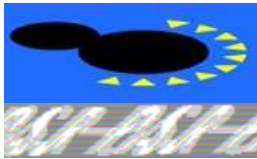


INTERNATIONAL OIL SPILL SYMPOSIUM

Tokyo, Japan 21-22 February 2008

Legislation and Protection of the Marine Environment in Oman



PAJ Oil Spill
Symposium 2008



Presented by Col. Suleiman Al-Busaidy

Ministry of Environment and Climate Affairs

Sultanate of Oman

NATIONAL DECREES AND INTERNATIONAL AGREEMENTS

Oman has two types of legal instrument:

Royal Decrees (RD) and Ministerial Decrees (MD)

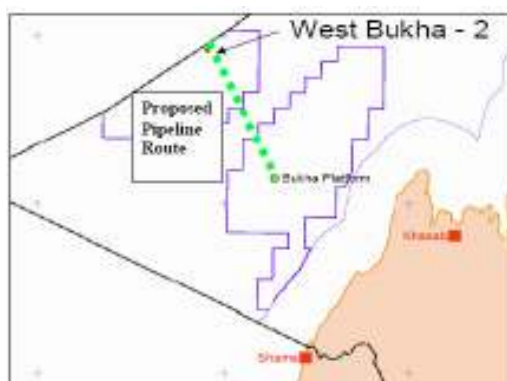
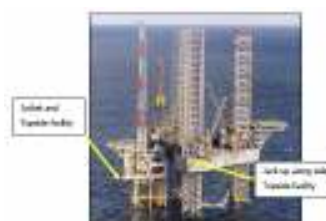
- Royal Decree provides general provisions relating to a particular area in need of statutory control
- Ministerial Decrees provide more detailed regulations

The National Environmental Law under MECA is RD 114/2001 *The Law on Conservation of the Environment and Prevention of Pollution* giving MECA jurisdiction over the territorial sea and powers of the High Seas subject to RD 25/81 which ratified the *International Convention for Prevention of Pollution from Ships: MARPOL 73/78*.

SOME RELEVANT NATIONAL LEGISLATION:

Reference	Legislation Title
RD 25/81	International Convention for Prevention of Pollution From Ships: MARPOL 73/78
RD 92/84	Accession of Oman to the International Convention on Intervention on the High Seas in Case of Oil Pollution (1969 and its Protocol of 1973)
RD 93/84	Authorization of Accession of Oman to the International Convention of 1969 on Civil Liability for Oil Pollution Damage and its Protocols of 1974
RD 92/89	Ratification of the Protocol concerning Marine Pollution resulting from the Exploration and Exploitation of the Continental Shelf (23.02.89)
RD 90/91	Accession to Protocol for the Protection of Marine Environment against Pollution from Land-based Sources
RD 77/96	Accession of the Sultanate to the Agreement to Implementing Section Eleven of the UN Convention on the Law of the Sea, 1982
RD 114/2001	The Law on Conservation of the Environment and Prevention of Pollution (replaces RD 10/82)
Ratified Conventions	
24 April 1985	Ratified International Convention relating to Intervention of the High Seas in Cases of Oil Pollution Casualties
24 April 1985	International Convention on Civil Liability for Pollution Damage

RD 92/89 RATIFICATION OF KUWAIT E&P PROTOCOL OFFSHORE ACTIVITIES: only 1 offshore operator:



Gas and associated condensate production at West Bukha to be connected to existing Bukha platform via a sub-sea pipeline. These wells are located in the Arabian Gulf off the West coast of Musandam.



Being updated



SULTANATE
OF
OMAN

MINISTRY OF
ENVIRONMENT AND
CLIMATE AFFAIRS

NATIONAL OIL SPILL
CONTINGENCY PLAN

OMAN: NATIONAL OIL SPILL CONTINGENCY PLAN (NOSCP)

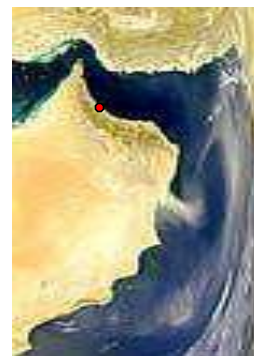
Tier 0: An oil spill with potential impact requiring no action. Managed by polluter.

