Dr Christ de Jong**, WODA Expert Group Underwater Sound, Senior Scientist, Netherlands Organisation of Applied Science (TNO), the Netherlands

### 11.15 Dredging sound measurements

There are a number of ways in which dredging may generate sound that propagates into the water column. Measuring and quantifying the radiated sound during different phases of operation can provide better understanding of the sound generation mechanisms that are characteristic of dredging activity. Drawing on the results of several recent experimental studies, this presentation describes the characteristics of sound radiated during a variety of dredging operations, and identifies the likely sound generation processes.

**Stephen Robinson**, National Physical Laboratory (NPL), UK

## 12.00 Lunch

### 13.00 How does dredging sound affect aquatic life?

Although incomplete, an understanding of the characteristics of dredging-related sound is emerging. This presentation summarizes the state of knowledge pertaining to predicted and demonstrated consequences of exposure to dredging sound. Diversity among animals in terms of susceptibility to sound-induced impacts will be addressed. Challenges to measuring biologically meaningful responses will be identified. Dose-response assessment of dredging-related sound will be placed into perspective with other sound sources. New ways of assessing dredging-related sound impacts will be presented.

**Dr Douglas Clarke**, WODA Expert Group Underwater Sound, Senior Environmental Scientist HDR, USA

### 13.45 Managing underwater sound: The evolving policy framework

Main policy developments (like the European Marine Strategy Framework Directive and the US NOAA Ocean Noise Strategy) will be reviewed, and the implications of these developments for regulators and managers will be discussed. Monitoring of underwater sound is now being introduced in many areas. We see a trend to larger-scale assessments and, in the EU, an intensification of regional cooperation. These developments will likely influence management and regulation of underwater noise of specific sectors (such as oil and gas production, off-shore wind energy, shipping and military). We will look at the possible implications for the dredging sector.

**René Dekeling**, Ministry of Infrastructure and the Environment, the Netherlands, Chair EU MSFD expert group TG Noise, co-convenor OSPAR working group ICG Noise

## 14.15 Coffee

### 14.45 Discussion, questions and open round Mediator: **Dr Frank Thomsen**, Workshop Chair

### 16.00 Closing remarks

**Dr Frank Thomsen**, Workshop Chair

### 16.05 Reception

### 17.00 End of programme

## Date and venue

The workshop will be held on the 26<sup>th</sup> of March 2015 at Vedettes de Paris, Port de Suffren - 75007 - Paris, France.  
[www.vedettesdeparis.com](http://www.vedettesdeparis.com)

## Workshop language

English

## Registration

Please register online at [www.cedaconferences.org/UWS](http://www.cedaconferences.org/UWS)

## Fees

Members of CEDA, EADA, WEDA, CMF, Tramaf and government employees	€ 250.00
Non-members	€ 325.00

These fees include attendance at the workshop, documentation and catering as announced.

## Accommodation

We would recommend that you book your hotel through [www.booking.com](http://www.booking.com). To search for a hotel close to the conference venue, search using the term Paris 7th and select the first item in the drop down list that appears (7th arr., Paris, Ile de France, France). Please book your room early, to avoid disappointment.

## Bookings and enquiries

All enquiries should be addressed to:

Event logistics Ltd  
c/o Priory Farm, Main Street  
Barrington, Somerset TA19 0JE, United Kingdom  
Telephone number: +44 (0) 1460 247185  
Email: [richard.hart@event-logistics.co.uk](mailto:richard.hart@event-logistics.co.uk)

## Organising bodies

**WODA** stands for World Organisation of Dredging Associations. It is an independent, non-profit, professional organization, composed of three separate, autonomous dredging associations, with separate corporate structures: the Western Dredging Association (WEDA) serving the Americas, the Central Dredging Association (CEDA) serving Europe, Africa, and the Middle East, and the Eastern Dredging Association (EADA) serving the Asian and Pacific region.

**CEDA** is an established authority and the leading independent forum for the professional dredging community, and associated industries, in Europe, Africa and the Middle East. It represents dredging professionals and organizations, from government, academia and business, in the region and fosters and promotes the understanding and advancement of dredging to the wider community. It is a recognized reference point for high-quality specialist knowledge on all aspects of dredging and provides a multidisciplinary network for professional contacts.

CEDA members are representative of consultancies, research and educational institutions, port authorities, government agencies, dredging contractors, designers and builders of dredging vessels, suppliers of ancillary equipment, and organizations providing a whole range of related services.

## Terms and conditions

### Cancellation

Cancellations and substitutions must be made in writing. **Cancellations made before 15th March 2015 will be charged € 50.** Cancellations made after this date will be charged the full invoice amount. Non-attendance at the event will be considered a late cancellation and the full fee will be payable.

### Joining instructions

Joining instructions will be issued subject to receipt of payment. We cannot be held responsible for non-arrival of registration information. If you have not heard from us within 14 days of the workshop date, please contact Event Logistics Ltd, [richard.hart@event-logistics.co.uk](mailto:richard.hart@event-logistics.co.uk) +44 (0) 1460 247185.

### Liability and insurance

Registration fees do not include insurance of any kind. It is strongly recommended that when registering for the workshop and booking travel arrangements, intending participants should arrange personal insurance cover for the following:

- Loss of registration and tour fees, deposits, hotel costs and air fares, through cancellation of the workshop for Force Majeure or any other reason
- Failure to utilise pre-booked arrangements due to airline delays for Force Majeure or any other reason
- Medical expenses and loss or damage to personal property

Neither WODA, CEDA nor Event Logistics Ltd will accept responsibility for any personal injury, damage or loss of property, which may occur in connection with the workshop. The insurance is to be purchased in the participant's own country.

### Data protection

CEDA and Event Logistics Ltd are committed to protecting your privacy and security. The information provided by you upon registering online will be used for correspondence, billing and accounts, for this event. The data will also be held on a database to provide you with information on services that CEDA provides in the dredging field. We do not sell data to third parties. On the online form you will have the opportunity to indicate if you do not wish to receive details of future CEDA events and other products and services.