

# RECENT DEVELOPMENTS OF THE INTERNATIONAL MARITIME ORGANIZATION

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# FOCUS: SAFETY AND ENVIRONMENTAL CONCERNS IN INTERNATIONAL SHIPPING



**INTERNATIONAL  
CONVENTIONS**

**INTERNATIONAL  
SAFETY  
GUIDELINES  
BY THE IMO**



# TOPICS FOR DISCUSSION:

**PLACES OF REFUGE FOR SHIPS IN DISTRESS**

**THE POLAR CODE**

**BALLAST WATER MANAGEMENT TO CONTROL CONTAMINATION**

**STRATEGIES TO REDUCE GREENHOUSE GAS EMISSIONS**

**MARPOL GUIDELINES TO REDUCE PLASTIC FROM SHIPS**

**MARPOL—ANNEX VI—REDUCING SULFUR OXIDE EMISSIONS BY 2020**

**DIGITAL SHIPPING AND THE FAL CONVENTION**





# International Maritime Organization

# The International Maritime Organization (“IMO”)

- IMO is the United Nations specialized agency for safety and security of shipping and prevention of marine pollution by ships
- Global standard-setting authority for safety, security and environmental performance of international shipping
- Creates a level playing field and sets standards to prevent unsafe practices to save money
- International shipping transports more than 80% of global trade throughout the world
- IMO measures impact all aspects of international shipping—design, construction, equipment, manning, operation, legal matters, technical cooperation and disposal for environmentally safe and energy efficient shipping operations

# The International Maritime Organization (“IMO”) (con’t)

- **Key treaties of the IMO include:**
  - International Convention for the Safety of Life at Sea (SOLAS)
  - International Convention for the Prevention of Pollution from Ships (MARPOL)
  - International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
  - International Convention on Maritime Search and Rescue (SAR Convention)



# The IMO Structure:

- IMO is based in London, England
- Represented by 171 Member States, three Associate Members and various Intergovernmental Organizations (IGO) and Non-Governmental Organizations (NGO)
- The United States is a Member State
- The Member States meet at the Assembly every two years in regular sessions to approve the work of the IMO

# The IMO Structure (con't):

- There are Five Committees responsible for the review, updating and approval of the IMO's work:
  - Facilitation Committee (FAL)
  - Legal Committee (LEG)
  - Marine Environmental Protection Committee (MEPC)
  - Maritime Safety Committee (MSC)
  - Technical Co-operation Committee (TC)
- There are also various subcommittees



# U.S. Participation in the IMO

- United States Coast Guard has been a key participant in the IMO for all policy development with IMO for more than 50 years.
- U.S. Coast Guard assisted in IMO participation by various governmental advisors, including Department of State, Department of Homeland Security, Department of Defense, Department of Justice, Environmental Protection Agency, National Oceanic and Atmospheric Administration, National Transportation Safety Board and various industry experts.





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# Places of Refuge

# The Relevant Agencies

International Maritime Organization



National Response Team



U.S. Coast Guard



Region Ten



# IMO Guidelines on Places of Refuge for Ships in Need of Assistance

- IMO adopted Resolution A.949 (23) on December 5, 2003
- Adopted in response to three major shipping casualties, which demonstrated that coastal states can increase their risk if deny a vessel an opportunity to enter a place of refuge temporarily
- Purpose – encourage nations to balance needs of ships and adjacent coastal states to:
  - Enhance maritime safety
  - Protect the marine environment
- Resolution A.949 (23) presented to the Assembly on March 5, 2004

# Three Major Casualties Prompting Resolution A.949 (23)



- 1. M/V ERIKA** — 1975 oil tanker sank off the coast of Brittany, France
  - Caused major environmental disaster when spilled 31,000 tons of heavy fuel oil
  - Ran into a heavy storm, broke in two and sank
  - This event triggered new EU legislation with regard to transport by sea

# Three Major Casualties Prompting Resolution A.949 (23)



## 2. M/V CASTOR

- Carrying 30,000 tons unleaded gasoline in western Mediterranean Sea
- Developed multiple cracks in its deck plating in December 2000
- Largest cracks were 72 feet long



# Three Major Casualties Prompting Resolution A.949 (23)



## 2. M/V PRESTIGE

- Greek operated single hull oil tanker—deadweight tonnage 81,000 tons
- November 13, 2002, carrying 77,000 metric tons of cargo—2 different grades of heavy oil fuel
- One of its 12 tanks burst during a storm off the coast of Galicia in Northwest Spain
- France, Spain and Portugal refused to allow the M/V PRESTIGE to dock in their ports
- Captain sought refuge in Spanish Port--Spanish government refused to allow ship to remain and demanded that ship leave the Port
- The integrity of the ship could not withstand the storm, breaking off a 40 foot section, releasing oil
- Resulted in catastrophic damage to marine life and the environment
- Keeping the ship in port and booming around her to contain the oil would have been less harmful to the marine environment



## Resolution A.950 (23) Second IMO Resolution *Maritime Assistance Services (MAS)*

- Recommend that all coastal states establish maritime assistance service
- U.S.—Rescue Coordination Centers (RCCs) comply with the intent of this resolution



ASSEMBLY  
23rd session  
Agenda item 17

A 23/Res.949  
5 March 2004  
Original: ENGLISH

**Resolution A.949(23)**

**Adopted on 5 December 2003  
(Agenda item 17)**

**GUIDELINES ON PLACES OF REFUGE FOR SHIPS  
IN NEED OF ASSISTANCE**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,



# IMO Guidelines — Places of Refuge — Definitions:

- **Ship in Need of Assistance:** [A] ship in a situation, apart from one requiring rescue of persons on board, that could give rise to loss of the vessel or an environmental or navigational hazard.
- **Place of Refuge:** means a place where a ship in need of assistance can take action to enable it to stabilize its condition and reduce the hazards to navigation, and to protect human life and the environment.
- **MAS:** means a maritime assistance service, as defined in resolution A.950(23), responsible for receiving reports in the event of incidents and serving as the point of contact between the shipmaster and the authorities of the coastal State in the event of an incident.

# Applicability of Guidelines

- When safety of life is involved—provisions of the Search and Rescue Convention (SAR Convention) should be followed.
  - These Guidelines do not address the issue of operations for the rescue of persons at sea.
- When ship is in need of assistance, but safety of life is not involved, these Guidelines should be followed. This involves property damage and environmental damage.

# Objectives of Providing a Place of Refuge

## Main Issue

- What should be done when a ship is in serious difficulty—without a risk to human life or safety? Should the ship be brought into shelter near the coast or into a port—or taken out to sea?

## Considerations

- When ship has suffered incident—best way to prevent damage is to lighten cargo and bunkers and repair damage—Guidelines state this is best to perform this work in a place of refuge

## Problem

- Bringing a ship near the coast could endanger the coastal State economically and environmentally
- Local authorities may object to bringing a ship into territorial waters



# Objectives of Providing a Place of Refuge (con't)

- **Balancing Act:** Granting access to a place of refuge can be a political decision determined on a case-by-case basis with due consideration given to balance between the risk to the environment, damage to the ship and the potential damage to the coastal state.
- **Variables in Each Case:** Every decision concerning access to a place of refuge is based on a case by case basis:
  - Taking ship to a local place of refuge in a port or terminal could result in work on boat being done easily.
  - It may be advantageous to conduct a cargo operation to minimize or prevent pollution

# Purpose of the IMO Guidelines

- Provide Member Governments, shipping companies and Salvage operators with framework to assessing situation of ships needing assistance
- Provides common framework to respond effectively to casualty

# Guidelines for Action Required of Masters and Salvors for Ships Needing Place of Refuge

Identify the hazards and the nature of the event:

- Fire
- Explosion
- Damage to the ship that may be caused
- Collision Risk
- Impaired Vessel Stability
- Grounding Risk
- Pollution Risk



# Guidelines for Action Required of Masters and Salvors for Ships Needing Place of Refuge (con't)

Take into account all reasonable and foreseeable consequences resulting from the following factors:

- What happens if the ship stays in the same position?
- What happens if the ship continues the voyage?
- What happens if ship is admitted to place of refuge?
- What happens if ship is taken out to sea?

