



THE ROLE OF DISPERSANT PRE-APPROVALS IN GLOBAL GOOD PRACTICE

DR ANNABELLE NICOLAS-KOPEC, TECHNICAL ADVISER

New Delhi Seminar, 20th November 2013

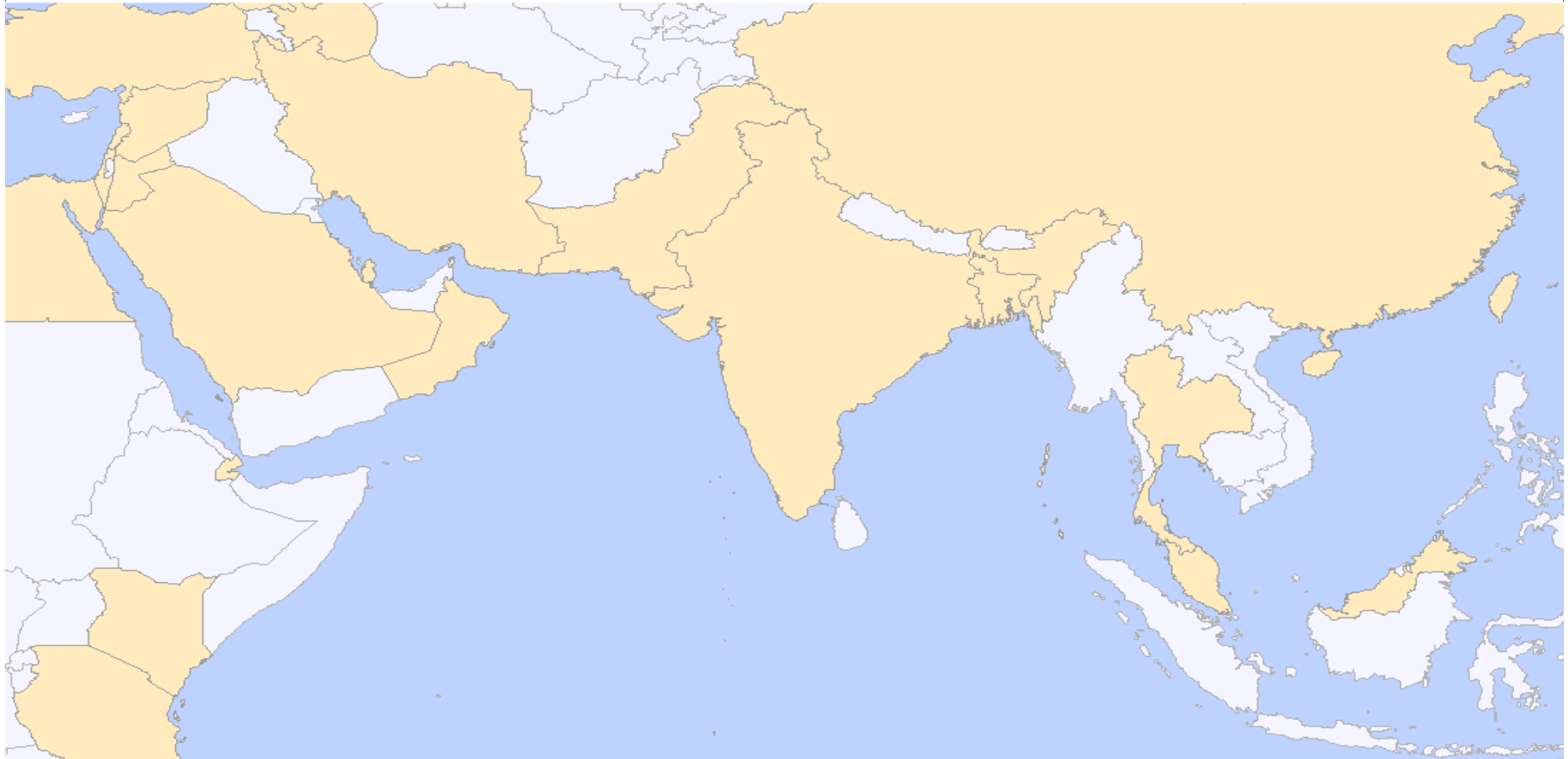


WHY PLAN FOR SPILL RESPONSE?



IN PEACE TIME IT ALLOWS FOR...

- Careful consideration of approaches
- Identification & prioritisation of sites
- Strategic allocation of resources
- Resolution of stakeholder conflicts
- Rapid and effective decision-making

