



WORKSHOP
grant agreement n°07.030900/2006/448297/SUB/A3



Pollutant Monitoring
and
Ecological Impact Assessment
following accidental oil or other chemical spills
in marine waters

Leader:

Cedre - France

Partners:

UBO – University of Western Brittany - France

IRIS - International Research Institute of Stavanger - Norway

The University of the Basque Country - Spain

CALM - Coastal Assessment Liaison & monitoring – Pembrokeshire, UK

Agenda and structure: a 3 day-workshop

Held on 9 - 11 October 2007 at *Cedre*, in Brest.

- **Day 1 : Pollutant Monitoring**
2 lectures (morning) 2 lectures (afternoon) + 2 round tables > recommendations
- **Day 2 : Ecological Impact Assessment**
3 introductory lectures + 2 round tables > recommendations
- **Day 3 : validation of a conclusive document**
Recommendations / comparison and complementary

Day 1: POLLUTANT MONITORING

Context during...

Which procedure to use for evaluating if marine organisms could be impacted?

Which biological and ecotoxicological indicators could be used to assess the environmental status post-spill?

Previous Cedre actions: 2 EC-Funded projects + **RESPIL**

HASREP (2005) => Task 3 (leader TNO): Investigation on the use of mussels as a bio-indicator to spills at sea

Sensitivity
valve movement
mussels

≈

Chemical toxicity
(LC₅₀ GESAMP B)



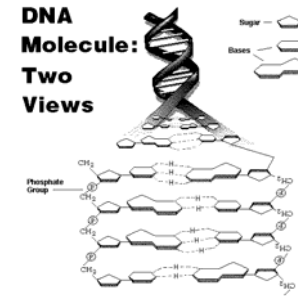
Previous Cedre actions...

PRAGMA (2006) => A pragmatic and integrated approach for the evaluation of environmental impact of oil and chemical spilled at sea.

Propose a pragmating monitoring approach based on simple and cost-effective analytical tools:



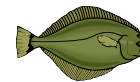
- Biomarker
- Bioassay
- Biosensors



Selection of a panel of biological indicators for



and



Enzymes
DNA



Cell



Tissue & organs



Individual

Day one

To define a minimum set of recommendations and procedures, **unanimously accepted**, enabling to monitor the effect / impact of a pollutant on marine organisms.

Day 2: ECOLOGICAL IMPACT ASSESSMENT

Context

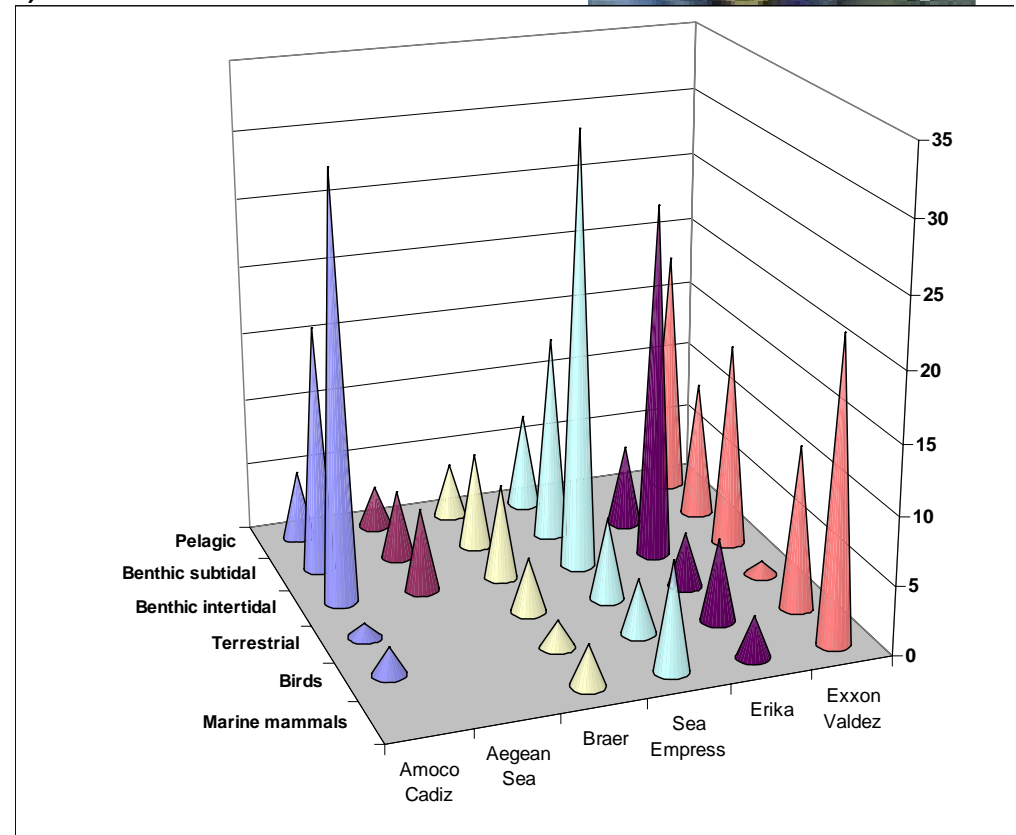
Which procedure to use for implementing an EIA after an accidental spill (oil or chemical)?