# Guidelines for Action Required of Masters and Salvors for Ships Needing Place of Refuge (con't)

- Identify the assistance needed
- Contact the coastal state and give full disclosure required under all international conventions
- Coordinate with the Maritime Assistance Service ("MAS")
- Report all procedures in accord with ISM Code

# Guidelines for Actions Expected of Coastal States

- Comply with all applicable international conventions
- Coastal State may require ship's master to take appropriate action within a time limit
- Establish procedures to respond to request for assistance
- Establish MAS
- Make Generic Assessment and Preparatory Measures for Places of Refuge
- Conform to local contingency plans

# Guidelines for Actions Expected of Coastal States (con't)

## Expert Analysis

- Balancing all risks—What is the nature of the problem and what foreseeable problems will result
- The Coastal State is under no obligation to grant access to a place of refuge, but Coastal State should weigh all options and factors
- If place of refuge is a port—balancing the disruption to the port's operation
- Evaluation of the consequences if request is refused
- Inform all authorities



# Guidelines for Actions Expected of Coastal States (con't)

- **Make Assessments of Event Specific Factors—including:**
  - The type of cargo—hazardous? Quantity?
  - Seaworthiness of the vessel
  - Weather and sea conditions
  - Whether ship and cargo are insured?
  - Identification of all insurers
  - Provisions of Financial security necessary
  - Whether salvage operations are ongoing
  - Measures already taken
  - Whether master and crew on board
  - Legal authority of country concerned
- All governmental authorities should make contact with ship authorities

# Guidelines for Evaluation of Risks for Place of Refuge

- Threat to public safety
- Pollution
- Designation of Environmentally sensitive areas
- Sensitive species and habitats
- Fisheries and ongoing fishing at the time
- Economic and industrial facilities
- Amenity resources and tourism
- Facilities available

# Emergency Response and Follow-up Action

## Other necessary actions:

- Lightering
- Pollution remediation
- Towage
- Salvage
- Storage—vessel/ cargo



# IMO Guidelines on the Control of Ships in an Emergency

- Approved by Maritime Safety Committee in October, 2007
- These Guidelines do not apply when safety of human life is in jeopardy. When safety of human life is involved, the *SAR Convention* should be followed. (§ 1.3)
- Applies in conjunction with the ***Guidelines for Places of Refuge*** for ships needing assistance (§ 1.4)
- Contains ***Guidelines for Coastal States*** in **Article 5**
- Provides ***Guidelines for Masters***  
**Articles 6**
- Provides ***Guidelines for Salvors*** in Article 7





# National Response Team



# U.S. Response and Implementation of the IMO Guidelines for Places of Refuge—Actions of the U.S. National Response Team

- The National Response Team (“NRT”) coordinates activities at the national and federal level with state and local governments
- NRT—Chair is the U.S. Environmental Protection Agency (EPA)
- NRT—Co-Chair is the U.S. Coast Guard

# U.S. Response and Implementation of the IMO Guidelines for Places of Refuge—Actions of the U.S. National Response Team (con't)

- The following federal agencies are members of NRT:
  - U.S. Department of Agriculture
  - U.S. Department of Commerce
  - U.S. Department of Defense
  - U.S. Department of Energy
  - U.S. Department of Health and Human Services
  - U.S. Department of the Interior
  - U.S. Department of Justice

# U.S. Response and Implementation of the IMO Guidelines for Places of Refuge—Actions of the U.S. National Response Team (con't)

- U.S. Department of Labor
  - U.S. Department of State
  - U.S. Department of Homeland Security
  - U.S. Federal Emergency Management Agency
  - U.S. General Services Administration
  - U.S. Nuclear Regulatory Commission
  - U.S. Department of Transportation
- 
- For more information on NRT—See [www.nrt.org](http://www.nrt.org)



- In 2006, NRT formed a ***Places of Refuge Workshop*** to develop guidelines
- Workgroup produced the ***2007 NRT Guidelines for Places of Refuge Decision-Making*** (NRT POR Guidelines) dated July 26, 2007
  - Purpose—provide systematic process of incident specific decision-making to assist U.S. Coast Guard Captains of the Port to determine whether a vessel needs a port of refuge and best refuge location
  - Guidelines also developed a framework for pre-incident identification of **potential** places of refuge location to be included in the **Area Contingency Plans**

- July 17, 2007, U.S. Coast Guard—Department of Homeland Security—issued ***Commandant Instruction 16451.9 U.S. Coast Guard Places of Refuge Policy***
- Purpose—to provide policy guidance, risk assessment to aid commanders, Area Committees and Regional Response Teams (RRTs)
- Document 16451.9 should be interpreted in conformity with the NRT Guidelines

# NRT GUIDELINES

- **Application:** Apply to places of refuge decision-making in waters subject to U.S. jurisdiction
- Should be interpreted consistently with ***IMO Guidelines***.
- **Defines “Place of Refuge”** as “location where a vessel needing assistance can be temporarily moved to, and where actions can then be taken to stabilize the vessel to:
  - (1) protect human life, sensitive natural and cultural resources, historic properties, national defense, security, economic interests, and critical infrastructure; and
  - (2) reduce or eliminate a hazard to navigation.

A Place of Refuge may include constructed harbors, ports, natural embayments, or offshore waters with the necessary maritime support infrastructure.”

# NRT GUIDELINES (con't)

- Vessels needing assistance include the following:
  - Imperiled, structurally damaged, or leaking vessels
  - Vessels that were sunk and refloated
  - Vessels that need to be in a harbor or moored in protected water to make repairs or stop the loss of oil or hazardous substances
  - Vessels with lost power or steerage that need repairs
  - Vessels caught in force majeure or overwhelming force or condition that it threatens the loss of the vessel, cargo or crew unless immediate action is taken



# Authorities and Responsibilities Under NRT Guidelines



- **U.S. Coast Guard Captain of the Port (COTP)** is the **Designated Federal On-Scene Coordinator** with authority to order Vessels in and out of ports, harbors and embayments to protect the public, environment and maritime commerce
- COPT works with state, local governments, tribes and other stakeholders and activates a **Unified Command Center**
- U.S. Department of Interior, Department of Commerce and Department of Agriculture have authority to represent and protect their respective interests
- U.S. States and Territories shall provide a designated State On-Scene Coordinator who will report to the COTP/Unified Command

# Authorities and Responsibilities Under NRT Guidelines (con't)



- All other U.S. agencies shall be involved in the Unified Command
- Port Authorities and local governments shall participate if involved in the selected Place of Refuge
- Tribes may participate if affected
- Private landowners and business owners may be asked to participate as necessary
- If dual sovereigns are involved, both shall designate Coordinators
- If more than one COPT zone involved, the U.S. Coast Guard District Commander shall participate

# Selection of Places of Refuge—NRT Does Not Support Pre-Approval



- NRT DOES NOT support pre-approval of Places of Refuge in U.S. waters because there are no places of refuge that are suitable for all vessels and all situations.
- Selection of Places of Refuge should be made on an “Incident-Specific Basis”
- Rational—
  - All incidents are unique—vessel size and fuel carried
  - Information for a specific location may be out of date
  - Variability of sea conditions
  - Impact on fish and wildlife
  - Other activities near the Place of Refuge
  - Resources—i.e. salvage vessels—available to respond to incident over time

# NRT Supports Pre-Incident Identification of Potential Places of Refuge (PPORs)

- The criteria for PPOR are contained in Appendix 3 to the Guidelines
- Any PPOR selected must be reviewed and refined during an incident specific process

# Incident-Specific Places of Refuge Decision-Making Process—Appendix I (con't)

- **Step 1—Place of Refuge Requested**
- COTP Receives Request from Vessel Master or Representative
- COTP seeks following information from Vessel Representative:
  - Detailed information regarding crew and passengers, including nationality, age
  - All particulars about the Vessel, its flag, ownership, and the status of the vessel and all of its critical equipment
  - Information about all cargo carried, fuel status and whether the vessel is leaking oil
  - Marine forecast and current weather conditions
  - Reason place of refuge is requested and need for assistance, when the problems began
  - Measures taken by the crew to obviate the problem—i.e. ballasting, cargo shift, repairs



# Incident-Specific Places of Refuge Decision-Making Process—Appendix I (con't)

## **Step 1—Place of Refuge Requested:**

- Oil Spill Response Organization
- Information about last port of call, navigation route and destination
- What is necessary to remediate the problem?

## **Step 2—Immediate Action Required by COPT**

- If the Vessel's situation requires immediate action, leaving no time for consulting with stakeholders or other technical experts, COPT will:
  - Evaluate the options
  - Determine whether removal to a Place of Refuge is an option
  - Determine whether Vessel should stay in place, continue on voyage, move away from shore, ground intentionally, or scuttle
  - Activate a Unified Command to address any remaining Issues

# Incident-Specific Places of Refuge Decision-Making Process—Appendix I (con't)

- **Step 3—COTP/Unified Command Request Information from Stakeholders and Other Technical Experts on Vessel Options**
- **Step 4—COTP Unified Command selects vessel option based on input from Stakeholders and Other technical experts**
- This step requires the following balance:
  - Assessment of the Vessel Status and Risk Considerations
  - Response and Salvage Resources Considerations
  - Public Health and Safety Considerations
  - National Defense, Security and Economic and Critical Infrastructure Considerations
  - Balancing of other considerations, including liability, insurance available, requirements of port or harbor authorities for bonding, media and public interest and private property

## The Crossroads

- **Vessel Not Admitted to Place of Refuge:** If the COTP/Unified Command determines NOT to admit the Vessel to a Place of Refuge, no further action need be taken by COTP/Unified Command after Step 4.
- **Vessel Will be Allowed to Place of Refuge:** COTP/Unified Command will complete Steps 5 – 10 ONLY if a Place of Refuge is Selected.