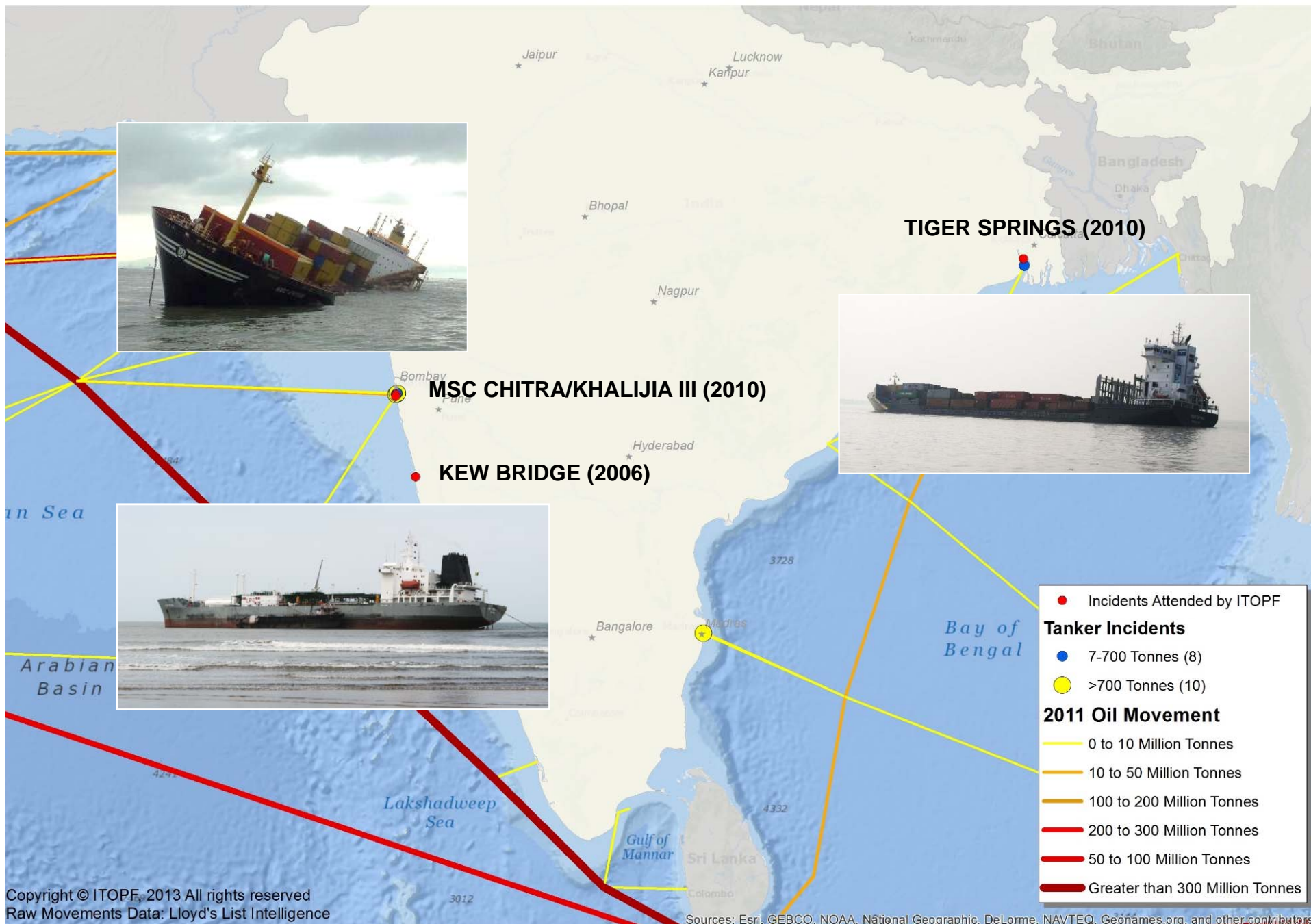


- Knowledge of tanker routes
- Volume & types of oil transported
- Navigational & Environmental hazards
- State of preparedness



- Spill statistics may allow a quantitative analysis of trends
- An assessment can be made of likely sources of oil spills
- Details gathered on most frequent oil types traded/carried
- Potential quantities spilled (quantities handled/vessel DWT)
- Scenarios (loading/offloading, bunkering, navigational hazards)