Tier 1: An oil spill less than 100 tonnes dealt with using local resources.

Tier 2: A medium-level oil spill will need NOSCP assistance. The amount of oil spilled typically would be in the range 100 to 500 tonnes.

Tier 3: An oil spill > 500 tonnes beyond local response capability requiring the immediate assistance of out-of-country resources.

The Sultanate of Oman possesses over 1,700 km of spectacular and unique coastline. Beaches are essential to the economy and heritage of Oman. In addition, there are rapid developments occurring along its coastline, including the construction of large ports with industries (Sohar, Salalah, Duqm), large desalination plants (Barka, Sohar), hotels, fisheries harbours and aquaculture projects. The sensitive habitats and economically valuable coastal infrastructures are vulnerable to oil spills.



SEAWATER INTAKE AND RETURN
SYSTEM (SWIRS) AT SOHAR
INDUSTRIAL AREA: OPEN CANAL FOR
20 INDUSTRIAL PROJECTS, WITH
REQUIREMENT FOR OVER **14 million**
m³/day SEAWATER COOLING/DESAL

High Risk from Oil spills

PORT DEVELOPMENT IMPACTS
ENVIRONMENTAL ISSUES



HABITAT LOSS, EROSION, BALLAST WATER (INVASIVE SPECIES), ANTIFOULING PAINT, OIL & OTHER SPILLS, SHIPPING ACCIDENTS

MAJOR TOURISM, RESIDENTIAL PROJECTS:



المدينة الزرقاء
AL MADINA AL ZARQA

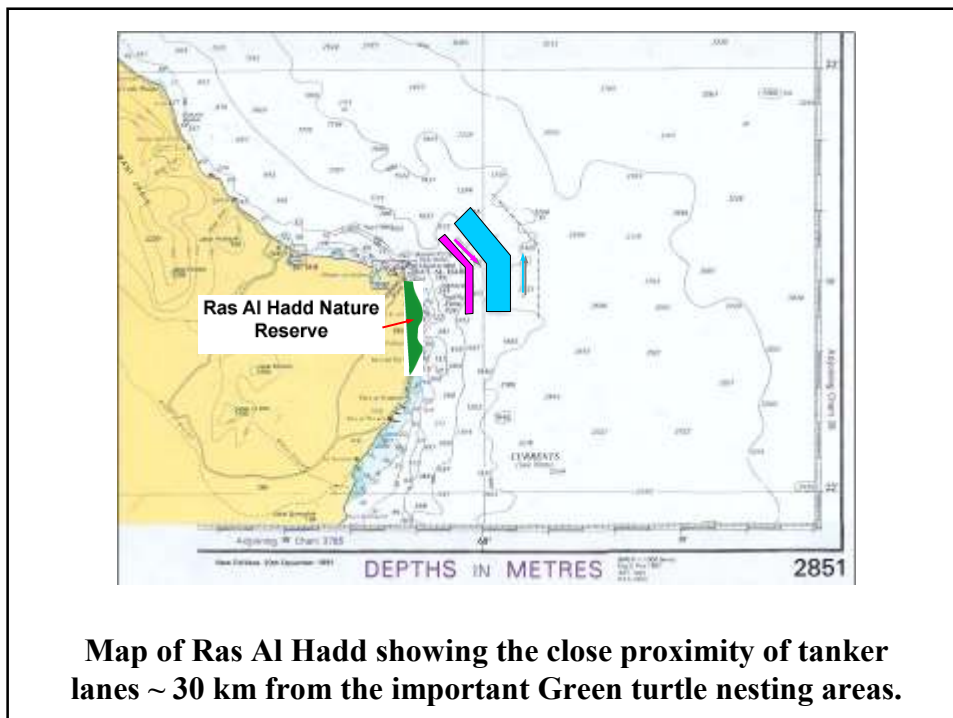
Blue City



Salam Resort & Spa – Yiti

The coastline of Oman has key environmental assets of *international significance*, especially along the Arabian Sea coasts. These include:

1. the turtle nesting beaches of Ras Al Hadd and Masirah Island,
2. migratory bird feeding and nesting grounds of Barr Al Hikman,
3. suspected resident, breeding populations of the humpback whale,
4. a unique, monospecific coral reef off Barr Al Hikman,
5. wetlands including mangroves.



