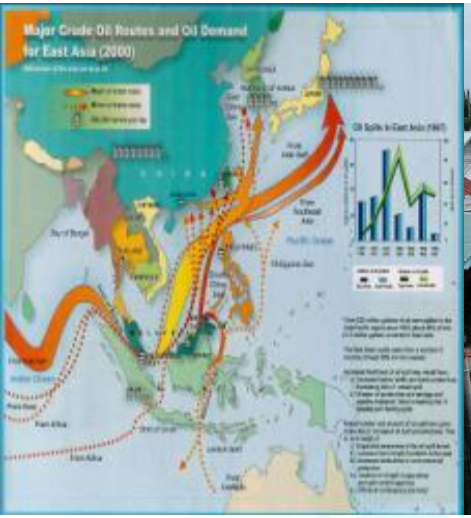
Biodiversity in the Straits of Malacca: An assessment of issues and challenges on environmental protection





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9th Co-operation Forum (CF): Yogyakarta, 26-30 Sept 2016

Outline of presentation

- Introduction
- Vital statistics
- Issues and challenges in managing the marine environment of the Straits of Malacca
- Case examples of major concerns
- Recent developments
- Conclusions

Introduction

- Important East-West sea lane of communication
- Records show rich biological
- Important socio-economic and environmental characteristics
- Important fishery source for littoral States
- Borders areas with extensive human activities

Vital statistics

Characteristic	Figures
Length	About 500 nautical miles or 900 from Pulau Rondo to Koh Phuket (northen limit) to Pulau Karuman and Tanjong Piai. Longest Straits used for international navigation.
Width	Widest point - 220 nautical miles at northen limits Narrowest point – 8 nautical miles around Riau archipelago
Marine and Coastal Ecosystems	**Mangroves** – 498,109 hectare •Malaysia (93,503) •Indonesia (404,606) **Coral Reefs** •Malaysia – fringing reefs in Port Dickson, Pulau Payar. Newly discovered reefs in Pulau Perak •Indonesia – some fringing reefs in northern Sumatera **Seagrass** •Malaysia – Langkawi, Port Dickson, Seberang Prai, Teluk Nipah (9 species) •Indonesia – East coast of Sumatera (12 species) •Singapore – Southern Island (11 species)
Fisheries landings	> 700,000 metric tonnes from the West Coast Peninsular Malaysia
Population	22.5 million in Peninsular Malaysia recorded in 2010
Accidents (1978 – 2003)	**888**
Length of Traffic Separation Scheme	**240 km**

Economic value (000,000 USD)