RISK ASSESSMENT: ARABIAN SEA & BAY OF BENGAL



LARGE-SCALE DISPERSANT USE

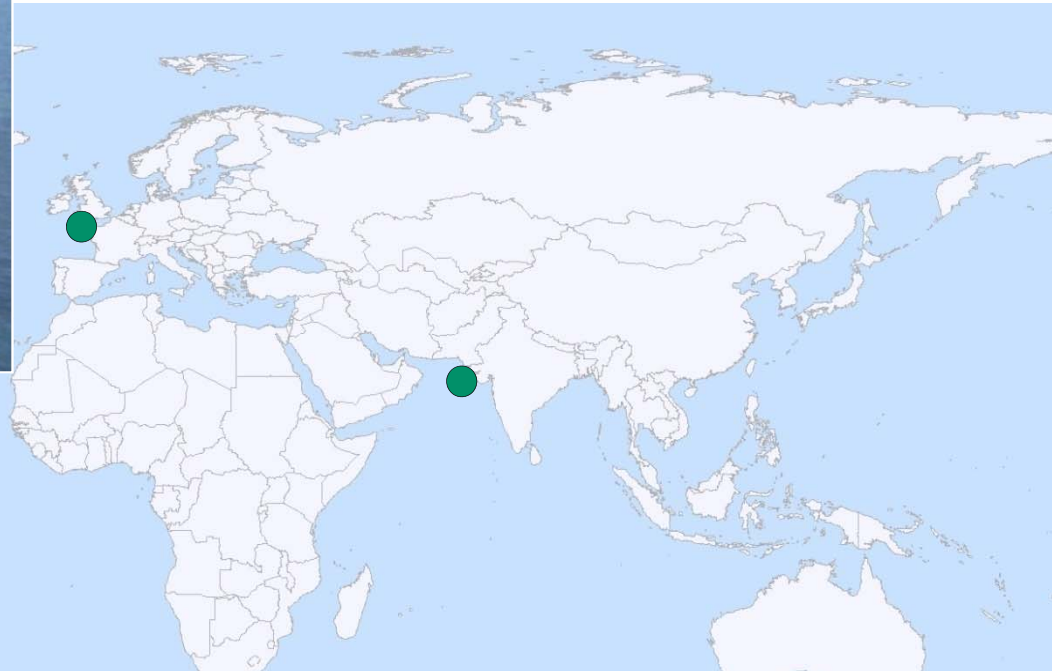


- Dispersants used at many small/medium-scale incidents but not well documented
- Large-scale spills are very rare and large-scale dispersant use is even more rare
- Not used during AMOCO CADIZ response due to proximity of vessel to shore
- Not used on a large scale during EXXON VALDEZ response – initial ‘test sprays’
- Not used during ERIKA or PRESTIGE spill responses (and would not have worked)
- Largest-scale response to date was to DEEPWATER HORIZON (6,800 MT applied)

CASE STUDIES



SEA EMPRESS, UK, 1996



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TASMAN SPIRIT, Pakistan, 2003

SEA EMPRESS – PEMBROKESHIRE, UK (15 FEB 1996)



- Full-scale aerial spraying operation for 8 days
- UK government & OSRO aircraft utilised
- 446 MT dispersant applied
(7 different types)

All dispersants pre-approved for application



- Large oil spill, highly sensitive area and dispersant was the main response strategy
- **Dispersant policy in place in the contingency planning**
- Massive shoreline clean-up operation was avoided
- Overall environmental damages significantly reduced
- Mitigation of spill impacts due dispersant application

Dispersants reduced shoreline impact by an estimated 17,000 tonnes of crude

TASMAN SPIRIT – KARACHI, PAKISTAN (27 JUL 2003)



- Cargo: 67,800 MT Iranian Light crude
- Grounded at entrance to Karachi Port
- Estimated loss of 30,000 MT oil cargo





ADVANTAGES

- Could reduce risk of impact on mangroves
- Likely to accelerate breakdown of oil
- Weather conditions ideal for dispersion

DISADVANTAGES

- Increased risk of impact on seabed
- Oil may become incorporated in sediment
- Nearshore fisheries may be at higher risk



- Pakistan's first major spill - **no NCP or equipment**
- Very large oil spill contained within a relatively small area
- Oil amenable to dispersion but in shallow nearshore waters
- Strategic decision to spray based on assessment of benefits & risks
- Rapid mobilisation of Tier III OSRO likely to have mitigated impacts
- Government approval for spraying granted within 5 hrs

IMO GUIDELINES ON DISPERSANT USE

- Part I: Basic Information on Dispersants and their Application
- **Part II: Template for National Policy for the Use of Dispersants**
- Part III: Operational and technical sheets for Surface Application of Dispersants

Part II: Generic template that each national authorities can fill with the country specific details.

It considers each task to be completed in the use of chemical dispersants, in order to establish a National Contingency Plan for Chemical Dispersion.

AIMS: to assist competent authorities to define, develop, and revise a national policy document for the use of dispersant.



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TECHNICAL GROUP OF THE MEPC ON
OPRC-HNS
14th session
Agenda item 3

OPRC-HNS/TG 14/3/2
8 August 2012
ENGLISH ONLY

MANUALS AND GUIDANCE DOCUMENTS

Updating of the IMO Dispersant Guidelines

Submitted by France

SUMMARY

Executive summary: This document provides information on the progress made in updating of the IMO Dispersant Guidelines