Map of Ras Al Hadd showing the close proximity of tanker lanes ~ 30 km from the important Green turtle nesting areas.



Tar balls originated from passing tanker traffic, along the Batinah coast (prior to 2002)

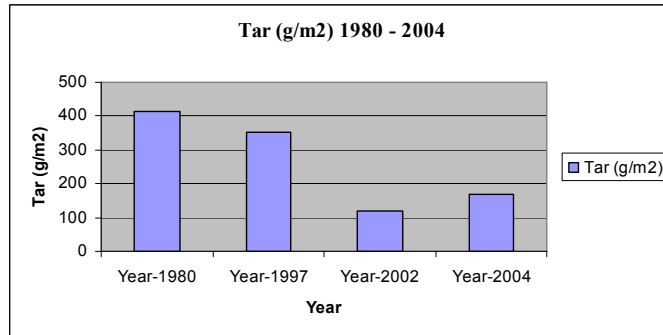
MARINE POLLUTION MONITORING PROGRAMME

BEACH TAR SURVEY

Randomly select three 1 metre wide strips using a tape measure and marker poles. From the low water mark collect all tar balls with forceps into a small labelled plastic bag, remove sand, weigh in lab (g/m beach front)



MONITORING OF TAR BALL DENSITIES



It appears that levels of tar balls have declined from high levels in 1980-1997 (graph, above) and levels in 2006/2007 were almost zero but large tar balls may still be found at Musandam.

Reference	Legislation Title
RD 25/81	International Convention for Prevention of Pollution From Ships: MARPOL 73/78. Accession to Annexes I – V 13-06-84
<p>Main Elements of MARPOL 73/78 Management Plan:</p> <ul style="list-style-type: none"> • Provision of adequate reception facilities for Annexes I-V wastes • Discharge of wastes into sea strictly limited, especially in Special Area of the Arabian Sea coasts • Compliance, monitoring and enforcement 	

IMO Special Area Status for Arabian Sea coast of Oman



Ratified at MEPC/52 October 2004. Total enforcement of the Special Area after agreements reached on Reception Facilities.

PROPOSED REFUGE SITES IN OMAN



To date 6 Refuge Sites have been proposed in less sensitive areas to allow possible ship-to-ship transfers or other measures

MARPOL 73/78 Regulation 10, Annex I (Special Areas)

- Ships greater than 400 tons gross tonnage prohibited from discharging oil or oil mixtures in Special Area.
- This does not apply to clean or segregated ballast.
- Processed bilge water from machinery spaces may be discharged, but only if effluent concentration < 15ppm oil content, vessel underway, IMO-approved oil filtering equipment must be in use, etc.
- For ships less than 400 tons gross tonnage discharge of oil or oily mixtures is also prohibited unless effluent < 15ppm.
- The Sultanate of Oman government is obliged to investigate any visible traces of oil in the vicinity of a ship or it's wake.
- Reception Facilities are required; Port Waste/Reception Facilities are under tendering process. Estimated operational by end 2008.

EXISTING RECEPTION FACILITIES

'East Coast Regional Reception Facility' (ECOREF)

This Facility operated since 1990 in Fujairah can deal with sludge and oily water (slops) on 20,000 m² site:



Holding tanks and the skip park



Water and oil separation plant

**MRMEWR (now MECA) UNDER MD Dec 2005
called for:**

- All Companies in the Oil/Gas Industry to have minimum access to Tier 2 capability for spills
- the establishment of new Tier 2 Response-capable Emergency Response Centres (Environmental Action Centres). These will be private-sector supported Centres providing assistance to Oil Companies, Ports, Power & Desalination Plants and other vulnerable sites in the event of an oil spill. After Tendering two Service Provider Companies Clean Globe and PESCO were selected to provide these facilities.