## **Step 5: COTP/Unified Command requests input from technical experts on operational considerations for potential places of refuge locations.**

- Request information from NOAA concerning sea conditions, weather, seasonal consideration
- Seek information from Pilots Association regarding the port or anchorage criteria
- Gather information from Salvage representatives
- Obtain information from Oil Spill response resources
- Seek information from Port authorities

## **Step 6: COTP/Unified Command selects potential places of refuge locations**

- All information relevant to the Port of Anchorage facility selected will be given due consideration
- Available emergency response capabilities will be considered as well
- Salvage and Repair resources will be considered
- Other Command Management Factors will be considered



# Incident-Specific Places of Refuge Decision-Making Process—Appendix I (con't)



**Step 7. COTP/Unified Command provides stakeholders with potential places of refuge locations based on operational considerations**

# Incident-Specific Places of Refuge Decision-Making Process—Appendix I (con't)



**Step 8. Stakeholders provide ranking of potential places of refuge locations to COTP/Unified Command**

## **Step 9. COTP/Unified Command selects place of refuge based on input from stakeholders and other technical experts.**

- COTP will direct vessel to Place of Refuge
- COTP will notify stakeholders
- COTP will inform vessel of any restraints

# Incident-Specific Places of Refuge Decision-Making Process—Appendix I (con't)



**Step 10. COTP/Unified Command prepares documentation of the places of refuge decision-making process**



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# U.S. Coast Guard



# Coast Guard July 17, 2007 Places of Refuge Policy



## General Considerations:

- **Transit Oversight**—Operational Commanders shall impose restrictions on vessel before and in route to the Place of Refuge
- **Risk Informed Decision Making**—Operational Commanders shall exercise responsibility and authority to manage risk in accord with *The Port and Waterways Safety Act* (33 U.S.C. § § 1221 et seq.)
- **National Defense Concerns**—All risks to national security shall be considered in the Places of Refuge selection
- **Safety Concerns**—Operational Commanders shall board stricken vessel only in accord with an approved site safety plan for both Coast Guard and non-Coast Guard employees
- **Force Majeure**—Follow Coast Guard policy regarding force majeure, including the Maritime Operational Threat Response process



# Coast Guard July 17, 2007 Places of Refuge Policy— (con't)



## General Considerations:

- **Notice of Arrival**—Follow the NOA regulations contained in 33 CFR § 160.214. The Coast Guard can waive requirements if they are “unnecessary or impractical for safety, the environment or national security.”
- **Intervention on the High Seas**—Adhere to Coast Guard policy concerning *Intervention on the High Seas Act* (33 U.S.C. § 1471)
- **Financial Responsibility Concerns**—If the Vessel does not have a valid Certificate of Financial Responsibility, contact the National Pollution Funds Center to discuss options.
- **Consult with Justice Department**—Discuss all Letters of Undertaking with DOJ
- **Notifications and International Coordination**—Coordinate with all Stakeholders and adjacent countries
- **Disclaimer**—The COTP has discretionary authority

# Requests for Changes:



- All requests for Changes should be directed to:
  - Places of Refuge Project Officer
    - Office of Incident Management and Preparedness (CG-3RPP-A)
    - 2100 Second Street, S.W.
    - Washington, DC 20593-0001

## Sample Place of Refuge Checklist

Vessel Information					
Name		Flag	Official Number		
Number of Persons on Board			Location		
Crew	Passengers		Longitude	Latitude	
Number Of Crew/Passengers Already Evacuated:			Description: e.g., 20 miles west of Cape Disappointment		
Gross Tons	Length	Draft	Type/Service: e.g., container ship, product tanker, etc.		
Current O/S WX & Sea State			Projected O/S WX		
Owner/Operator/RP <sup>1</sup>	P&I Club		Class Society	Agent	
POC					
Phone					
Notified by vessel master?					
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

<sup>1</sup> Determine which party will be acting as the responsible party and has authority to do so. Under OPA 90 the responsible party is any person owning, operating, or demise chartering the vessel.

**Vessel Information (continued)**

Complete Port State Control Safety &amp; ISPS/MTSA targeting matrix

Complete HIV targeting matrix. *(Classified upon completion)*Ensure vessel has a valid COFR<sup>2</sup>

Cargo		Bunkers	
Type	Amount	Type	Amount
Other HAZMAT: e.g., Ship's stores, etc. <i>(Attach vessel's dangerous cargo manifest if available)</i>			
General description of ship's condition, including any structural damage:			

<sup>2</sup> If vessel does not hold a COFR, coordinate with NPPC and servicing legal office to arrange COFR or other coverage to the extent deemed necessary for entry.

<b>Vessel Information (continued)</b>	
Are there any deaths, injuries, or persons in need of medical assistance?	
If so, treat as SAR incident and prosecute accordingly!	
What is the nature of the problem leading to a need for a Place of Refuge?	
What is the vessel master/rep specifically requesting?	
When did the problems begin?	How long has the crew been up? (fatigue concerns)
Status of the Following Systems:	
Lifesaving (lifeboats, rafts, EPIRB, etc)	
Fire Fighting for Cargo and Accommodation/Machinery Spaces	
Bilge Pumps	
Propulsion	
Steering	
Ship's Service Generator	
Emergency Generator	
Measures Already Taken by the Crew – The attached "Rapid Salvage Survey" may assist in collecting information.	
Repairs	
Ballasting	
Cargo Shifts	

Require the Vessel to take the following actions, as appropriate. Use an Administrative Order for vessels outside of the territorial seas and a COTP Order for vessels inside the territorial seas. The Oil Spill Liability Trust Fund (OSLTF) is available to remove an actual discharge of oil or to prevent or mitigate a substantial threat of an oil discharge.

Action	Notes
Arrange for tugs of sufficient horsepower to render necessary assistance.	
Submit a salvage plan to the Captain of the Port.	
Hire/activate an appropriate Oil Spill Response Organization.	The responsible party must notify the Qualified Individual per the Vessel Response Plan (VRP).
Hire a salvage company capable of addressing the situation.	See the International Salvage Union <a href="http://www.marine-salvage.com">http://www.marine-salvage.com</a> or the American Salvage Association <a href="http://www.americansalvage.org">http://www.americansalvage.org</a> for information about professional salvage standards, including compensation issues.
Hire a marine fire fighting company capable of addressing the situation.	See the National Fire Protection Association for information on professional standards for marine fire fighting. <a href="http://www.nfpa.org">http://www.nfpa.org</a>
Other	
The vessel's representative/responsible party must describe exactly what it is requesting with respect to a Place of Refuge, and what it intends to do there (i.e. repairs). This will require, at a minimum, a salvage plan and a transit plan, both of which will require COTP approval.	



## Notifications by the COTP/FOSC

In addition to notifications required by local policy, the COTP/FOSC shall make the following notifications:

Notification	Number	Notes/Completed
District Command Center		Notify District Command Center, ensure District prevention, response, and legal offices are notified.
Area Command Center		Will normally be notified by the District Command Center
Marine Safety Center (Salvage Engineering Response Team)	(202) 475-3400 or (202) 327-3985	Search for "Salvage Engineering" at <a href="http://homeport.uscg.mil">http://homeport.uscg.mil</a> .
National Pollution Funds Center	(202) 493-6700	<a href="http://www.uscg.mil/hq/npfc/index.htm">http://www.uscg.mil/hq/npfc/index.htm</a>
Appropriate Strike Team	AST (609) 724 0008 PST (415) 883 3311 GST (251) 441 6601	
Area Committee Members		
Natural Resource Trustees		
Other		

Actions by the COTP/FOSC and Unified Command  
(Items most relevant to making a decision regarding a Place of Refuge request)

Action	Notes/Completed
Facilitate the placement of an inspection team on the vessel if safe to do so.	Entry should be made <u>only</u> in accordance with a site safety plan.
Plot the trajectory of the vessel if it is drifting or at risk of losing power or steering.	
Plot the trajectory of the expected spill from the current location.	
Plot the trajectory of the expected spill from each Place of Refuge under consideration.	
Identify and evaluate resources at risk for each Place of Refuge under consideration.	
Review and approve a salvage plan.	
Review and approve a transit plan.	