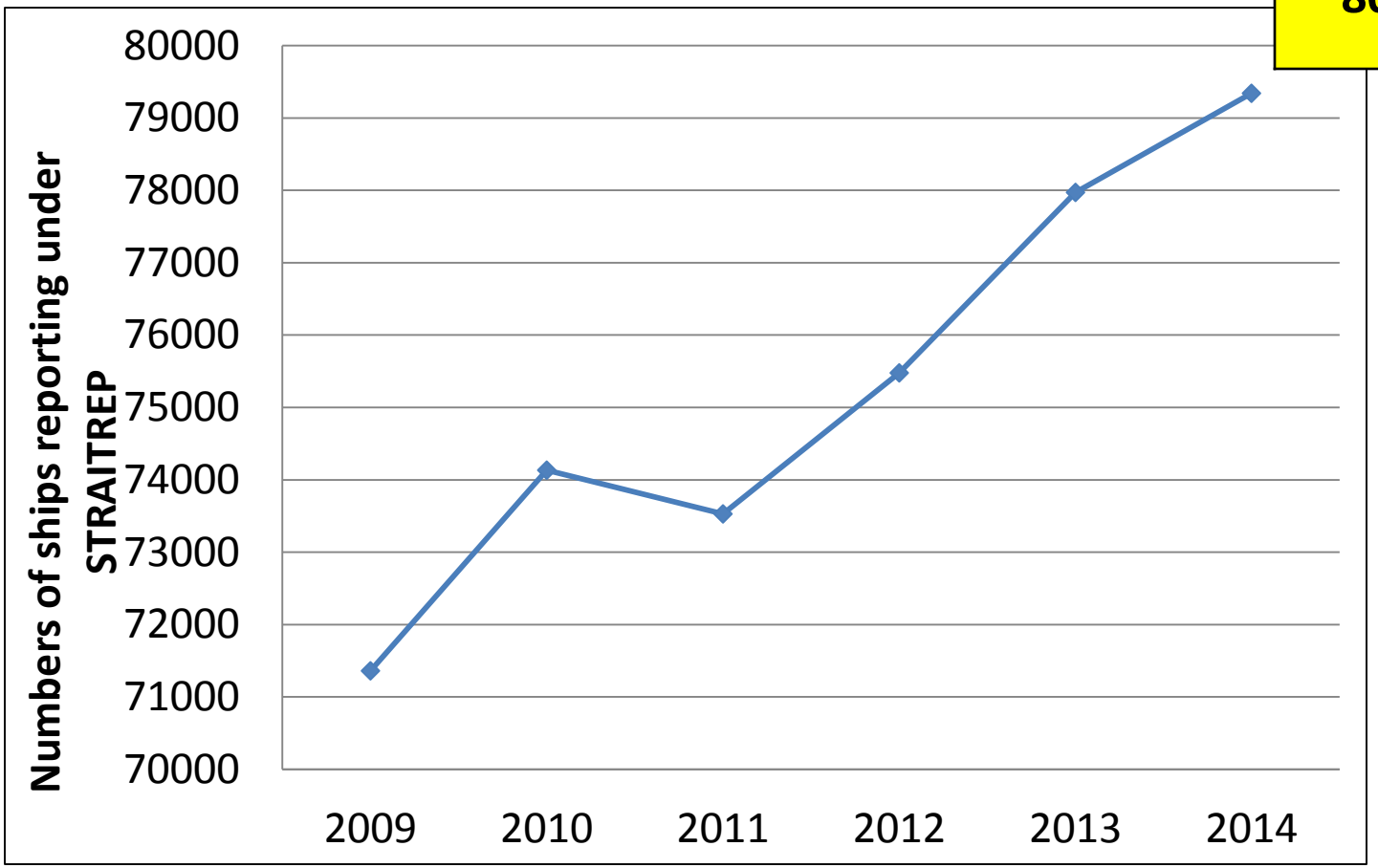
	Indonesia coastline	Malaysian coastline	Singapore coastline	Straits-wide
Coastline(km)	1,641	956	130	2727
Fisheries	456.39	341.11	4.03	801.53
Aquaculture	87.18	57.62	11.16	155.96
Mangroves	3,766.10	1,747.65	44.12	5,557.87
Mudflats	0.03	31.58	0.03	31.34
Coral reefs	455.20	34.57	0.07	484.84
Seagrass	N/A	8.10	0.09	8.19
Seaweed	9.36	1.02	N/A	11.46
Beach	369.35	169.23	275.87	814.45
Sea Lanes	N/A	N/A	N/A	340
Total	4,687.22	2,173.61	333.37	7,534.21

Source: GEF/UNDP/IMO Regional Program for the Prevention and Management of Marine Pollution in the East Asian Seas.

Vessel traffic in the SOMS

Year 2015

80,959



Numbers of ships reporting under STRAITREP (2009 – 2015)

Source: Marine Department Malaysia (2016)

Issues in managing the marine environment of the SOMS

Biodiversity and environmental degradation

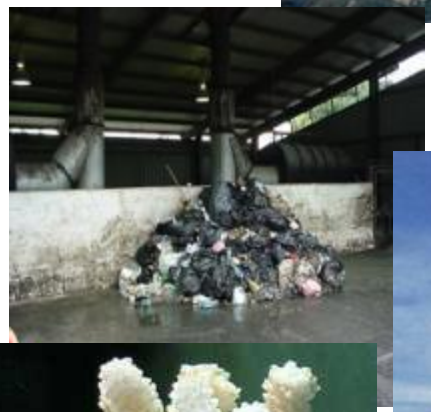
- A perennial problem given rising coastal population resulting in increasing pressure for more resources
- Ecosystems and habitats degraded
- Loss of biodiversity, to an extent, not monitored
- More than 70,000 vessels passing through the Straits yearly pose a potential threat from accidental oil spills and intentional discharges.
- Large Marine Ecosystems (LME) approach.

The symptoms:

- Decline in quality of fisheries landings
- Lower catch-per-unit-effort (CPUE)
- Loss of mangrove cover:

  > 40 % in the SOMS
- Pollution
- New problems such as introduction of alien species







Navigational Safety

- Shipping is an inherently risky activity
- Cross-straits traffic
- More than 20,000 tankers of various types
- Accident threats

Date	Vessel/s Name	Amount Spilled ('000 barrels)	Nature of Incident
6 Jan 1975	MV Showa Maru	54	Grounded in Singapore Straits
20 Sept 1992	MV Nagasaki Spirit vs. MV Ocean Blessing	100	Collision in the Straits of Malacca
15 Oct 1997	MV Evoikos vs MV Orapin Global	175	Collision in Singapore Straits
21 May 1999	SS Sun Vista	14	Sank in the Straits of Malacca
3 Oct 2001	MV Natuna Sea	49	Grounded in Singapore Straits

Challenges in managing the marine environment of the SOMS

Vessel-based pollution

- About 70% of all marine pollution originates from land, 10% from maritime transportation and another 10% from dumping at sea.