Strategic direction: 7.1

High-level action: 7.1.2

Planned output: 7.1.2.11

Action to be taken: Paragraph 11

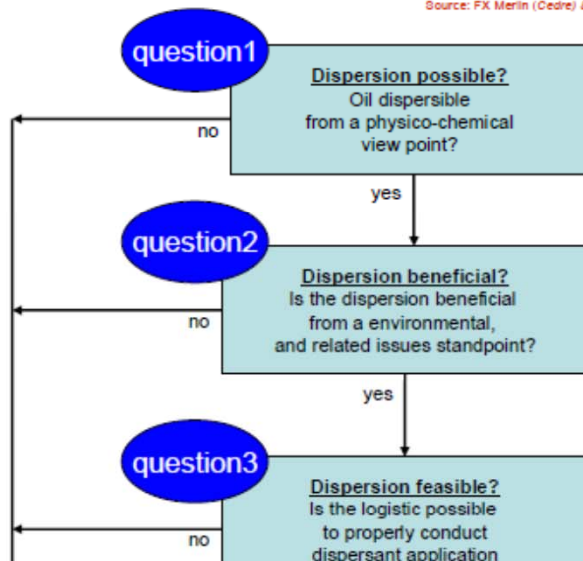
IMO DISPERSANT GUIDELINES

PART II

TEMPLATE FOR NATIONAL POLICY FOR THE USE OF DISPERSANTS

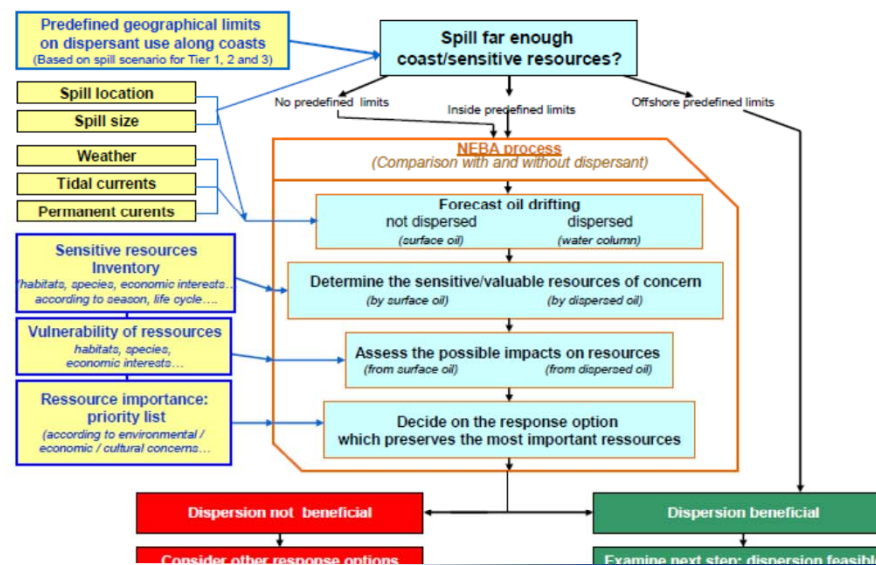
DECISION MAKING PROCESS

Source: FX Merlin (Cedre) & Dr Ken Lee (COOGER)



question2 Dispersion beneficial from an environmental / economic.... viewpoint?

Source: FX Merlin (Cedre) & Dr Ken Lee (COOGER)



List what should be prepared in the planning stage:

- Scientific (e.g. dispersibility studies, principles for NEBA analysis)
- Technical (e.g. selection of product and equipment)
- Logistical (e.g. pre-authorisation for flight, monitoring) issues.

Emphasis on identification of the decision making body ahead of a spill and Net Environmental Benefit Analysis (NEBA), on Annex 1

- Annex 2: Decision making process for dispersant application

DISPERSANT POLICY COMPONENTS- PRE-IDENTIFICATION



1. DISPERSANT APPROVED FOR USE
2. LOCATION WHERE DISPERSANT CAN/CANNOT BE USED
 - Net environmental benefit analysis (NEBA)
 - Sensitive resources threatened
3. CONDITIONS FOR USE
 - Oil type
 - Water depth
 - Distance from the shore
 - Currents & tides (movement of the dispersed oil plume)
 - Weather conditions (safety & efficiency of dispersion)



Dispersant Use Prohibited:	
	April - September
	Year round
	October - February

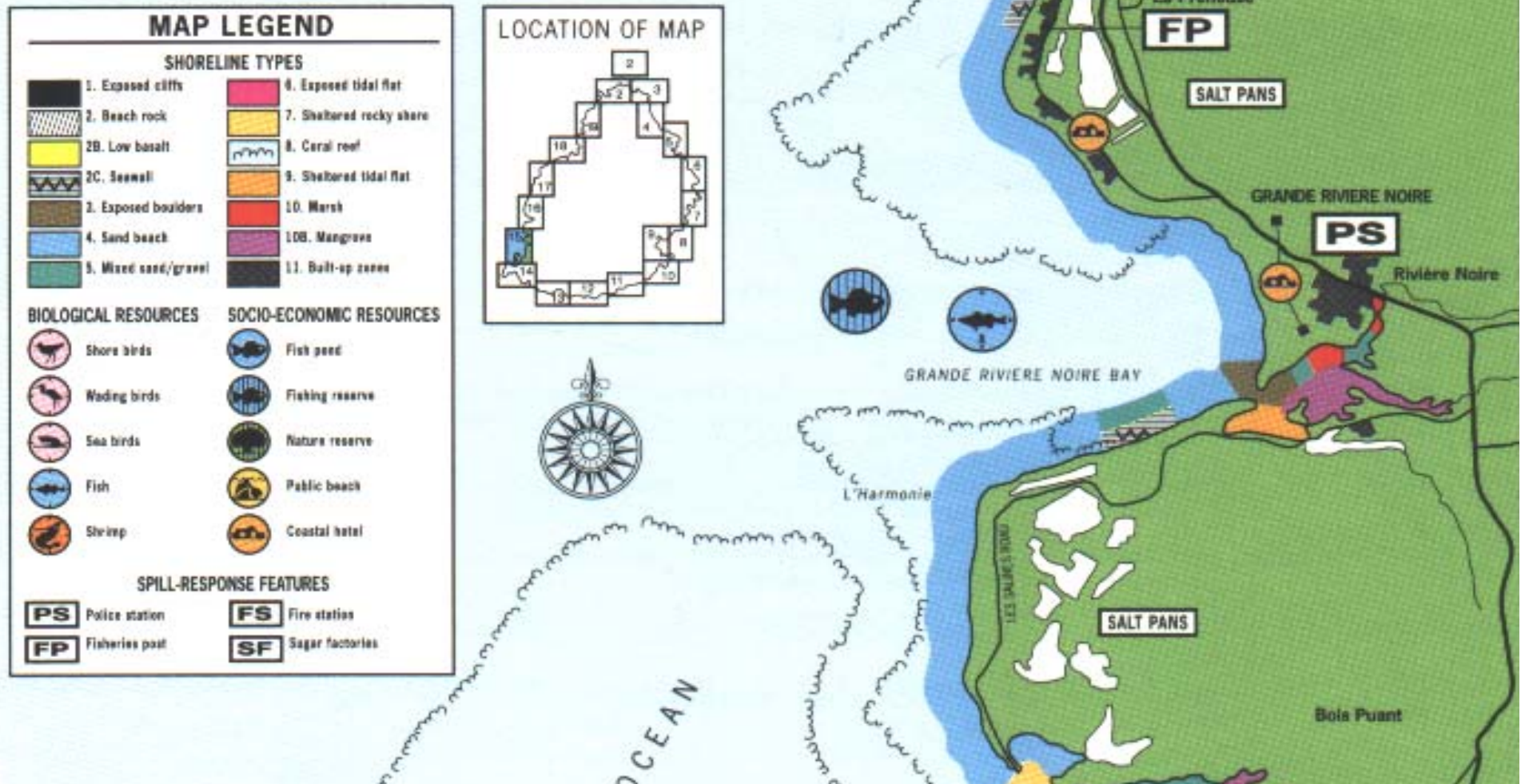
Legend					
	Pelican Island		Wintering Ducks		Nursery
	Nursery		Fish		