# Northwest Area Contingency Plan



2016

Also serving as the  
Region Ten Regional Contingency Plan

# NORTHWEST AREA CONTINGENCY PLAN— REGION TEN

- The N.W. Area Contingency Plan (“NW Plan”) contains a section on Places of Refuge in § 9410
- The 18th Amendment of the NW Plan was effective on January 1, 2017
- The NW Plan also serves as the Region Ten Regional Contingency Plan and is a collaborative effort between Washington, Oregon and Idaho.
- The EPA, U.S. Coast Guard Thirteenth District, U.S. Coast Guard Sector Puget Sound, U.S. Coast Guard Columbia River, Washington Department of Ecology (“WDOE”), Oregon Department of Environmental Quality (“DEQ”) and the Idaho Bureau of Homeland Security are participants and stakeholders

## NW PLAN—REGION TEN (cont.)

- The NW Plan is consistent with and tracks the IMO Guidelines, the NRT Guidelines and the Coast Guard Guidelines
- “Selection of a place of refuge by the United States Coast Guard (“USCG”), Captain of the Port (“COTP”) in consultation with other federal agencies, states, tribal and local governments will always be made on a case-by-case basis.”
- All Stakeholders are listed in Attachment A to the NW Plan
- “If time allows, the COTP will activate a Unified Command under the Incident Command System (“ICS”) to address a request for a place of refuge.”

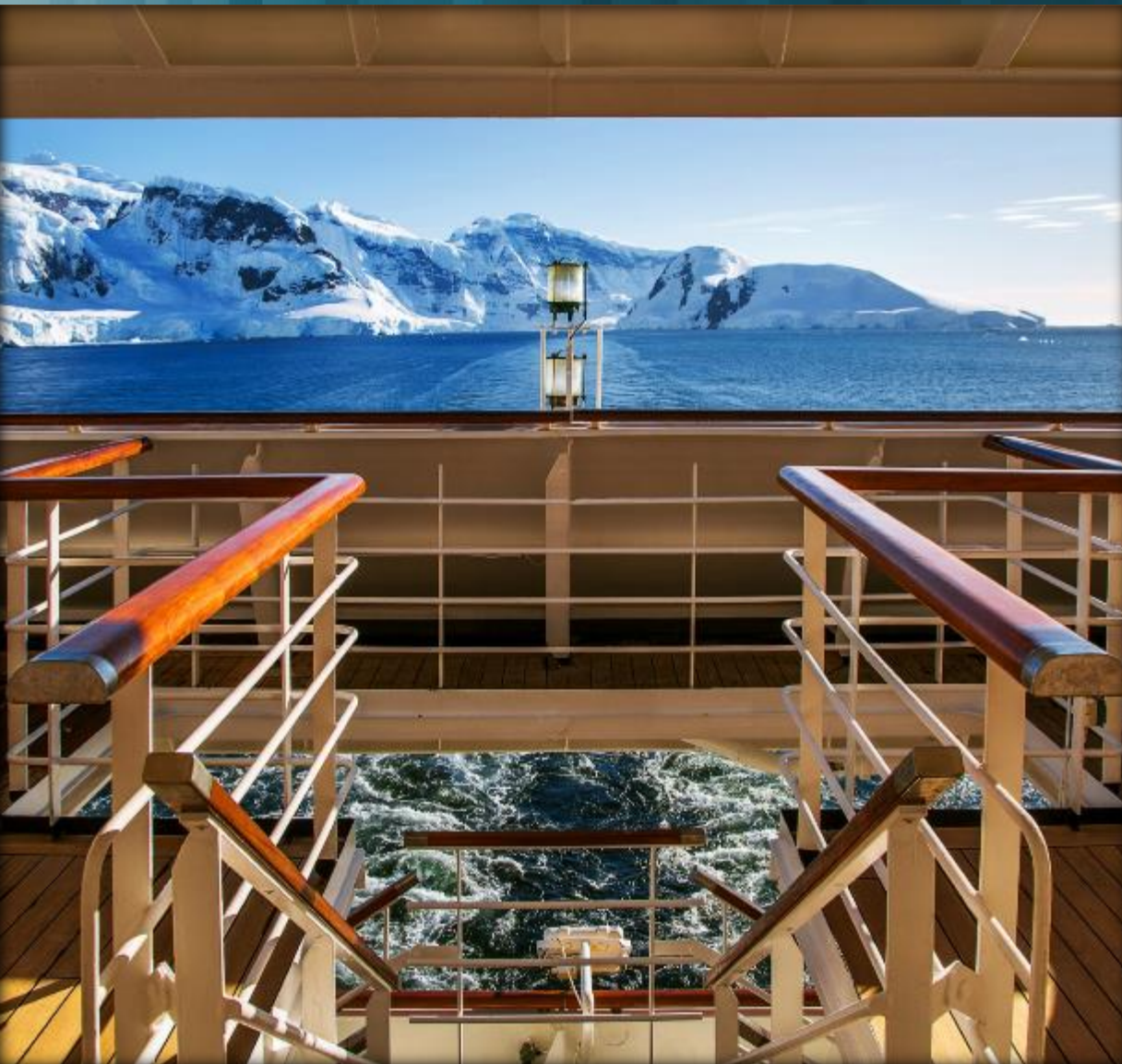
## NW PLAN—REGION TEN (cont.)

- Any request for a Place of Refuge that involves or may involve an International Board, will be activated as per the ***Joint Canada/United States Pacific Response Plan***.
- If more than one Area Contingency Plan will be involved, existing cross-jurisdictional protocols will be activated.
- In cases of National Security, the COTP, acting as the ***Federal Maritime Security Coordinator*** may have access to Sensitive Security Information that must be considered on a case by case basis.

# STATE AND LOCAL JURISDICTION UNDER THE PLAN

- Washington, Oregon and Idaho have authority to protect state interests in State waters. Each State has jurisdiction over state owned shoreline and in nearshore (inland waters) waters to 3 miles.
- WA WDOE and OR DEQ have predesignated **State On-Scene Coordinators (SOSCs)**
- Port Authorities and Local Governments have authority over inland near shore waters, including ports and harbors. A local government or Port Representative may serve as a Local On-Scene Coordinator per the NW Plan.





