

DECISION MAKING on the use of dispersant "How to decide"

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Interspill 2015 - Science workshops - Dispersant Breakthrough

What is the impact of chemical dispersion?

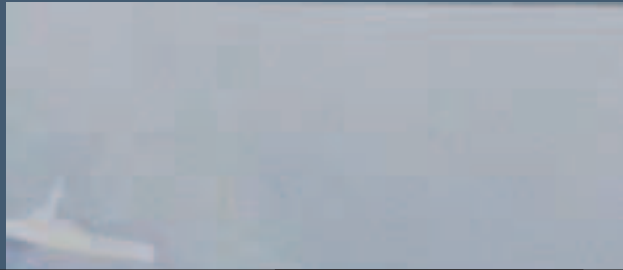
Without dispersant
Surface slick



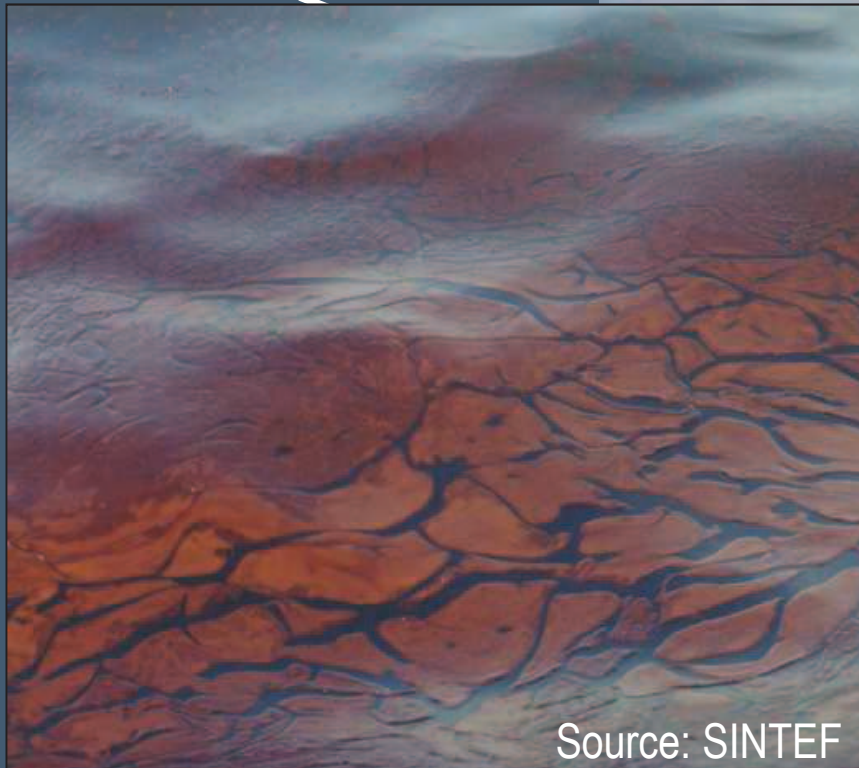
With dispersant
suspended plume of oil

What is the impact of chemical dispersion?