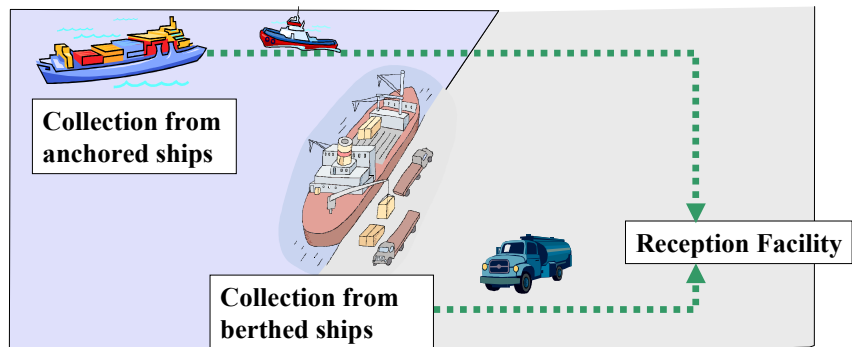


Overall principle for collection and treatment of port waste

- First treatment facility for oily waste to be built in Salalah
- Waste reception from ships to reception tanks (busy ports), by road tankers, containers, waste collection bins
- Waste to be transported from other ports to Salalah or other licensed treatment and disposal facilities
- Ports to be served: Salalah, Sohar, Mina Sultan Qaboos, Mina Al Fahal, Qalhat (Sur), Duqm
- System based on the MARPOL 73/78 Convention Requirements
- Same concept can be implemented in Sohar etc. according to increase in volumes
- Service available 24 h/365 days/year

Reception of waste from ships

- Waste is collected when ships are berthed
- Collection from anchored ships optional (not included in the proposed fee)

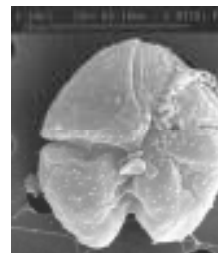


HARMFUL ALGAL BLOOMS (HABs)

• *Top view shows a RED TIDE often a Harmful Algal Bloom*



• *Bottom view shows the dinoflagellate Karenia selliformis implicated in the fish, green turtle and dolphin mass mortalities along Arabian Sea coasts of Oman in November 2001 (from Ballast water??)*





Shipping:

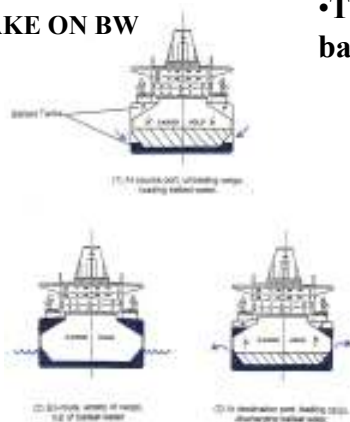
- moves > 90% of World's commodities,
- transfers ~3 billion tonnes of ballast / year,
- carries > 7,000 species of microbes, plants and animals at any one time, and
- is getting bigger, faster and more frequent!

Ballast Water Transfers

SOURCE PORT:

UNLOADING CARGO

TAKE ON BW



•Virtually ALL marine species have a planktonic stage in their life-cycle.

•Therefore, can potentially be taken on in ballast, discharged when loading (Sohar)



DESTINATION PORT:

LOADING CARGO

DISCHARGE BW



- **ROPME Sea Area (especially Arabian Gulf) has suffered harmful algae blooms in recent years.(Kuwait, 1999, 2001).**
- **Some of these species may have been introduced in ballast water.**
- **Is a closed system with high ecological values and sensitivity.**
- **Is therefore particularly vulnerable to bio-invasion.**
- **Oman coastal waters also vulnerable BUT MORE OPEN THAN GULF**

The New IMO BW Convention

- *International Convention for the Control and Management of Ships' Ballast Water & Sediments, 2004 (IMO; MEPC51/2)*
- **Ballast water risk assessments (each site).**
- **Port baseline surveys (each site).**
- **Training in IMO BW guidelines.**
- **Training and systems for compliance monitoring & enforcement.**
- **Adoption as significant as MARPOL**