# The Polar Code:

A New Regulatory Framework for Maritime Activity in the Arctic and Antarctic









# IMO POLAR CODE





U. S. COAST GUARD

# History and Development

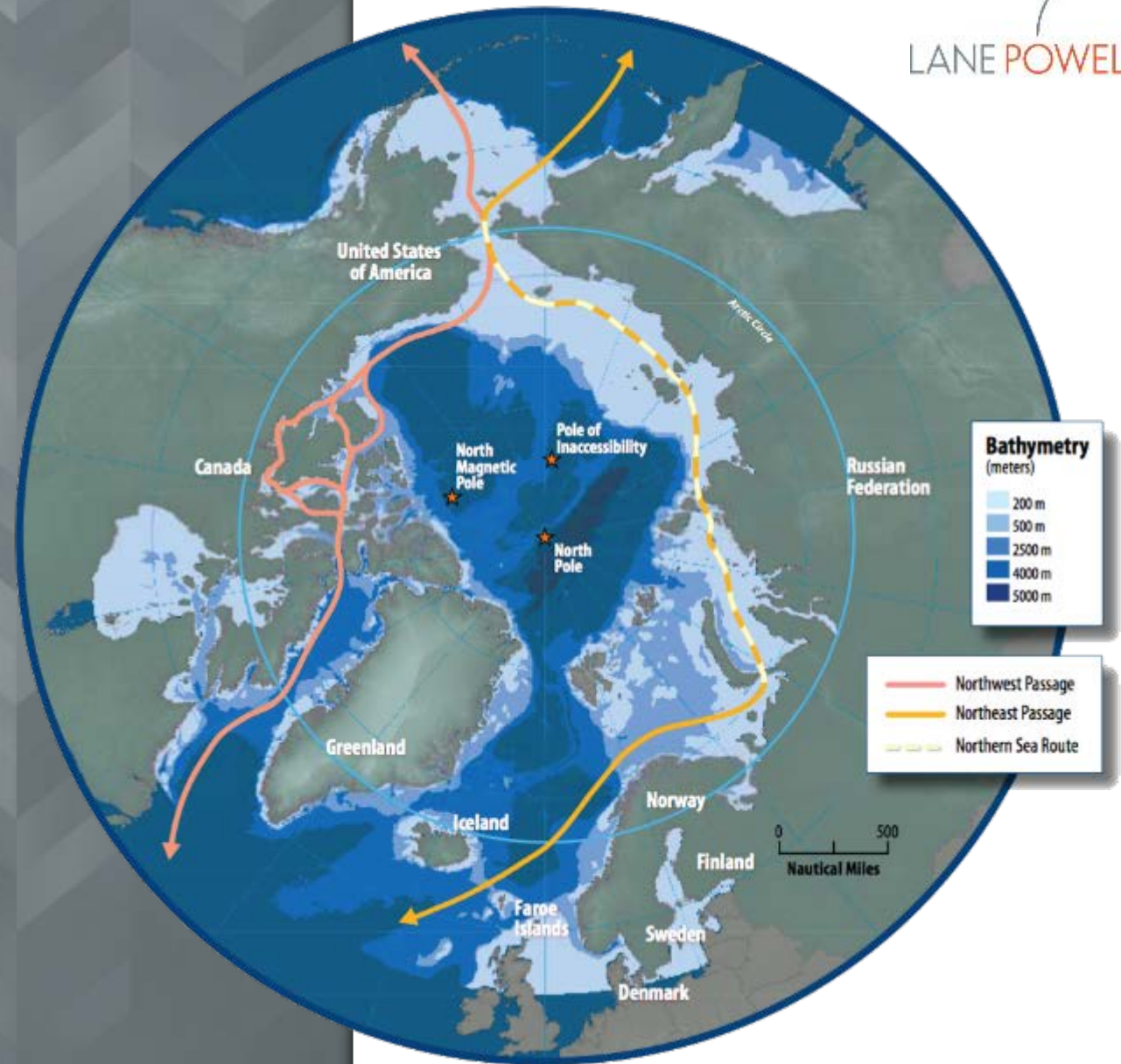


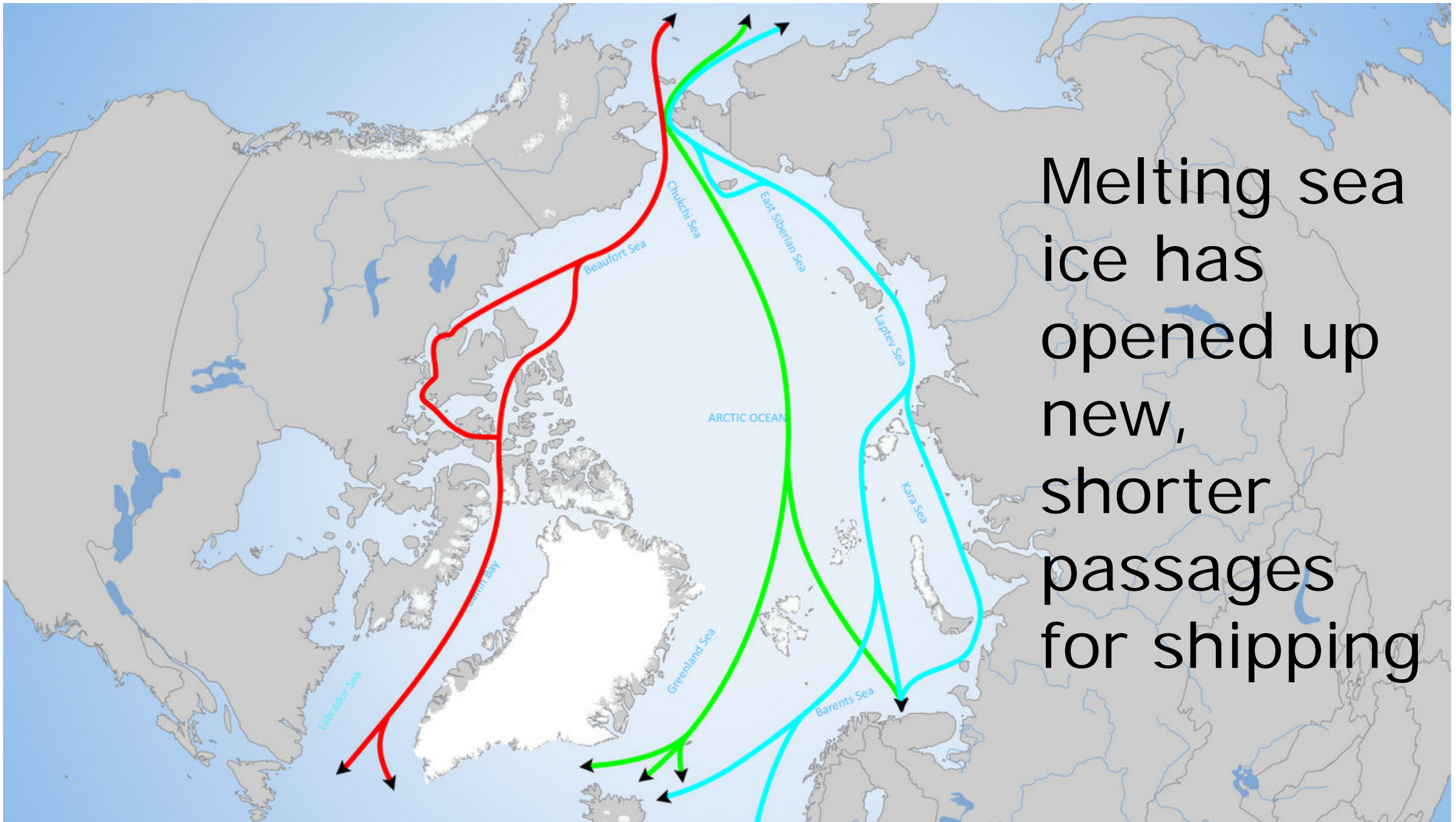
# Impetus for the Polar Code

New routes for shipping

New dangers to vessels

New threats to the  
environment





Melting sea ice has opened up new, shorter passages for shipping





**Icy conditions  
create unique  
hazards for  
maritime  
operations.**



Marine pollutants threaten fragile ecosystems

# Development of the Polar Code

2002  
IMO  
publishes  
Guidelines  
for Ships  
Operating in  
Polar Waters  
(non-  
binding)

2008  
IACS  
publishes  
Unified  
Requirements  
Concerning  
Polar Class  
(IACS Polar  
Rules)

2009  
IMO begins  
drafting a  
mandatory  
Polar Code

2014  
IMO adopts  
safety  
measures of  
the Polar  
Code,  
amending  
SOLAS

2015  
IMO adopts  
pollution  
prevention  
measures of  
the Polar  
Code,  
amending  
MARPOL  
Annexes I,  
II, IV, and V

2016  
IMO adopts  
training  
standards,  
amending  
STCW

January 1,  
2017  
Polar Code  
enters into  
force

The goal of this Code is to provide for:

- Safe Ship Operation
- Protection of the Polar Environment by addressing Risks present in Polar Waters

# Scope of Regulations

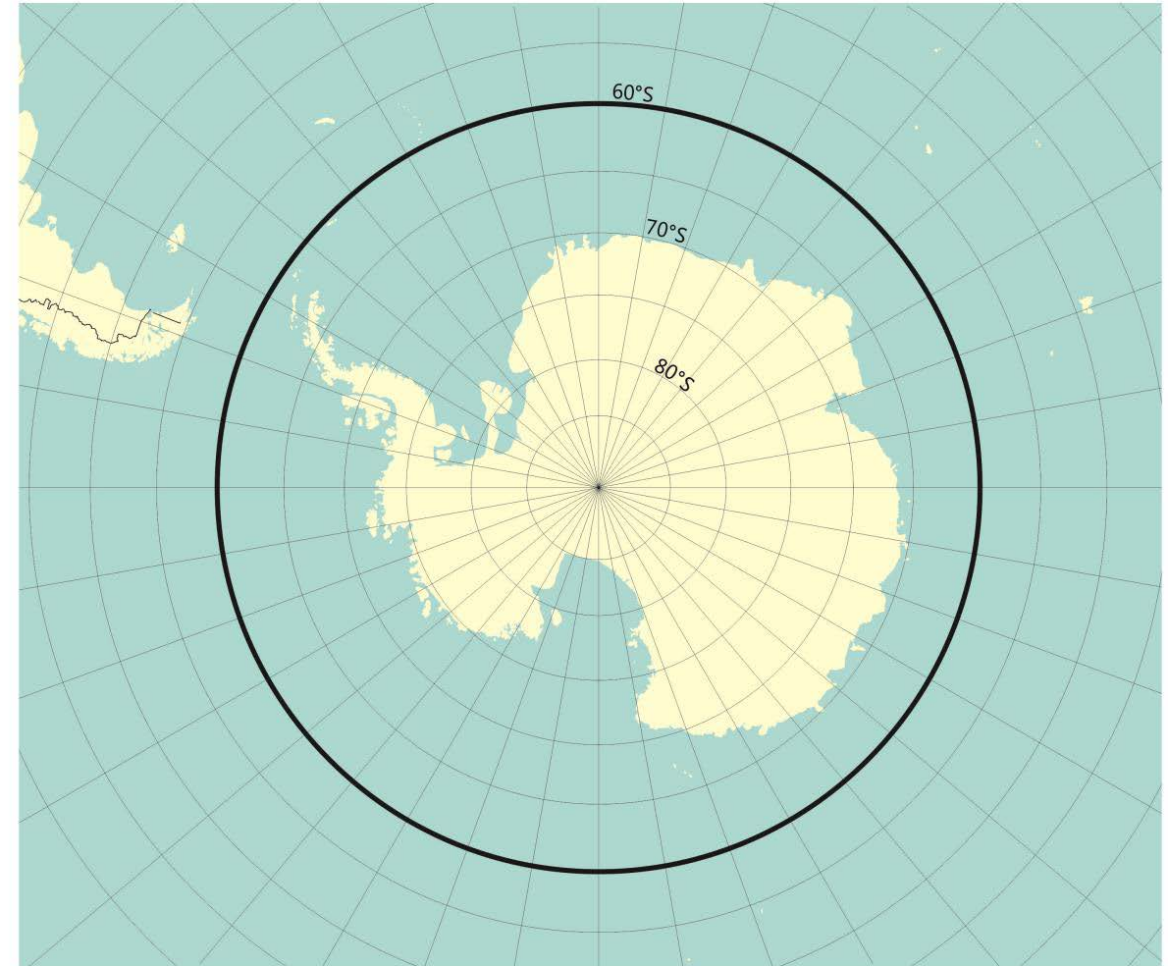
Geographic  
area

Ship  
Classification

Subject  
Matter



# Geographic Scope



Source: MEPC 68/21/Add.1 Annex 10, P. 9.