Without dispersant
Surface slick



With dispersant
suspended plume of oil



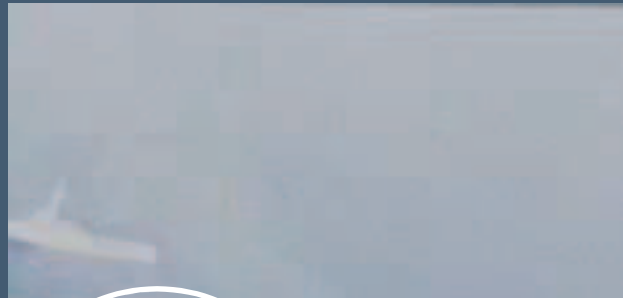
Source: SINTEF



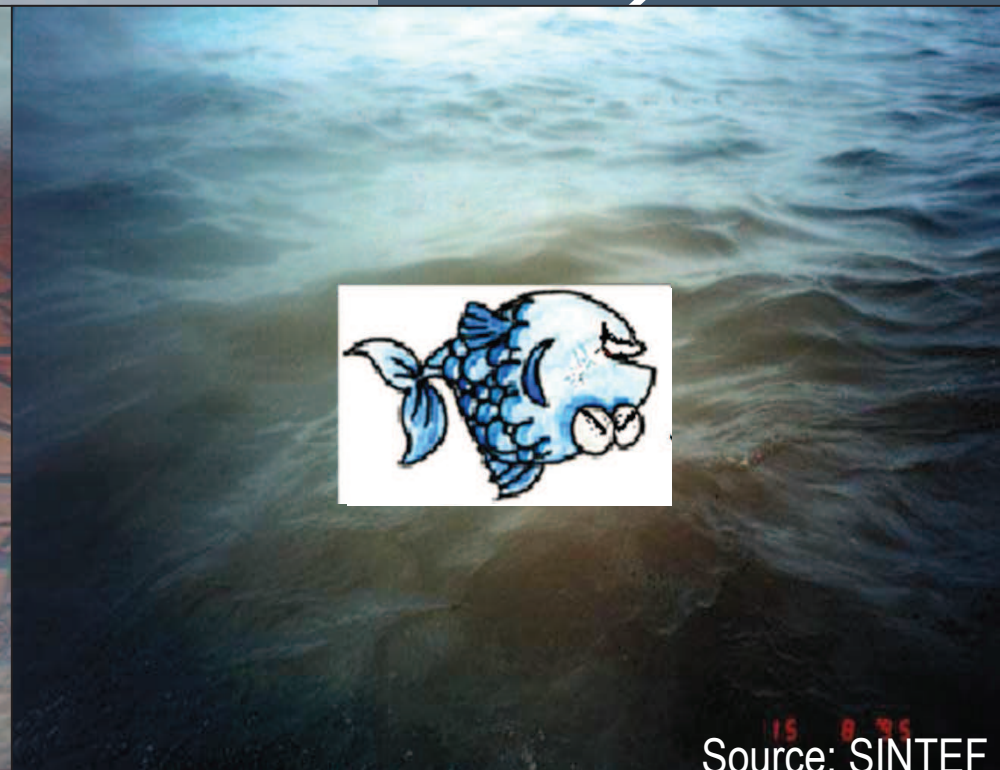
15 8 35
Source: SINTEF

What is the impact of chemical dispersion?

Without dispersant
Surface slick



With dispersant
suspended plume of oil



What is the impact of chemical dispersion?

