



**CENTRE DE DOCUMENTATION DE RECHERCHE ET D'EXPERIMENTATIONS SUR
LES POLLUTIONS ACCIDENTELLES DES EAUX**

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Workshop
« Environmental restoration and ecological monitoring »
Cedre/European Commission
30 January - 2 February 2002, Cedre (Brest, France)

INTRODUCTION

The workshop "Environmental restoration and ecological monitoring", funded by the European Commission in the framework of the three-year rolling plan for Community action in the field of response to marine pollution was organised by *Cedre*, in Brest, France, from 30th January to 2nd February 2002. Its aim was to gather together European experts on the field of response to oil spills with an experience in or interested by environmental restoration and ecological monitoring, in order to share experience from past accidents and discuss recent developments. The objective was also to collate and transmit to the EC the proposals these experts made in order to improve European co-operation in matters of information, research and exchange of experience.

PARTICIPANTS

In all, 49 persons (delegates, speakers and guests) from 9 countries (Belgium, Denmark, France, Germany, Ireland, Italy, Spain, Sweden and the UK) attended this workshop, in which several people from *Cedre* were also involved. Twenty-two of those were national delegates and speakers and came from ministries, government agencies, the National Assembly for Wales, administrations, operational structures, universities, associations for the protection of the environment, research centres, ICRAM, the IOPC Funds, ITOPF and private companies. Others were French participants from ministries, universities, national and local administrations, operational structures, research centres, associations for the protection of the environment private companies and the media and European participants from ICRAM, IPIECA, OSRL, ITOPF and the IOPC Funds.

Due to the number and diversity of origins of the participants, debates were often quite passionate and fruitful and lunches and breaks were good opportunities for people from different countries and different structures to exchange experience and points of view.

PROGRAMME

The programme included 15 lectures, grouped within 6 themes : *case studies (the Haven, the Sea Empress, the Pallas, the Baltic Carrier, the Erika), funding environmental restoration and ecological monitoring, current technique, research and projects, restoration actions taken in the past, advantages offered by modelling systems in the assessment of pollution impact, and requests and expectations of associations for the protection of the environment.* A presentation of the *Guide for ecological monitoring*, who was at the time being drafted by *Cedre*, was also made by Michel Girin, Director.

SPEAKERS

Speakers were :

- Ms Louise Head, European Commission
- Mr Ezio Amato, ICRAM, Italy
- Mr Havard Prosser, National Assembly for Wales
- Dr Johannes Oelerich, Staatliches Umweltamt Schleswig, Germany
- Mr Jakob Lysholdt Sorensen, Aquatic Environmental Division, Storstrom County, Denmark
- Mr Luc Raoul, "Bretagne Vivante", France
- Ms Morgan Le Moigne, Ifremer-Ineris, France
- Dr Tosh Moller, ITOPF, UK
- Mr José Maura, IOPC Funds, UK
- Mr Loïc Gouguet, Office National des Forêts, France
- Mr Claude Figureau, Botanical Garden of the Town of Nantes, France
- Ms Chrystele Tissier, Ifremer, ARC-Ineris, France
- Ms Christine Jean, Observatoire des marées noires, France
- Messrs Michel Girin, Christophe Rousseau, Loïc Kerambrun and Franck Laruelle, *Cedre*, France

RESULTS

Several panel sessions were organised. Part of the results are exposed below. They reflect the general views of the participants on the presentations and discussions. They neither commit their employers, their countries or the Commission.

SESSION 1 - FIRST DAY

Cleanup, environmental restoration and ecological monitoring

Definition of cleanup

Clean-up is the process involving a range of techniques for removing the oil pollutant from the environment both in its original form and after weathering processes at sea and on the shoreline. A large range of techniques is available, requiring adaptation to any particular site and situation. The purpose of clean-up is to remove the oil from a polluted object or site, to the extent that it no longer represents a hazard to human health or the environment. Clean-up also requires that the cleaning is done by the best available techniques which minimise the environmental impacts and promote the natural restoration of the environment by achieving conditions where the natural ecology can re-establish itself to its previous population and diversity.

Clean-up programmes will be faced by the issue of defining methods and the level of cleaning that is required. There is no absolute standard for this because much depends on many parameters among which : nature and characteristics of pollutant, type and environmental sensitivity of shoreline, use and functions of the site, season and weather conditions, public interest and concern, stakeholders concern, country and traditions and scientific knowledge and public views concerning the pollutant

As a result it is difficult to set objective criteria applicable in any situation, although the IPIECA Guidelines are well accepted, because they are based on criteria, not quantitative standards. The philosophy is based on a flexible approach which must take account not only strictly scientific criteria but also a wider range of economic and social considerations. It is important that all groups involved agree on the criteria or guidelines which are to be used in

setting the objectives and methods for cleaning. But the minimum requirement is the protection of public health (including cleaners health). This includes compliance with existing standards.