# Ship Categories

**Category A:** Designed for operation in polar waters in at least medium first-year ice (70-120 cm thickness), which may include old ice inclusions.



**Category B:** Ships not included in category A, designed for operation in polar waters in at least thin first-year ice (30-70 cm thickness), which may include old ice inclusions.



**Category C:** Designed to operate in open water or in ice conditions less severe than those included in categories A and B. Many Code regulations do not apply to Category C ships.



Source: *Polar Code Introduction, 2.1-2.3; Pictures from American Bureau of Shipping, "IMO Polar Code Advisory," (January 2016).*



Provides for safe ship navigation and protects the environment by adding to existing IMO requirements

## Safety (Part I)

Adds a new chapter to SOLAS (Ch. XIV)

## Environment (Part II)

Amends MARPOL Annexes I, II, IV, and V

## 1.3 Certification

1.3.1 Every ship to which this Code applies shall have on board a valid Polar Ship Certificate

# Polar Ship Certificate

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the applicable safety-related provisions of the International Code for Ships Operating in Polar Waters.
- 2 That the survey<sup>3</sup> showed that the structure, equipment, fittings, radio station arrangements, and materials of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the relevant provisions of the Code.

Category A/B/C <sup>4</sup> ship as follows:				
Ice Class and Ice Strengthened Draft Range				
Ice class	Maximum draft		Minimum draft	
	Aft	Fwd	Aft	Fwd

2.1 Ship type: tanker/passenger ship/other<sup>4</sup>

2.2 Ship restricted to operate in ice free waters/open waters/other ice conditions<sup>4</sup>

2.3 Ship intended to operate in low air temperature: Yes/No<sup>4</sup>

2.3.1 Polar Service Temperature: .....°C/Not Applicable<sup>4</sup>

2.4 Maximum expected time of rescue .....days

3 The ship was/was not<sup>4</sup> subjected to an alternative design and arrangements in pursuance of regulation(s) XIV/4 of the International Convention for the Safety of Life at Sea, 1974, as amended.

4 A Document of approval of alternative design and arrangements for structure, machinery and electrical installations/fire protection/life-saving appliances<sup>4</sup> and arrangements is/is not<sup>4</sup> appended to this Certificate.

5 Operational limitations

The ship has been assigned the following limitations for operation in polar waters:

5.1 Ice conditions: .....

5.2 Temperature: .....

5.3 High latitudes: .....

- Ship category and ice class information
- Thresholds for regulation
  - Ship type
  - Ice operations
  - Temperature operations
- Alternative design and arrangements
- Operational Limitations
  - Ice conditions
  - Temperature
  - High Latitude

<sup>3</sup> Subject to regulation 1.3 of the International Code for Ships Operating in Polar Waters.

<sup>4</sup> Delete as appropriate.

# **PART I: Safety Measures**

Adopted November 2014 by the  
IMO Maritime Safety Committee

Entered into force January 1, 2017

# Application of PART I: Safety Measures

- **New ships:** Applies to ships constructed on or after January 1, 2017.
- **Existing ships:** Applies either when the first intermediate or renewal survey occurs *or* January 1, 2018 – whichever occurs first



# Organization of PART I: Safety Measures

- **Part I-A:** 12 chapters outline mandatory regulations that heighten existing SOLAS safety provisions
- **Part I-B:** Additional guidance regarding the provisions of the introduction and Part I-A (non-binding)

# **PART I-A**

## **Safety: Equipment**

- Lifeboats must be partially or entirely enclosed
- Adequate thermal protection must be available for all persons on board
- Fire safety equipment operable in cold temperatures and usable by persons wearing cold weather gear
- Ice removal gear (electric and pneumatic devices, axes, clubs)

# PART I-A

## Safety: Operations & Manning

- Polar Ship Certificate and Polar Water Operational Manual must be on board, including:
  - Information regarding ship capabilities and limitations
  - Procedures to be followed under normal and extraordinary conditions
  - Emergency response provisions for salvage, search, and rescue
- Ships must be able to receive up-to-date information, including ice information, for safe navigation

# PART I-A

## Safety: Design & Construction

- Structural materials suitable for operation at polar service temperature
- Closing appliances and doors relevant to watertight and weathertight integrity
- Cold weather design considerations, including:
  - Minimization of ice accretion
  - Potential flooding from hull penetration due to ice impact
  - Machinery installations for snow ingestion and freezing liquids

# PART II: Pollution Prevention Measures

"The most significant threat from ships to the Arctic marine environment is the release of oil through accidental or illegal discharge."

Arctic Counsel's Arctic Marine Shipping Assessment, 2007

# Organization of PART II: Pollution Prevention Measures

- **Part II-A:** 5 chapters outline mandatory rules that heighten existing MARPOL environmental regulations
- **Part II-B:** Additional guidance to Part II-A (non-binding)



# **PART II-A**

## **Pollution Prevention: Oil**

- Prohibits discharge of oil or oily mixtures
- Requires double hull and double bottom for all oil tankers
- Bans heavy fuel oil in the Antarctic

# PART II-A

## Pollution Prevention: Sewage

- Prohibits discharge, unless a ship has an approved sewage treatment plant
- Sewage that is *not* disinfected may not be discharged within 12 nm of any ice shelf or fast ice
- Disinfected sewage may not be discharged within 3 nm of any ice shelf or fast ice

# PART II-A

## Pollution Prevention: Garbage

- Disposal of any plastics prohibited (under MARPOL)
- Discharge of food waste onto ice prohibited
- Discharge of animal carcasses prohibited
- Discharge of cargo residues, cleaning agents, or additives in washing water permitted if: solutions are not harmful to the marine environment; both departure and destination ports are within Arctic waters; and those ports do not have adequate reception facilities (applies to Antarctic under MARPOL)

# Unresolved Issues

- Use of heavy fuel oil in the Arctic risks oil spills (only banned in the Antarctic)
- Silent on black carbon, a climate-forcer second only to carbon dioxide
- Category C ships may operate in low-ice conditions, but weather conditions may alter unexpectedly
- Applies only to SOLAS ships on international voyages, despite a significant amount of domestic Arctic traffic

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AND POLICY

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Volume 84, Number 2



**The Polar Code:  
A Regime Safeguarding  
Human Life and the  
Marine Ecosystems  
of Earth's Frigid Zones**  
By Katie Smith Matison

**The Strange Career of  
Independent Voting Trusts  
In U.S. Rail Mergers**  
By Russell Pittman

**The Political Economy  
of Regulatory Costing:  
The Development of the  
Uniform Rail Costing System**  
By William F. Huneke



**THE POLAR CODE: A REGIME SAFEGUARDING  
HUMAN LIFE  
AND THE MARINE ECOSYSTEMS OF EARTH'S  
FRIGID ZONES**

*Katie Smith Matison<sup>1</sup>*

**I. THE INCREASE IN SHIPPING TRAFFIC IN  
POLAR WATERS SPARKS  
ENVIRONMENTAL AND SAFETY  
CONCERNS**

Earth's polar regions are shrouded by vast ice caps surrounded by frigid water littered with treacherous sea ice. The highest latitudes of the polar regions alternate between 24-hour total darkness in the winter and endless daylight in the summer months. Both the Arctic and Antarctic zones of the world are inhospitable to human life. Marine casualties in the polar zones often result in loss of life as a result of the harsh polar conditions. Moreover, the polar regions support delicate ecosystems and marine environments, which scientists uniformly agree are extremely susceptible to the threat of global warming and must be protected.<sup>2</sup>

The Arctic zone is generally described as that region above 60 degrees north and includes the North Pole. The Arctic Ocean, which is the smallest of the earth's oceans, is

<sup>1</sup> Katie Smith Matison is a shareholder in the Seattle office of Lane Powell P.C. and is the Chair of the firm's Transportation Practice. She served as the President of the Association of Transportation Law Professionals from June 2012 through June 2013. She was awarded a J.D. and LL.M. in Admiralty from Tulane University School of Law.

<sup>2</sup> The author acknowledges the valuable assistance of Brynn Felix, student at Boston University School of Law, in the preparation of this article.