1. DISPERSANTS APPROVED FOR USE



- Information on prior approvals should be in NCP for products which have been specifically approved by Government
- Products must satisfy two criteria: **EFFECTIVENESS AND TOXICITY**
- **Effectiveness test:** proportion of test oil that is dispersed and retained in a water sample
- **Toxicity test:** to ensure that the relative toxicity of an oil: dispersant mixture is no greater than toxicity of oil alone

2. APPROVED LOCATIONS



- NET ENVIRONMENTAL BENEFIT ANALYSIS
 - ... balancing the advantages & disadvantages of a given strategy
- SENSITIVITY MAPPING

3. APPROVED SITUATIONS



- IN OPEN SEA
 - High concentrations are unlikely to persist for more than a few hours
 - No significant biological effects
- IN SHALLOW WATERS close to the shore
 - High concentrations may persist for long periods
 - Observable biological effects
- IMO guidelines on dispersant use : *Dispersants acceptable in non-sensitive waters deeper than 10 m (30 ft)*



Government agencies
Fishermen
Food health agencies



Environment groups
NGOs

STAKEHOLDER INFLUENCE?

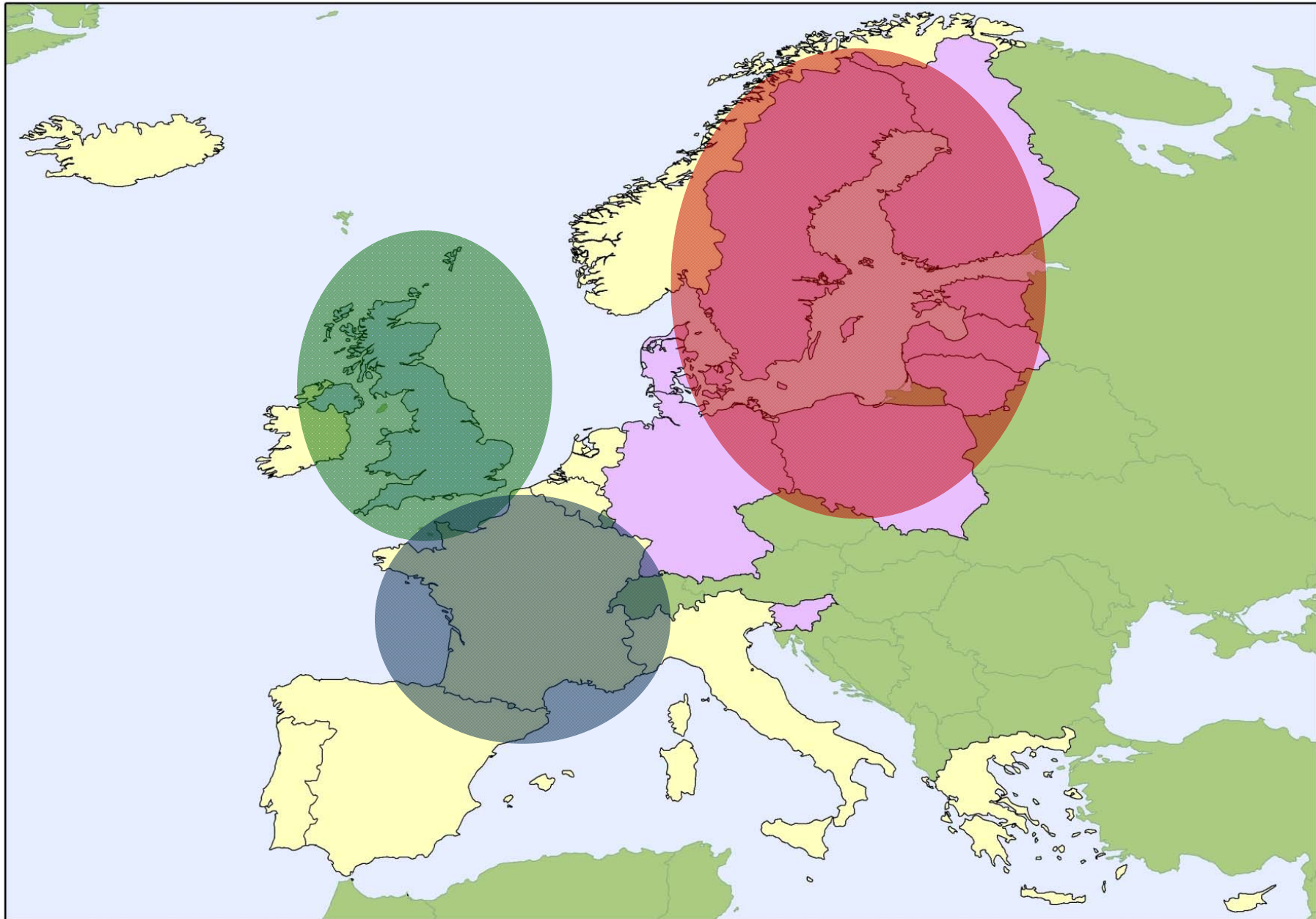





Tourism agencies
Public



Industry

POLICY EXAMPLES: EUROPE



 Dispersant use is a primary response option  Dispersant use is a secondary response option  Dispersant use is rarely or never used

POLICY EXAMPLES: UNITED KINGDOM



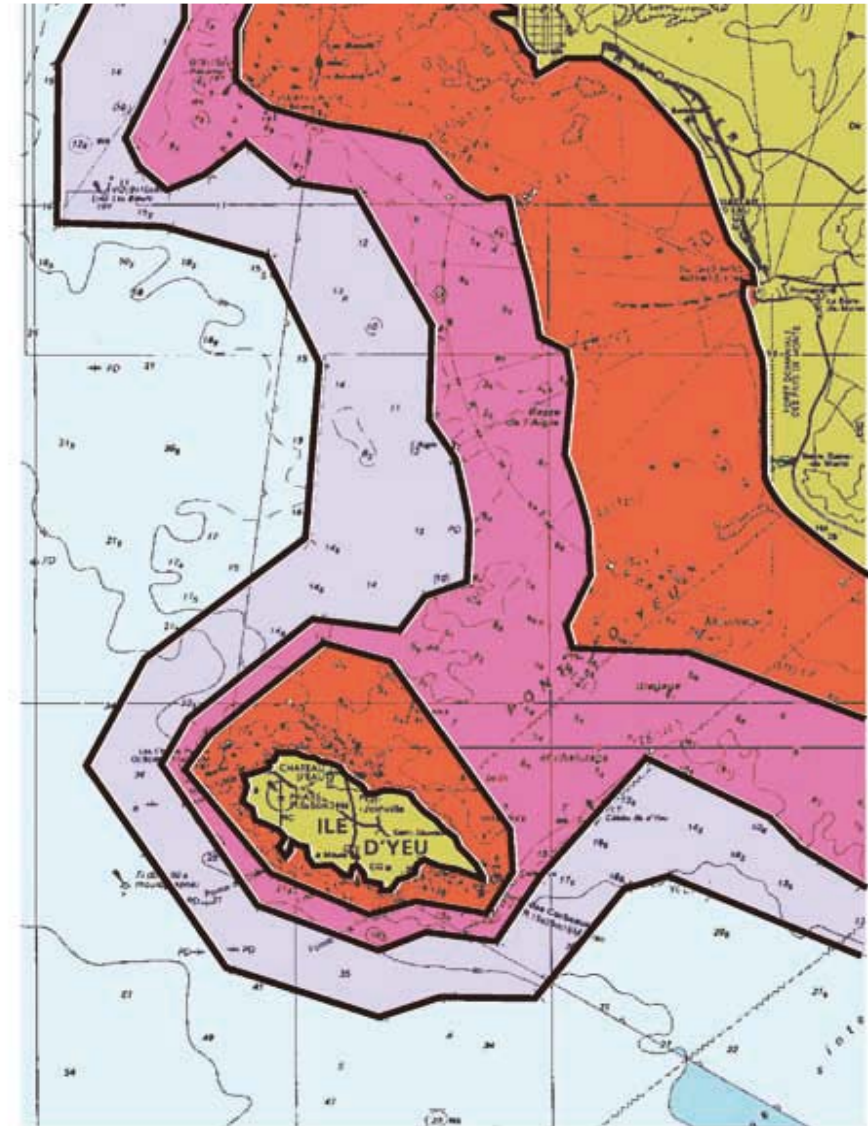
- Dispersant is primary mode of response
- Product approval by licensing authority
 - Efficacy test (must be $\geq 60\%$ effective)
 - Sea toxicity test: oil + dispersant \leq oil alone
 - Shore toxicity test: dispersant \leq oil alone
- Application in deep offshore waters
 - $>20\text{m}$ depth and $>1\text{NM}$ from 20m isobath
 - MCA 'standing approval' for dispersant use
 - Licensing authorities encourage consultation
- Application in shallow & coastal waters
 - $<20\text{m}$ depth or $<1\text{NM}$ from 20m isobath
 - Clearance needed from licensing authority
- Aerial application following initial test
- $1,400\text{m}^3$ stockpile throughout UK
- Potential to disperse 84,000 MT oil