Definition of environmental restoration

Environmental restoration is a set of voluntary measures to enhance natural recovery, including : precautionary measures to prevent further injury and pollution damage, implementation of techniques to facilitate natural recovery, and acceleration of recovery by implants and re-introductions.

It covers a range of follow-up measures protecting the damaged environment from further impact and promoting the recovery process. Restoration can include both natural and accelerated recovery methods using replanting and re-introduction of species. These techniques must be considered in cases where natural recovery is not likely to occur.

Both natural and accelerated recovery methods require a good understanding of habitats and the relationships between species that comprise that habitat. Without this clear understanding of the ecosystem and how it recovers from damage, there is the danger of making the situation worse in the long term, or changing the ecosystem to a different one which is not sustainable. It is therefore essential to have a technical appraisal and risk assessment with the aim of avoiding the creation of an artificial or diversely poor site, or genetic pollution. It is important to examine advantages and disadvantages if possible, although the quantitative assessment of environmental benefits is very difficult.

It must be recognised that environmental restoration is a long term process, which may last up a decade or more.

Definition of ecological monitoring

The purpose of ecological monitoring is the scientific measurement and evaluation of :

- the concentration of contaminant in the environment through appropriate indicators in order to assess the spatial distribution and temporal evolution of the impact and contamination (through combination with modelling) ;
- the success over time of the clean-up operations and environmental restoration operations (also to help the ongoing planning and implementation) ;
- the concentration of pollutant when distributed in the environment including air, water, sediments, food sources, fauna and flora, with the primary objective of protecting public health ;
- the impacts of contamination on biotopes, biological functions, populations, communities and biodiversity ;
- assessment of the recovery process, to better learn how the different parts of the environment respond after impacts, and to predict if and when they will return to the set targets.

When a pollution strikes, swift mobilisation of scientists is required for sampling, observing, and measuring, ideally before, and certainly during the periods when impacts occur. It is important that reference baseline data is already available to account for local variations in relation with other pollution sources or incidents. Baseline information on biota requires data over several years with a knowledge of the way that fluctuations occur over time, to assess natural trends (fluctuations can occur over seasons or years)

Limit between cleanup and environmental restoration

Clean-up is a process which interfaces seamlessly with restoration. They are integral processes where those involved with clean-up must work toward the overall goal of environmental restoration. It must not cross the threshold where damage becomes irreversible. Below this threshold, it is expected that restoration is possible. This requires a good knowledge of the environment.

The primary purpose of the clean-up is to protect and rehabilitate the environment. This includes measures to enhance natural recovery and/or prevent further damage to the environment. Measures need to be feasible and reasonable. They may include actions taken at some distance from damaged areas if it can be shown that those actions would enhance recovery of damaged components of the environment. Clean-up is part of environmental restoration even where damage from the pollutant is superimposed on damage resulting from previous degradation processes such as erosion of soil.

SESSION 2 - DAY TWO

Impact assessments and restoration in small, large and major spills

Summary of main conclusions :

- pre-spill reference baseline data is crucial and it must be continuously updated.
- in some cases, mechanical damage caused was unavoidable - alternatives were considered and not allowed.
- in some cases, environment showed it was tougher than originally thought and recovered well.
- designing contingency plans for environmental survey would be of interest.
- contribution of the shipper to the response operation was a major factor in the *Erika* spill.
- experts should be involved from the beginning in briefing clean-up personnel and the media.
- any physical damage to the environment generated by clean up operations must be justifiable on a site by site basis.
- authorities must be ready to justify on scientific basis the ecological soundness of a leave-alone approach.
- each spill is different. Quantity of pollutant is not the most critical aspect. What is more important is spill location, the type of pollutant and its potential for damage, the characteristics of the impacted area, the season, etc.

ITOPF expressed the opinion that baseline surveys are limited in effectiveness as each incident is unique. Application of short term monitoring from related sites and similar spills is more useful. Would like to see better focused monitoring and post-spill studies (e.g. Sea Empress).

General agreement was achieved on the interest of harmonisation of surveying and monitoring protocols on a European level. Pre-spill surveys must include the assimilation of data that will be required should a spill happen. Nature of these data should be specified in the protocols.