Without dispersant
Surface slick
Drift ashore

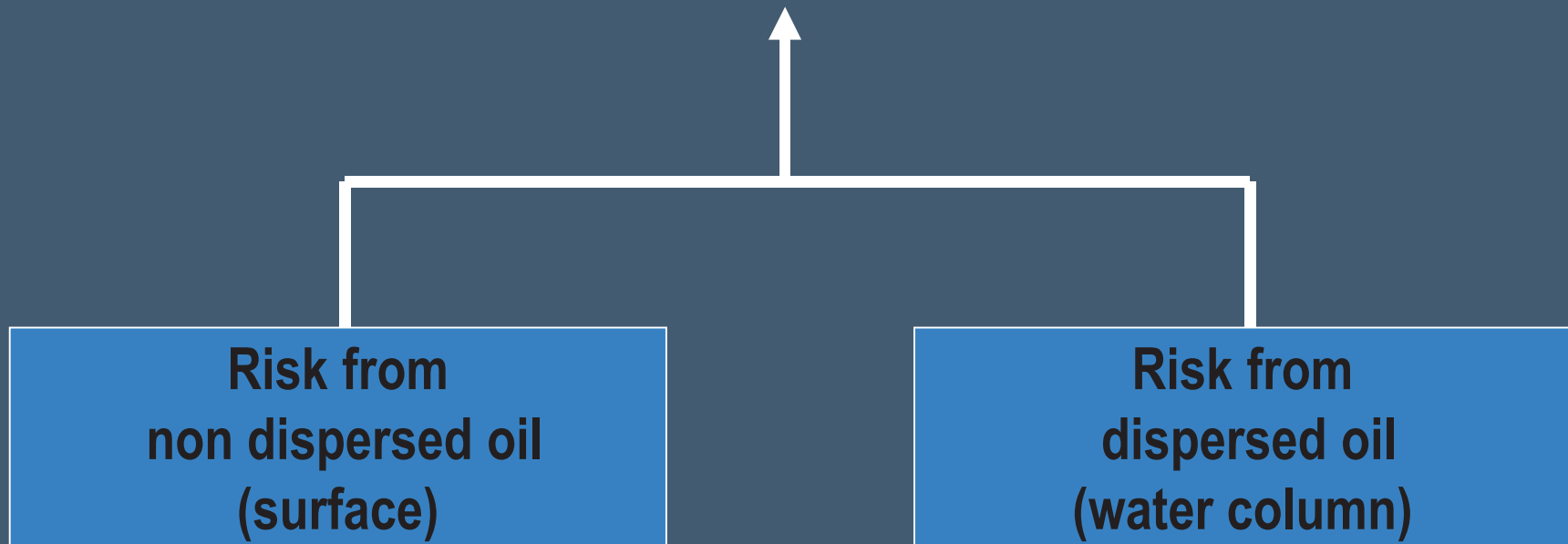


With dispersant
suspended plume of oil
Remains offshore



The NEBA

Net Environmental Benefit Analysis



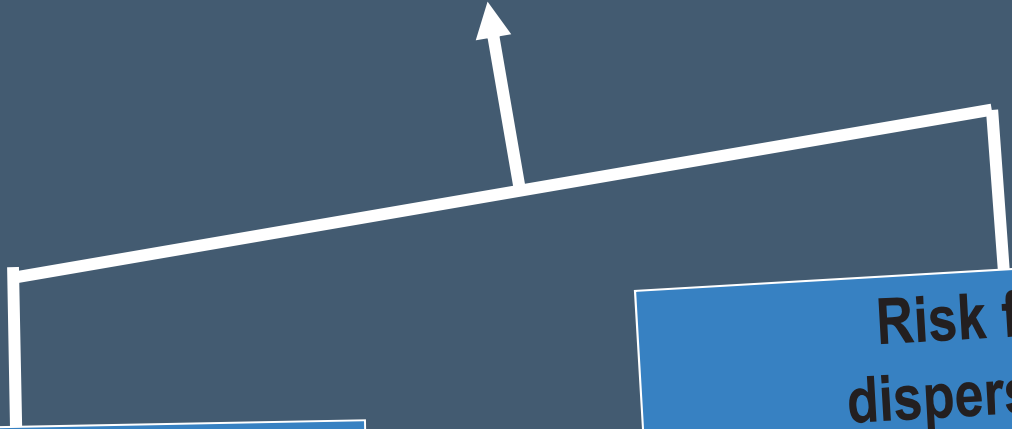
The NEBA

Net Environmental Benefit Analysis

Dispersion appropriate

Risk from
non dispersed oil
(surface)

Risk from
dispersed oil
(water column)



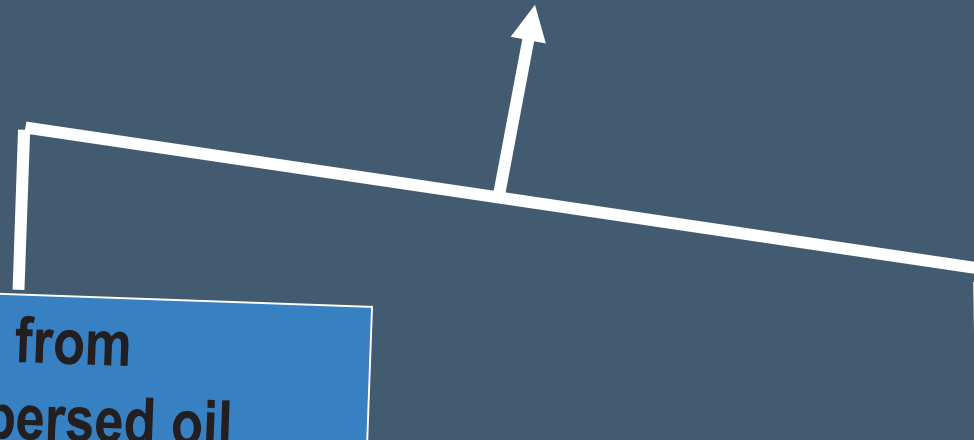
The NEBA

Net Environmental Benefit Analysis

Dispersion not appropriate

**Risk from
non dispersed oil
(surface)**

**Risk from
dispersed oil
(water column)**



The NEBA

Net Environmental Benefit Analysis

NEBA process
(Comparison with and without dispersant)

Forecast oil drift

when dispersed
(water column)

when not dispersed
(surface oil)

List the sensitive/valuable resources of concern

(due to dispersed oil)

(due to surface oil)

Assess the possible impacts on resources

(from surface oil) (from dispersed oil)

Decide on the response option
which preserves the most important resources

Scientific methods to study toxicity

Toxicity tests at laboratory or mesoscale levels



Impossibility of completing a real impact assessment and of making a pertinent comparison with dispersant and without dispersant

What is pertinent:

The **medium-long term impact** (difficult to assess)

The **impact at the population level** (difficult to assess)

An impossible comparison:

toxicity in the water column species (*dispersed*)
and smothering of coastal species (*non dispersed*)