POLICY EXAMPLES: FRANCE

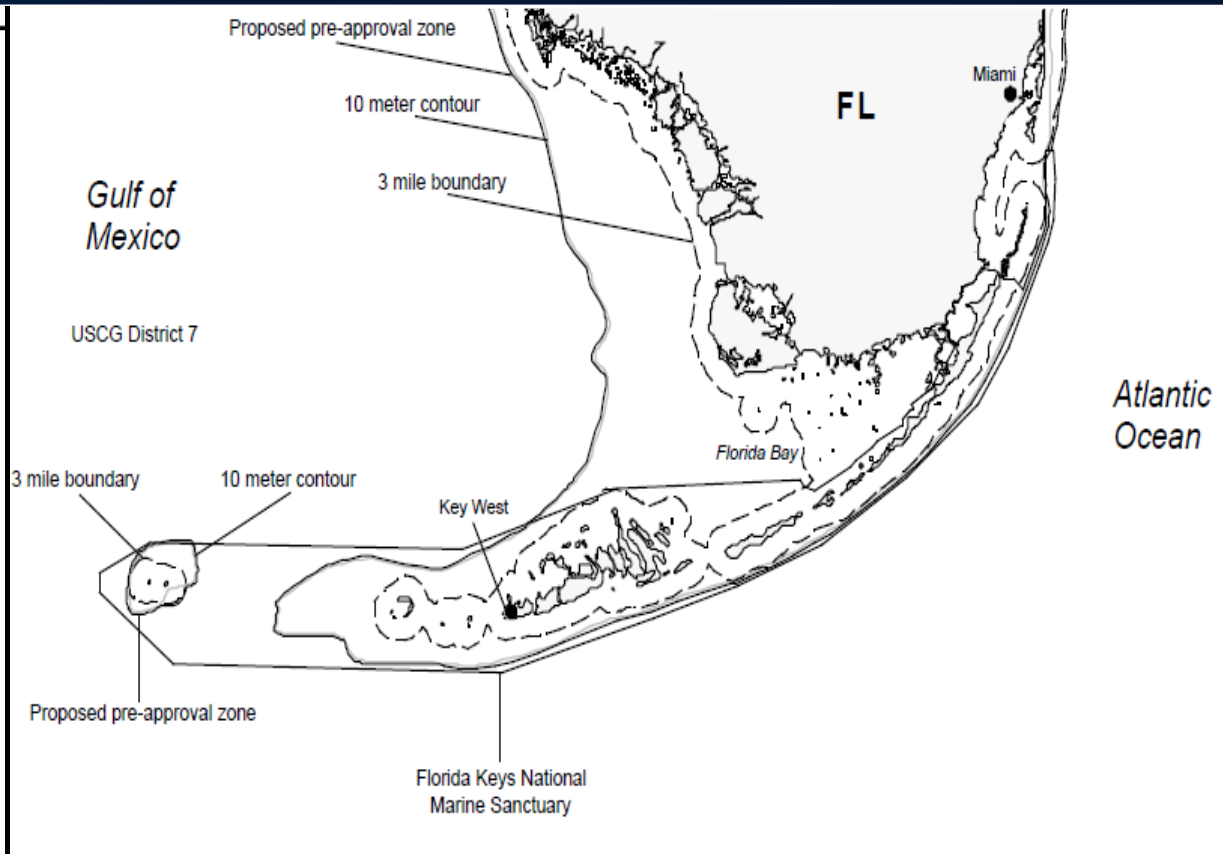
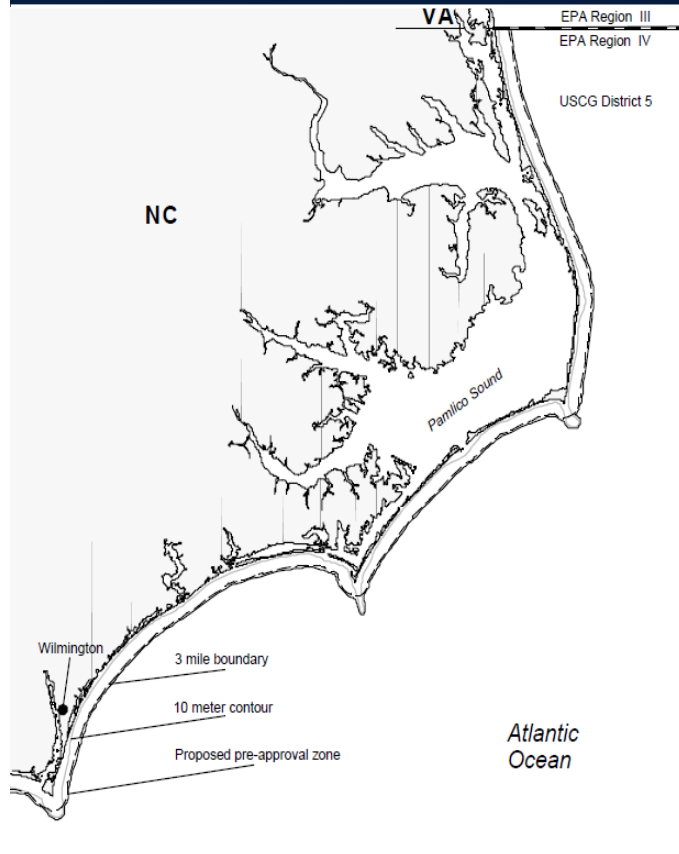