European references concerning rules, regulations, guidelines, technical notes, files

	CLEANUP	RESTORATION	MONITORING
BELGIUM	Law 20/1/1999 (BS 12/3/99) « wet MMM law »		
DENMARK	Law 476/30-6-93 Regulation 607/19-7-99 Regulation 992/14-11-00 National Contingency plan		
FRANCE	Polmar Instruction	<i>Cedre</i> studies	<i>Cedre</i> Guide
GERMANY	Water frame law (FRG) Water laws of coastal states Contingency plans of FRG and coastal states Information System (VPS) Agreement of the FRG and 5 coastal states 1995	Same as for cleanup	Agreement between FRG and coastal States.
IRELAND	Sea Pollution Act90 Wreck & Salvage Act92 Oil Pollution Act 92 Contingency plans and IOPC Funds Claims manuals IPIECA manuals		
ITALY	Law 41/82 Law 22/97 National contingency plan Guide response at sea Law 979/82	Law 349/86 Law 471/99 Guide ICRAM Law 979/82	Law 979/82 Law 152/99 Guide ICRAM Haven Report
SCOTLAND	Law MCA/Local Authority		
SPAIN	Law National Contingency plan		Monitoring network of contaminants(e.g. metal chlorinated compounds, PAHs) in coastal areas
SWEDEN	Environmental code 99 Swedish rescue service Act 87 National Contingency Plan		
WALES	-UK legislation -Merchant Shipping Act 1995 -Merchant Shipping and Maritime Security Act 1997 -Merchant shipping (OPRC Convention) regulations 1998 Local Government Act1992 National Cont. Plan 2000 Scientific, Technical & Operational (STOP) Notes See : www.mcagency.org.uk	Same as for cleanup	Same as for cleanup
IMO	OPRC Contingency Plan		
IPIECA	Oil Spill Report series (for clean up and response) Oil Spill Report SeriesVol10 on NEBA See www.ipieca.org		

ITOPF	Technical information papers See:www.itopf.com	IOPC claims of compensation guide	
EU	EU contingency plan Community Information System Task force		

SESSION 3 - DAY THREE

Restoration : funding and techniques

The ITOPF presentation confirmed that the Federation acknowledges the existing possibility for funding sound impact studies and reasonable reinstatement measures by P&I Clubs and the IOPC Fund. Post spill studies should be encouraged to plan relevant reinstatement measures with a view of providing practical data and meet the objectives set by the international conventions.

The IOPCF presentation specified under which conditions impact studies and reinstatement measures can be reimbursed under the Conventions. Measures undertaken should be reasonable, cost should not be disproportionate as compared to expected results and techniques should be adapted according to chances of success. Furthermore, proposals for suitable amendments can be proposed by member countries through the ad-hoc Intersessional Working Group.

The presentation of reinstatement techniques by *Cedre* showed that a variety of restoration projects have been implemented over some countries, particularly the USA and Australia, but few examples were available for Europe. The restoration operations underway and planned in the aftermath of the *Erika* incident are financed by the French Polmar Fund, on national standards.

Discussion

The discussion showed that an essential point in compensability matters is the accepted limits of “reasonable”. It was recognised that any delegation at the Fund is fully entitled to make proposals to review the interpretation of the Conventions and that the accepted interpretation of any term is the result of a democratic process. It is up to each technical and scientific community to present proposals through its Governmental delegation. French participants were of the opinion that they could jointly draft such a white paper under the leadership of *Cedre*, to be proposed to the French delegation at the IOPC Funds

The Fund members interpretation of “reasonable” does not prevent a country from undertaking actions failing to meet reasonableness as admitted by the International System. But those actions may not be compensated.

It was considered of paramount importance that cleanup measures would take into account, right from the start, the views of multidisciplinary teams on preliminary diagnostics and existing baseline data, to avoid additional damage caused by cleanup and facilitate future, ecologically justified reinstatement operations.

There was general agreement that sound reinstatement evidently encompasses no less than the restoration of a natural balance of species, comparable to the pre-spill state.

During implementation, there is a need for continuous monitoring of reinstatement measures, in relation with the predefined objectives.

The presentations on restoration actions implemented on the French coastline impacted by the *Erika*, highlighted techniques of evident interest, likely to meet the criteria of the International Compensation System.

The presentation on environmental risk assessment modelling opened aspects of interest concerning pollution other than oil, which may have to be considered in the definition of measures for ecological survey and restoration in chemical pollution.

The presentation by the Environmental Associations showed the importance of exchanges of views between all parties on environmental aspects, particularly as regards proper management during cleanup of natural resources such as sand collected on beaches. It was stressed that thorough and honest feed-back of experience by all parties involved is essential for improved response to future spills.

Discussion

The final discussion highlighted that sufficient experience of reinstatement measures, in particular from the *Haven*, *Erika*, *Baltic Carrier*, *Sea Empress* and *Pallas* incidents reviewed in this workshop, will soon exist in some European countries for national guidelines to be worked out. The French participants agreed that *Cedre* could take the lead of such national guidelines, with participation of all concerned.

The discussion also showed that dissemination of national experience among the different European countries is indeed profitable to all. The participants turned to European Management Committee for Marine Pollution for support on translation of national feed-back of experience reports and on common experimentation on restoration. It would of course be the responsibility of the national delegations to present specific projects for validation by the Committee.

The Community Information System appeared as a relevant tool for efficient dissemination of national experience.