# BWM CONVENTION



# TOPICS

- International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention)
- Biofouling Guidelines – Resolution MEPC.207(62)
- Recent Adoption of Strategy to Reduce Greenhouse Gas Emissions (GHG) from International Shipping









# INVASION OF THE BODY SNATCHERS – ALIEN PREDATORY SPECIES AND AQUATIC ORGANISMS DESTROYING MARINE ECOSYSTEMS

- IMO Studies of Invasive Aquatic Species
- There are several hundred examples of IAS that cause disease and eradicate local species.
- IMO lists some of the most threatening IAS on its website.
- There is a Top 100 list of Super IAS.
- NOAA also has a website for some IAS of concern.







Could Cholera have entered Mozambique via shipping at the port of Beira?

# CHOLERA VIBRIO CHOLERAE

- Gram-negative comma-shaped bacterium.
- Natural habitat is brackish or saltwater.
- Some strains cause the disease cholera – a bacterial disease that can be fatal within a matter of hours.
- Introduced to South America and Gulf of Mexico.
- Impact – Cholera epidemics are reported to have been associated with ballast water.





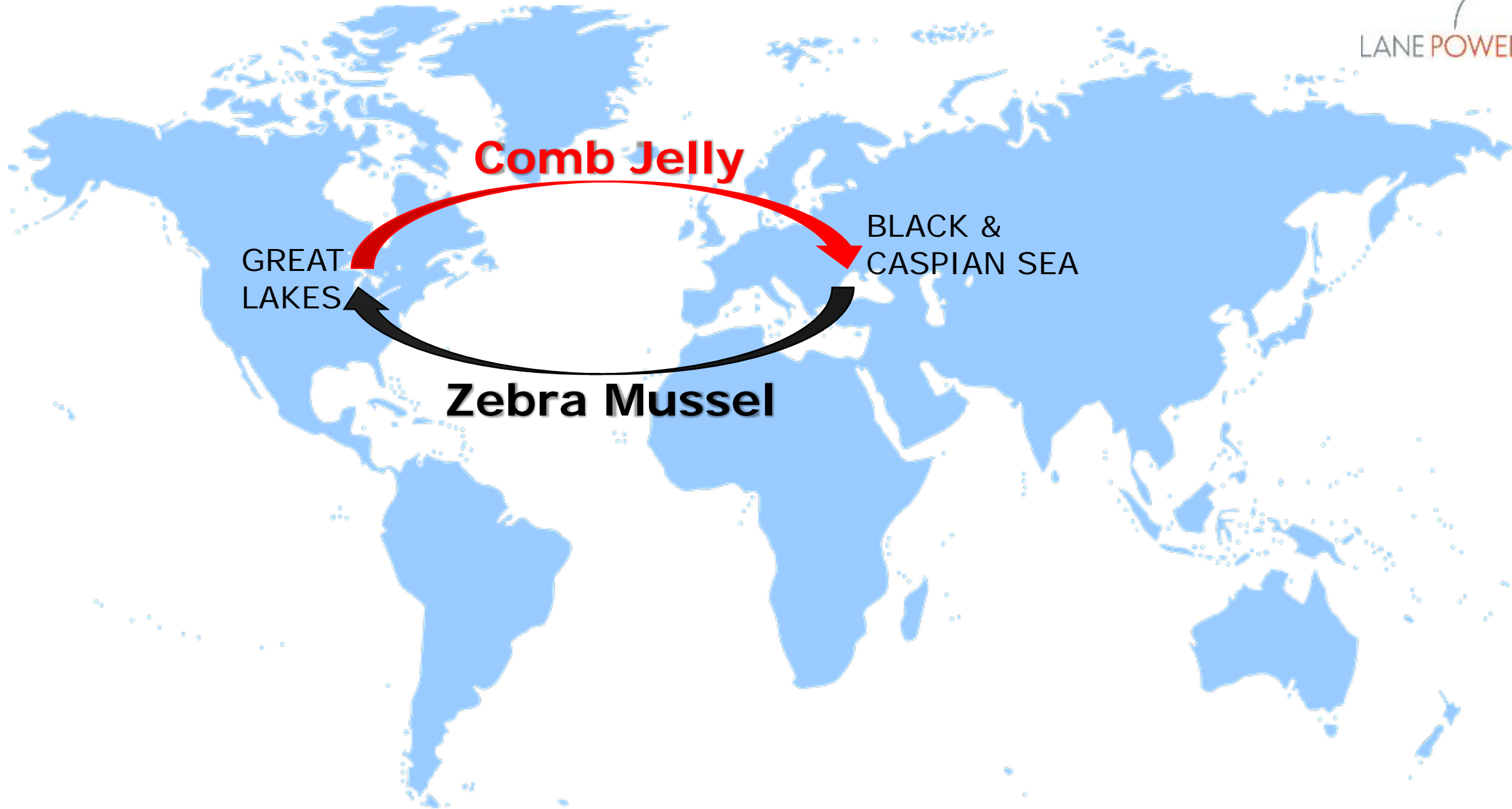


# NORTH PACIFIC SEA STAR – *Asterias Amurensis*

- Native to North Pacific – China, Korea, Russia and Japan
- Introduced to Southern Australia, Alaska, Aleutian Islands, Europe and Maine
- Listed as one of the top 100 worst invasive species
- Grows to about 50 cm
- Voracious appetite – reproduces in large numbers, reaching plague proportions. Eats shellfish.







**Comb Jelly**

GREAT LAKES

BLACK & CASPIAN SEA

**Zebra Mussel**

# THE COMB JELLYFISH – MNEMIOPSIS LEIDI

- Native to Eastern seaboard of Americas
- Introduced to Black Sea, Azov Sea and Caspian Sea
- No natural predators
- Rapid reproduction, excessive feeding on zooplankton
- Caused the collapse of Black Sea fisheries in 1990s
- Reduced the dolphin population







# STOP THE INVASION



**THIS IS WHAT WE STAND TO LOSE!**

**WHAT'S HAPPENING?** Lionfish are invasive species from the Indo-Pacific that were introduced to the Atlantic through the aquarium trade. They consume vast quantities of more than 50 native fish and invertebrate species, some of which are economically and ecologically important.

**WANT TO HELP?** Support more research on lionfish and their impacts. Report lionfish sightings. Assist with lionfish removals. Eat them before they eat your lunch. Spread the word. Prevent the next marine invasion.

**LET'S TAKE BACK OUR SEA!**

<http://flowergarden.noaa.gov>

[https://nmsflowergarden.blob.core.windows.net/flowergarden-prod/media/archive/document\\_library/eddocs/fgblionfishposter.pdf](https://nmsflowergarden.blob.core.windows.net/flowergarden-prod/media/archive/document_library/eddocs/fgblionfishposter.pdf)

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# THE LIONFISH

- Native to South Pacific and Indian Oceans
- Introduced to Florida, Atlantic, Gulf of Mexico and Caribbean
- Can tolerate brackish coastal zones as well
- NOAA has a Lionfish portal because of U.S. concern
- Eat fish – few predators and destroy habitats and commercial fisheries
- Dominate coral reefs

# CULPRIT OF THE BIO-INVASION – Ballast Water Distributed in Ports and Major Shipping Routes

- “Ballast Water” – defined by BWM Convention, Article 1 ¶ 2 is “water with its suspended matter taken on board a ship to control trim, list, draught, stability or stresses of the ship.”
- Ballast water is primarily used in steel vessels and is essential to safely operate ships.
- Ballast water “compensates for weight variations because of changes in cargo weight, fuel levels and water consumption, and can be discharged to control the ship.
- Ballast water contains bacteria, microbes, eggs, larvae and cysts.

## Culprit (con't)

- An increase in shipping traffic and trade route expansion has made ballast water discharge and spread of IAS noticeably prevalent over the past 3 decades.
- Alien species introduction noticed in North Sea in 1903.
- Canada and Australia approached the IMO Marine Environment Protection Committee (MEPC) in the late 80s.
- Bio-invasions of IAS are increasing world-wide at an alarming rate.

# IMO MEPC COORDINATES INTERNATIONAL RESPONSE TO THE IAS PROBLEM

- Article 196 of the United Nations Law of the Sea creates a protocol for international coordination of efforts to minimize and eradicate pollution of the marine environment, including IAS.
- 1991 – MEPC adopted Resolution MEPC.50(31) – *International Guidelines for Preventing the Introduction of Unwanted Aquatic Organisms and Pathogens from Ships' Ballast Water and Sediment Discharges.*
- 1997 – IMO adopted Resolution A.868(20) – *Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens.*



# 2004 BWM CONVENTION

- More than 14 years of intense, complex negotiations and analysis by Member States and IMO Committees
- February 13, 2004 London Conference – Member States Adopt *International Convention for the Control and Management of Ships' Ballast Water and Sediments*

# BWM CONVENTION ENTERED INTO FORCE

- BWM Convention entered into force September 8, 2017
- Purpose is to control “Harmful Aquatic Organisms and Pathogens” (Article 4)
- Applies to “Sediments” defined as “matter settled out of Ballast Water within a ship.”
- Applies to ships in international trade flying the flag of a Party

# BWM CONVENTION ENTERED INTO FORCE

- Does not apply –
  - Ships not designed to carry ballast water
  - Ships that operate only in waters of jurisdiction of one Party
  - Ships not operating in international trade
  - Warships or naval ships for non-commercial use

# REQUIREMENTS FOR BWM CONVENTION

- All Ships must implement a ballast water management plan
- All ships must carry a ballast water record book and perform ballast water management procedures in accord with certain standards
- Ships performing ballast water exchange must do so with 95% efficiency
- Ships shall install an on-board Ballast Water Management system that is in compliance with IMO standards.