- Dispersant is considered as an option
- Product approval by licensing authority
 - Efficacy test (must be $\geq 60\%$ effective)
 - Toxicity test: 10x less than Noramium DA50
 - Biodegradability test: $\geq 50\%$ biodegradable
- Fixed limits for oil quantity to be dispersed
 - 10 MT at $\geq 5\text{m}$ depth & $\geq 0.5\text{NM}$ offshore
 - 100 MT at $\geq 10\text{m}$ depth & $\geq 1\text{NM}$ offshore
 - 1,000 MT at $\geq 15\text{m}$ depth & $\geq 2.5\text{NM}$ offshore
 - $>1,000$ MT decided on case-by-case basis
- Vessel & helicopter systems available
- 900m³ stockpile throughout France
- Potential to disperse 54,000 MT oil
- Additional support with Bonn Agreement



- Land areas
- Coastal areas where dispersant spraying is not allowed *a priori*
- Areas where you can disperse as much as 10 tonnes of oil
- Areas where you can disperse as much as 100 tonnes of oil
- Areas where you can disperse as much as 1 000 tonnes of oil

POLICY EXAMPLES: USA



- Dispersant typically considered secondary to containment & recovery
- Product must be approved by federal licensing authority (US EPA)
- Pre-approval zones typically ≥ 3 NM offshore and/or depth ≥ 10 m
- Aircraft & vessel systems available through USCG & numerous OSROs

OPERATIONAL CONSIDERATIONS



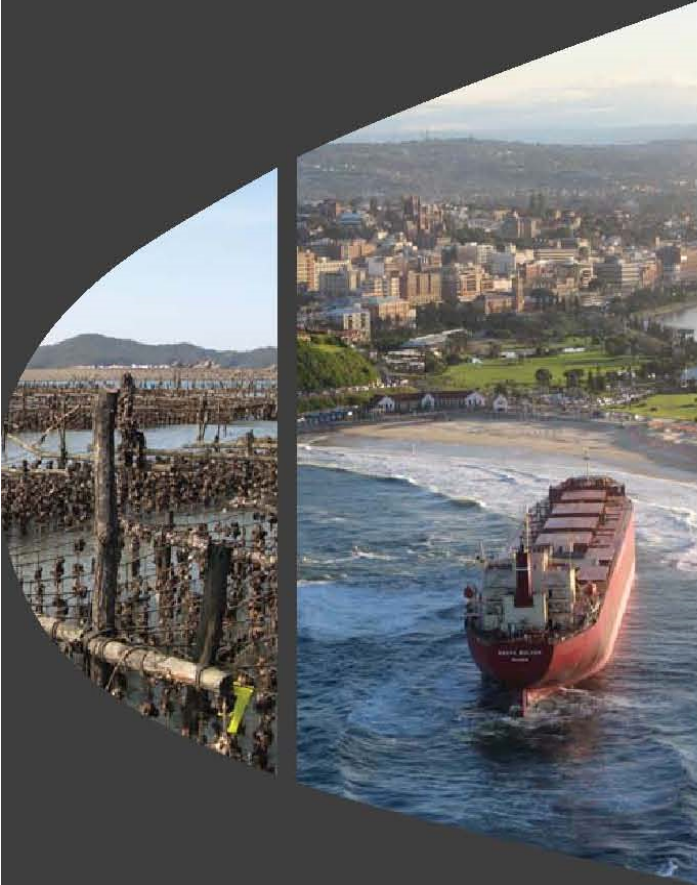
- **Mode of Application:** sourcing suitable aircraft/vessels & equipment
- **Logistics Issues:** location of dispersant stockpiles, re-loading capability
- **Command & Control:** prioritisation & guidance of dispersant application
- **Personnel Involved:** training & experience of workforce (external support)
- **Termination criteria:** continuous monitoring & evaluation of effectiveness



“With proper planning, dispersants can provide a rapid and cost-effective response to oil spills”

Or put another way, “If you don’t plan to use dispersants, you plan NOT to use dispersants.”

- Planning is required to facilitate a rapid and effective response
- Dispersant application typically has short ‘window of opportunity’
- Prior approvals by the relevant authorities can speed up the process
- Policy-makers should be aware of all advantages & disadvantages
- The application of NEBA can help to make balanced decisions
- Operational issues should be considered during planning process



THANK YOU
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