- However, marine pollution from sea-based activities is an "attention grabber", especially when it involves oil spills.

- Some effects of pollution from sea activities particularly oil spills are highly visible – oil covered wildlife, oily coastline, ecosystems highly vulnerable to pollution, etc.

- Human costs i.e., loss of income and livelihood.

- The primary causes of sea-based marine pollution include accidents, operational or intentional discharge and dumping at sea of wastes from land.
- Operational discharges still common

Responses:

- Prevention of accidents through TSS and mandatory reporting.
- Preparing for pollution by placing oil spill control stockpile and national contingency planning.
- Enforcement and surveillance ongoing but difficult as it is a factor of traffic volume, size of sea area and time vs. availability of assets.

Case examples:
Oil pollution and coastal erosion

- In 1997, 2 tankers collision (*Evoikos* and *Oraphin Global*) in Singapore waters caused major oil pollution.

- In Sept 2003, oil pollution washed ashore was detected in the mangroves area in Tanjung Piai National Park from unknown source.

- On 13 Sept 2011, oil pollution detected along a 300m stretch of the mangroves area in the Tanjung Piai National Park.

- On 26 June 2012, oil washed ashore along a 1.2 km stretch of coastal area in Tanjung Piai.

The incident in Sept 2011

- Occurred along a 300 m stretch of coastal area along the west coast of the Tanjung Piai National Park.
- Recorded about 3 – 6 inches of oil on the muddy area.
- Had to mobilise a *Action Plan on Coastal Cleanup*.

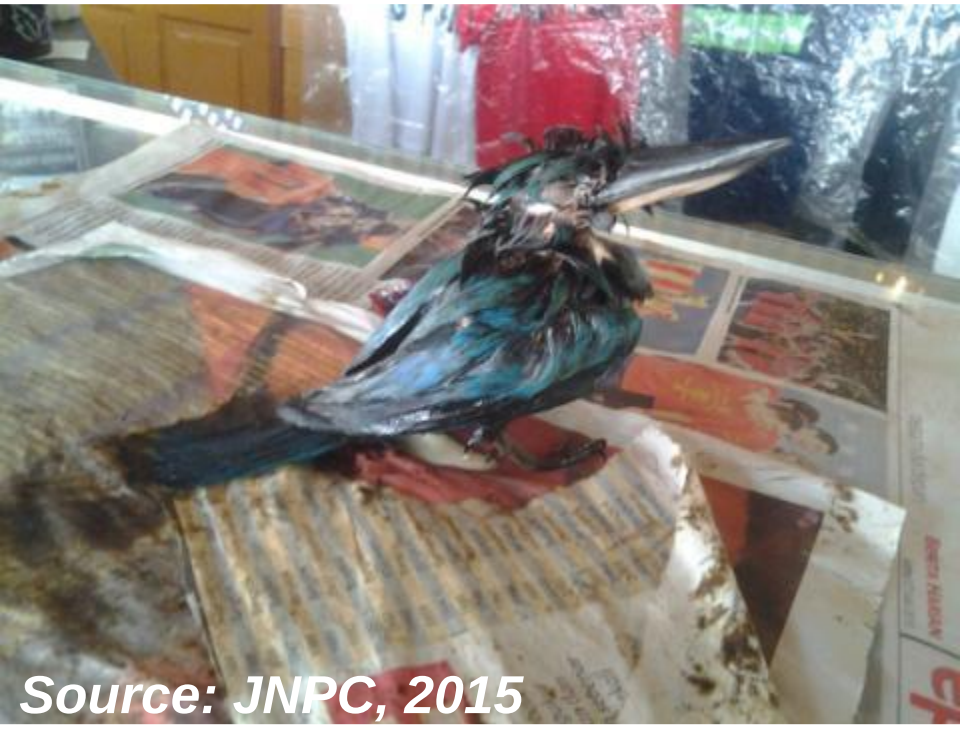
Source: JNPC, 2015

Source: JNPC, 2015

The incident in June 2012

- Happened on 26 June 2012, along a 1.2 km stretch of coastal area along the coastal areas of the Tanjung Piai National Park.
- Estimated 5 ha of area badly degraded due to the incident.
- 1.8 tonnes oil collected with assistance from about 300 volunteers.