Impossibility of completing a real impact assessment and of making a pertinent comparison with dispersant and without dispersant



Impact (difficult to assess)

Baseline level (difficult to assess)








A pragmatic approach to decide on the use of dispersant

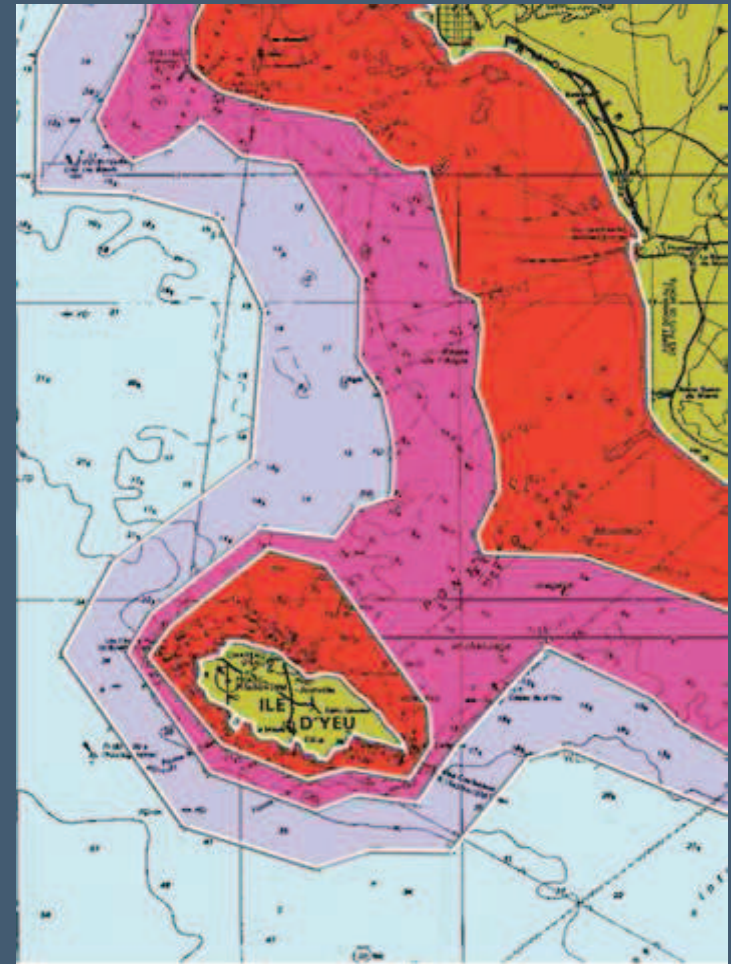
★ Determining the exposure conditions for which there is no impact, no observed effect.

➔ dilution conditions

★ Geographical boundaries where Dispersants can be use safely

Limites de libre utilisation des dispersants en France

	Zone terrestre où la dispersion est proscrite
	Zone côtière où la dispersion est a priori proscrite
	Zone où il est possible de disperser jusqu'à 10 tonnes
	Zone où il est possible de disperser jusqu'à 100 tonnes
	Zone où il est possible de disperser jusqu'à 1000 tonnes



In real incidents, impact of dispersants much less severe than feared

- Sea Empress (UK 1996)
440 t. of dispersants applied
- => little impact <<<< benefit from using dispersant



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- Deepwater Horizon (US-2010)