Previous Cedre actions

- a detailed literature analysis (6 oil spills)
+ an international seminar (oct. 2005)
- an EC-Funded seminar held in July 2005 in Vigo, Spain, co-organized with CETMAR

It appears that targets and procedures are not always the same, even for similar conditions (oil and environment).



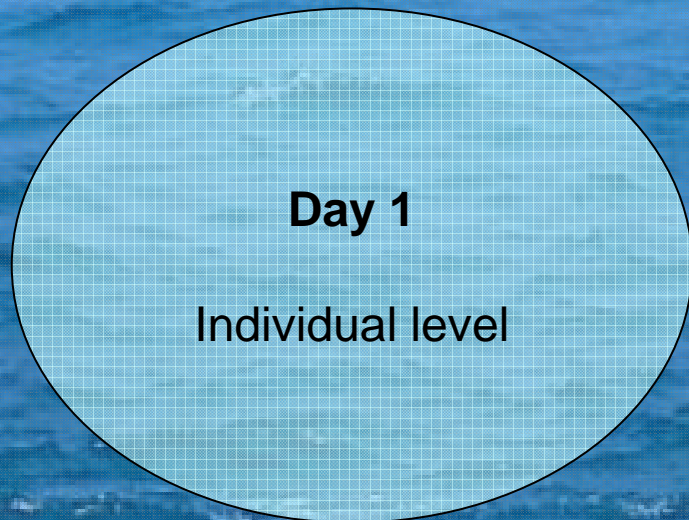
ECOLOGICAL IMPACT ASSESSMENT

A need felt for more homogeneous approaches.

			TARGETS	Amoco Cadiz	Sea Empress	Braer	Aegean sea	Erika	Exxon Valdez	
SUBTIDAL	benthos	Rocky	Meiofauna	X						
			Macrofauna	X	X	X	X	X	X	
			Thallophytes	X	X	X				
			Demersal fish						X	
		Sediment	Microphytobenthos	X						
			Bacteria				X			
			Microfauna							X
			Meiofauna	X		X				X
			Macrofauna	X	X	X	X			X
			HC/sediment dosages	X	X	X	X	X	X	X
		Demersal fish	X	X	X		X	X		
TIDAL	benthos	Rocky	Lichens (hygro-hydrohalines)	X	X	X		X		
			Meiofauna	X		X				
			Macrofauna	X	X	X	X	X	X	
			Microphytobenthos		X					
			Residual oil	X					X	
		Thallophytes	X	X	X		X	X		
		Sediment	Microphytobenthos	X	X					
			Microflora (bacteria, fungi)	X					X	
			Microfauna						X	
			Meiofauna	X	X	X	X			X
			Macrofauna	X	X	X	X	X	X	X
			HC/sediment dosages	X	X	X			X	X
			Phanerogames (sea grass beds)		X					
			Strand line fauna		X					
		Marshes	Phanerogames (Halophytes)	X	X				X	
			Bacteria and microphyte communities	X						

Day two

identification of relevant monitoring protocols for one benthic domain: intertidal or subtidal zone? On rocks or in sediments?



+



Day 3

How to combine in order to identify an **operational guidelines** for setting up an effective monitoring / impact assessment program

Acknowledgements



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Future?