Source: JNPC, 2015



Source: JNPC, 2015

Coastal erosion

- The constant reported rates in Tanjung Piai has been estimated to be about **2 - 4 m/year (1999)**.

- The coast has experienced severe erosion, in spite of the construction of various coastal defence structures. Khazanah Nasional study for IRDA on erosion in Tanjung Piai showed **7-11 m/year (2011)**.

- Meanwhile JPNC report stated that the recent rate is between **12-15 m/year (2012)**.

- Amongst others, one of the reported causes of erosion at Tanjung Piai include waves generated from heavy shipping activities.

Source: JNPC, 2015

Efforts undertaken

- Continuous replanting activity.

Major concerns faced

- Continuous erosion
- Mangrove loss
- Loss of muddy coastal areas
- Tourism losses
- Adverse effects on migratory birds in the area
- Fisher livelihoods
- RAMSAR status

New developments (MEPC 69)

- Committee considered document MEPC 69/10/2 (WWF, IUCN and ACOPS) highlighting the potential for the use of **Ecologically or Biologically Significant Marine Areas (EBSAs)** criteria developed under the CBD to aid in the review of existing or identification of prospective PSSAs.

- A comparative analysis of their criteria highlighted that both EBSAs and PSSAs share common features related to ecological sensitivity; it was suggested that, when considering potential PSSAs in future, interested parties should consider EBSAs as a valuable reference tool to support the use of the *Revised PSSA Guidelines.*