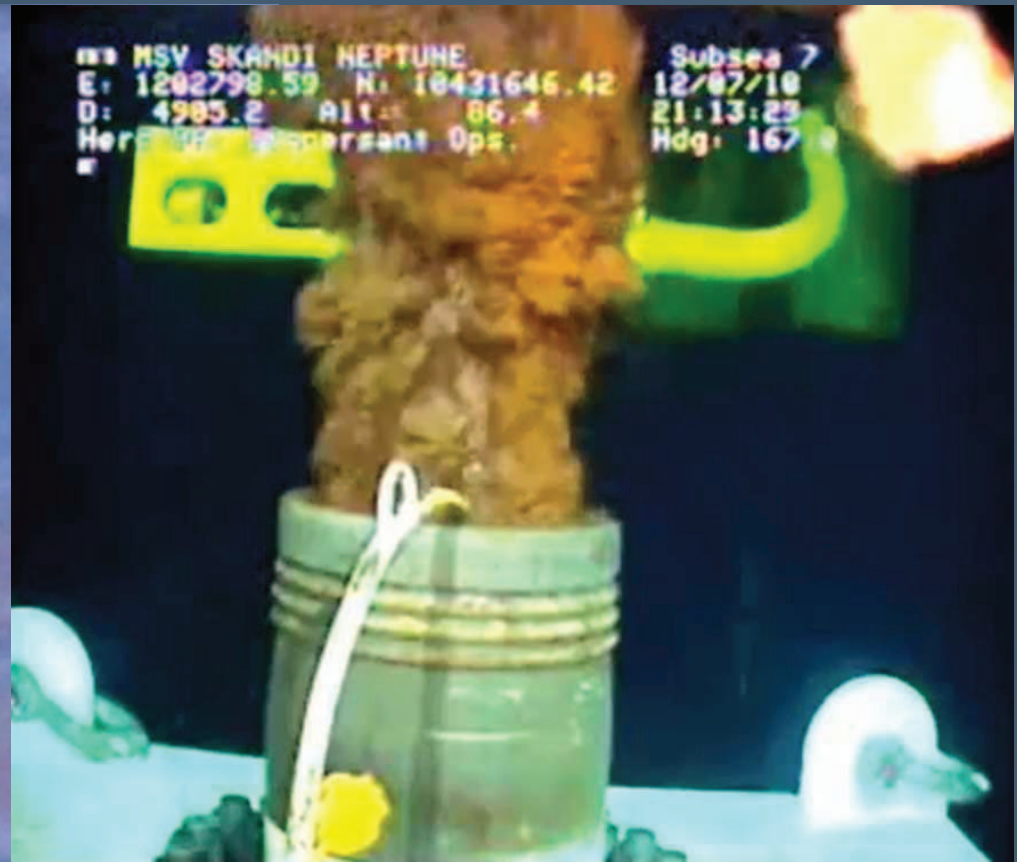
7000 t dispersant applied



In real incidents, impact of dispersants much less severe than feared

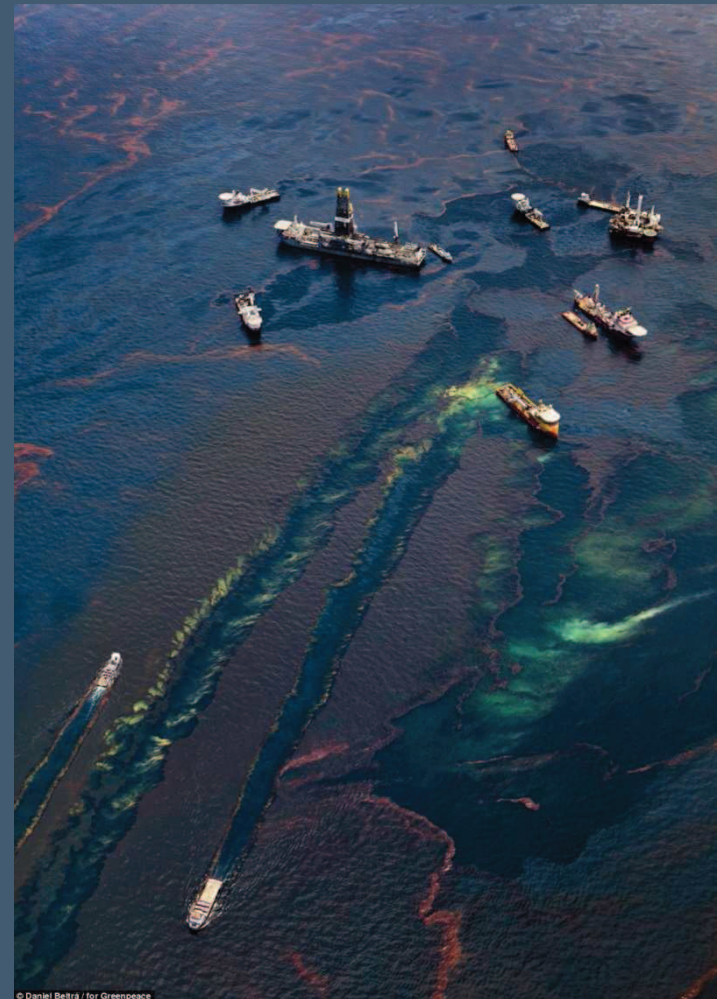
- Deepwater Horizon (US-2010)

7000 t dispersant applied



In real incidents, impact of dispersants much less severe than feared

- Deepwater Horizon (US-2010)
7000 t dispersant applied
- Safety of the wellhead location for team in charge of killing the blow-out



Conclusion

Decision making on the use of dispersant:

- A decision between knowledge and empiricism
- A mixture of reasonable and scientific



Thank you