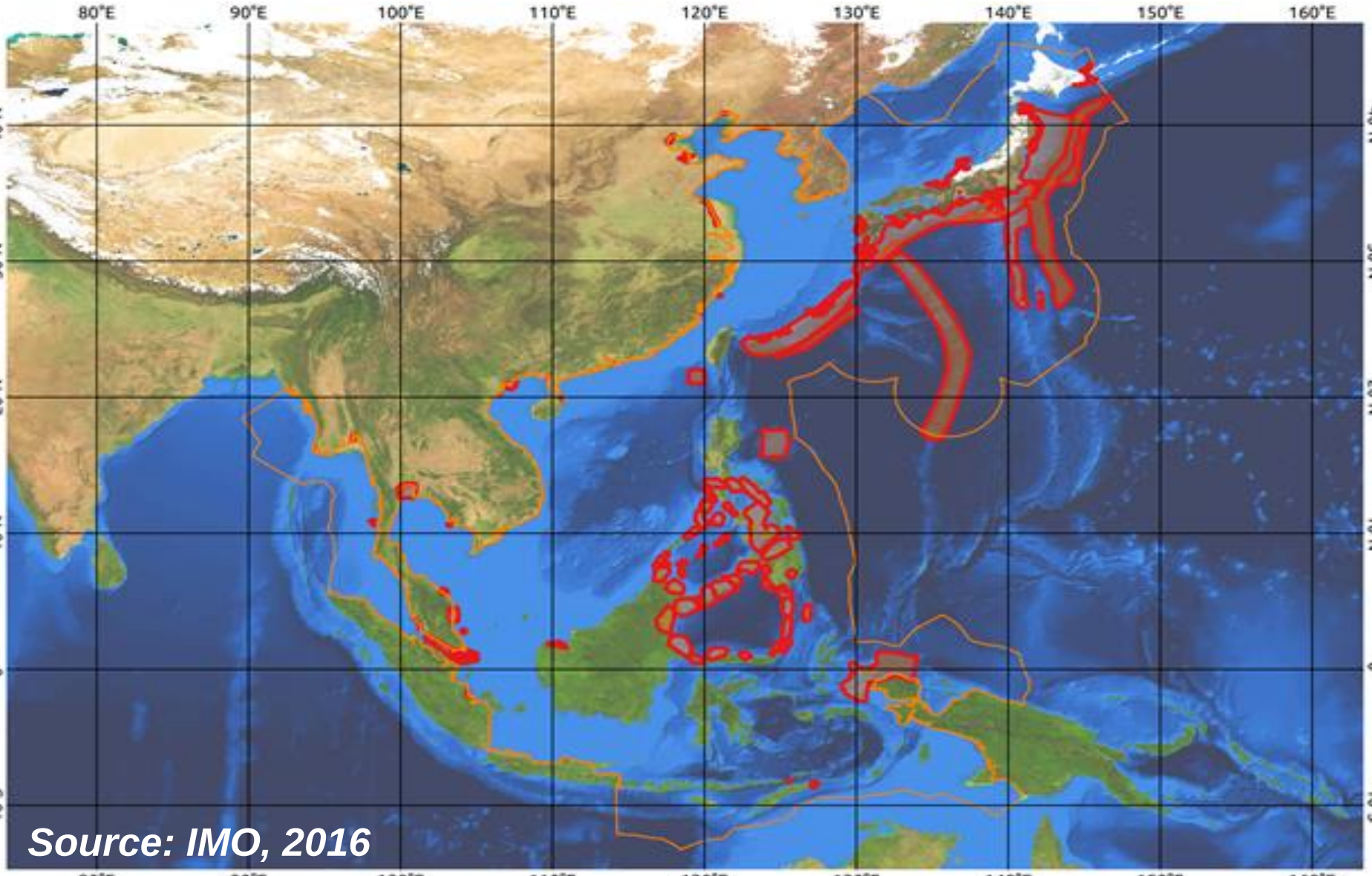
EBSA Workshop – China: December 2015

CBD Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) in the Seas of East Asia, and Training Session on EBSAs

13 - 18 December 2015 - Xiamen, China

- Attended by country representatives from Indonesia, Malaysia, Vietnam, and the Philippines

36 Areas “Meet the EBSA Criteria”



Source: IMO, 2016

Status of Ratification of IMO's Convention among the Littoral States

s at 0/09/16	IMO Convention 48	SOLAS Convention 74	SOLAS Protocol 78	SOLAS Protocol 88	SOLAS Agreement 96	LOAD LINES Convention 66
donesia	x	x	x			x
laysia	x	x	x	x		x
ngapore	x	x	x	x		x

LOAD LINES Protocol 88	TONNAGE Convention 69	COLREG Convention 72	CSC Convention 72	CSC amendments 93	SFV Protocol 93	Cape Town Agreement 2012	STCW Convention 78	STCW-F Convention 95	SAR Convention 79	STP Agreement 71	Space STP Protocol 73	IMSO Convention 76	INMARSAT OA 76	IMSO amendments 2006	IMSO amendments 2008	FACILITATION Convention 65

MARPOL 73/78 (Annex I/II)	MARPOL 73/78 (Annex III)	MARPOL 73/78 (Annex IV)	MARPOL 73/78 (Annex V)	MARPOL Protocol 97 (Annex VI)	London Convention 72	London Convention Protocol 96	INTERVENTION Convention 69	INTERVENTION Protocol 73	CLC Convention 69	CLC Protocol 76	CLC Protocol 92	FUND Protocol 76	FUND Protocol 92	FUND Protocol 2003	NUCLEAR Convention 71	PAL Convention 74	PAL Protocol 76	PAL Protocol 90	PAL Protocol 02	LLMC Convention 76	LLMC Protocol 96
x	x	x	x	x					x		x										
x	x	x	x	x																	x
x	x	x	x	x																	

SUA Convention 88	SUA Protocol 88	SUA Convention 2005	SUA Protocol 2005	SALVAGE Convention 89	OPRC Convention 90	HNS Convention 96	HNS PROT 2010	OPRC/HNS 2000	BUNKERS CONVENTION 01	ANTI FOULING 01	BALLASTWATER 2004	NAIROBI WRC 2007	HONG KONG CONVENTION
x					x			x	x	x			
								x	x	x	x	x	
					x			x	x	x	x		

• The present arrangement and its components contribute towards ensuring safety of navigation in the Straits.

• However, the number of vessels plying the Straits has increased and this presents new challenges in environmental management in the Straits.

• Among the major concerns relating to maritime casualties in the Straits :

- Serious accidents in high traffic density areas;
- Risks posed by small crafts cannot be underestimated;
- Incidents in the Straits have involved all types of ships;
- Age of ship is a significant factor; and
- Human element plays a significant role.

- Uniform ratification and implementation of international conventions for a more comprehensive protection from vessel-based pollution, and accord the littoral States more authority in taking environmental protection measures.

- Oil spill control however is one area where there has been significant cooperation among the littoral States and user States. The increase in tanker traffic may necessitate an evaluation of the existing capacity to address larger spills.

- The capacity to control chemical spills is however lacking and needs to be given serious consideration.

Conclusions

- The Straits will continue to be at risk from maritime transportation due to dependence on seaborne trade and the transportation of oil.
- Much has been done to address the problem through framework of international conventions, non-legal instruments and national actions – more can be done.
- Spirit of Article 43
- New areas should be explored - establishment of PSSAs, uniform ratifications, facilities on ground
- The need for a medium to long term environmental management plan identifying projects for cooperation on environmental protection in the Straits.

Thank you

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