# BWM CONVENTION (con't)

- Article 1 defines Ballast Water Management as “mechanical, physical, chemical and biological processes, either singularly or in combination, to remove, render harmless, or avoid the uptake of discharge of Harmful Aquatic Organisms and Pathogens within Ballast Waters and Sediments.”
- Regulation D-3 of the BWM Convention requires that Ballast Water Management Systems must be approved by Administration (or the Flag State under whose authority the ship is operating).
- Ships must carry an International Ballast Water Certificate.

# U.S. STRINGENT CONTROL OF BALLAST WATER

- U.S. is not a Party to the BWM Convention.
- U.S. has U.S. Coast Guard Regulations that are equally as stringent as the BWM Convention.
- U.S. Coast Guard regulations require many ships operating and discharging ballast water in U.S. waters to use a BWM system approved by the U.S. Coast Guard.

# U.S. COAST GUARD REGULATIONS

- The Coast Guard regulations include testing standards.
- U.S. Coast Guard has approved three ballast water management systems that also comply with IMO standards.

# COAST GUARD (con't)

- Coast Guard regulations apply to any sea going vessel operating in U.S. waters within 12 nautical miles of the baseline to manage ballast water in accord with the following:
  - U.S. type approved ballast water management system;
  - Temporary use of a foreign ballast water management system accepted by Coast Guard that meets requirements of 33 CFR Part 151;



# COAST GUARD (con't)

- Use and discharge of ballast water obtained exclusively from a U.S. public water system;
- Discharge of ballast water to a reception facility; and
- Prohibited discharge of unmanaged ballast water inside 12 nautical miles.

# BIOFOULING – Another Portal for Alien Invasions and hitchhikers

- The accumulation of aquatic organisms on ship's hulls also is a source of transmission of IAS
- IMO recognizes spread of IAS as one the greatest threats to the marine environment.
- IMO commenced studying biofouling in 2006

# WANTED – DEAD OR ALIVE IAS CREATURES FROM ANOTHER WORLD







<https://www.nwcouncil.org/news/blog/council-urges-inspections-at-lake-mead-to-prevent-spread-of-invasive-mussels/>







# ZEBRA MUSSEL – DREISSENA POLYMORPHA

- Native to Eastern Europe—Region of the Black Sea
- Introduced into Ireland, Baltic Sea, North America
- Fouls all available hard surfaces in mass numbers and displaces native species; causes fouling of other structures and vessels; impacts infrastructure, blocks pipes and irrigation ditches
- U.S. economic costs for 10 years was \$1B





# ASIAN KELP – UNDARIA PINNATIFIDA

- Indigenous Northern Asia
- Transferred to Southern Australia, New Zealand; West Coast U.S.
- Extreme Rapid growth and displaces other marine plants and life
- Impacts Commercial Shellfish Stocks



# IMO RESOLUTION MEPC.207(62) GUIDELINES

- IMO Guidelines are not mandatory
- Guidelines adopted by the Marine Environmental Protection Committee (MEPC) of the IMO
- Only recommend that every ship maintain a Biofouling Management Plan and Biofouling Record Book on Board.
- Also MEPC.1/Circ. 792 applies to recreational vessels less than 24 meters in length which are also believed to spread IAS.

# U.S. COAST GUARD REGULATIONS RE BIOFOULING



- Mandatory Regulations
- 33 C.F.R. 151.2050(e) requires every vessel with ballast tanks operating in U.S. Waters must rinse anchors and anchor chains when anchor is retrieved to remove organisms and sediments at their place of origin.
- 33 C.F.R. 151.2050(f) requires vessels with ballast tanks operating in U.S. waters to remove fouling organisms from the vessel hull, piping and tanks on a regular basis and to dispose of any removed substance in accord with local, State and Federal regulations.
- Coast Guard regulations require every Ballast Water Management Plan to include detailed fouling maintenance procedures.



# STRATEGY FOR REDUCTION OF GREENHOUSE GAS EMISSIONS (GHG)

- At the April 13, 2018 IMO meeting in London – MEPC Committee during 72nd Session adopted an initial strategy to reduce GHG.
- This GHG initiative is simply a preliminary strategy to reduce and eliminate GHG from international shipping that contributes to global warming.



# STRATEGY GHG (con't)

- The initiative will be reviewed and work will continue at future MEPE Sessions.
- The goal is to reduce CO2 emissions across international shipping by at least 40% by 2030.
- Goal is to reduce CO2 emissions by 70% by 2050.



# MARPOL Convention: Guidelines to Reduce Plastic from Ships



# Marine Contamination from Plastic Debris has Reached **Catastrophic** Levels



Plastic Debris and Refuse is easily  
detected in all oceans of the world.

# Marine Contamination from Plastic Debris has Reached **Catastrophic** Levels



Some scientists predict that by 2050, the quantity of marine plastic littering the world's waters will exceed the number of fish and the resulting damage to the environment will be irreversible.



# Marine Contamination from Plastic Debris has Reached **Catastrophic** Levels



An Example is the Great Pacific  
Garbage Patch which is twice the  
size of the continental United States.

**WELCOME**  
TO THE  
**GREAT PACIFIC**  
**GARBAGE PATCH**  
**POPULATION**  
**100,000,000 TONS OF PLASTIC**



9.26.2019

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"Plastic Oceans Social Awareness Campaign" by Vickie de Laplante licensed under CC BY-ND 4.0

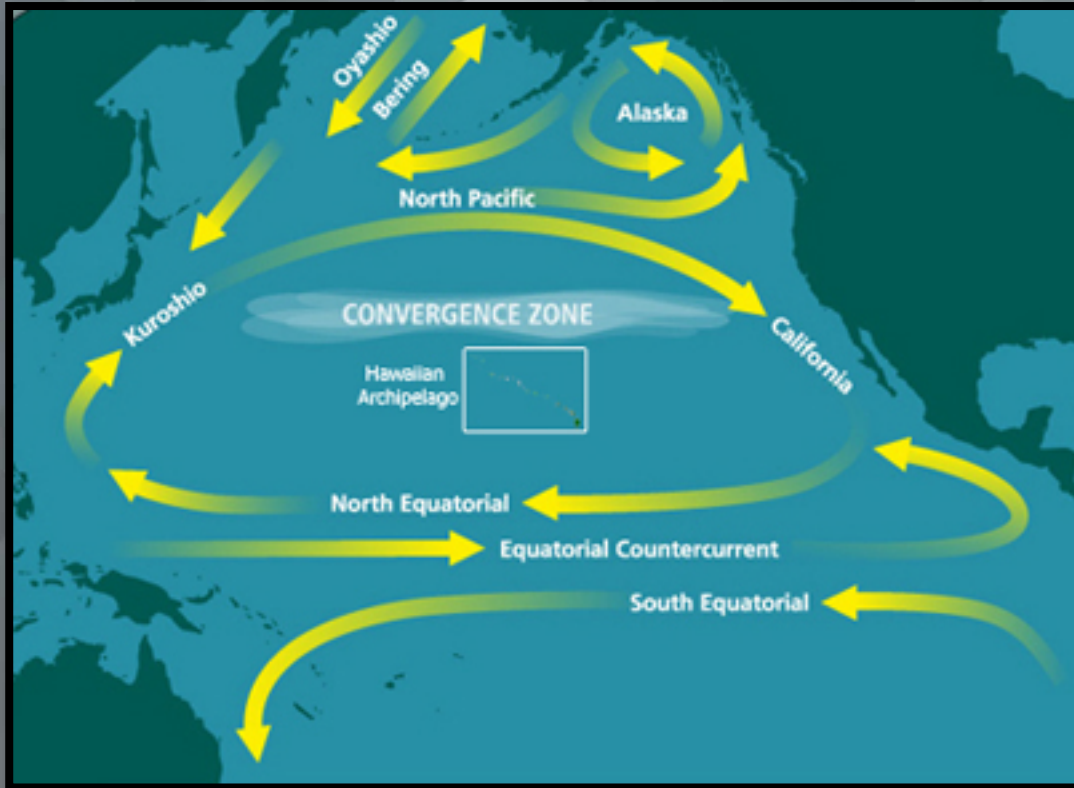










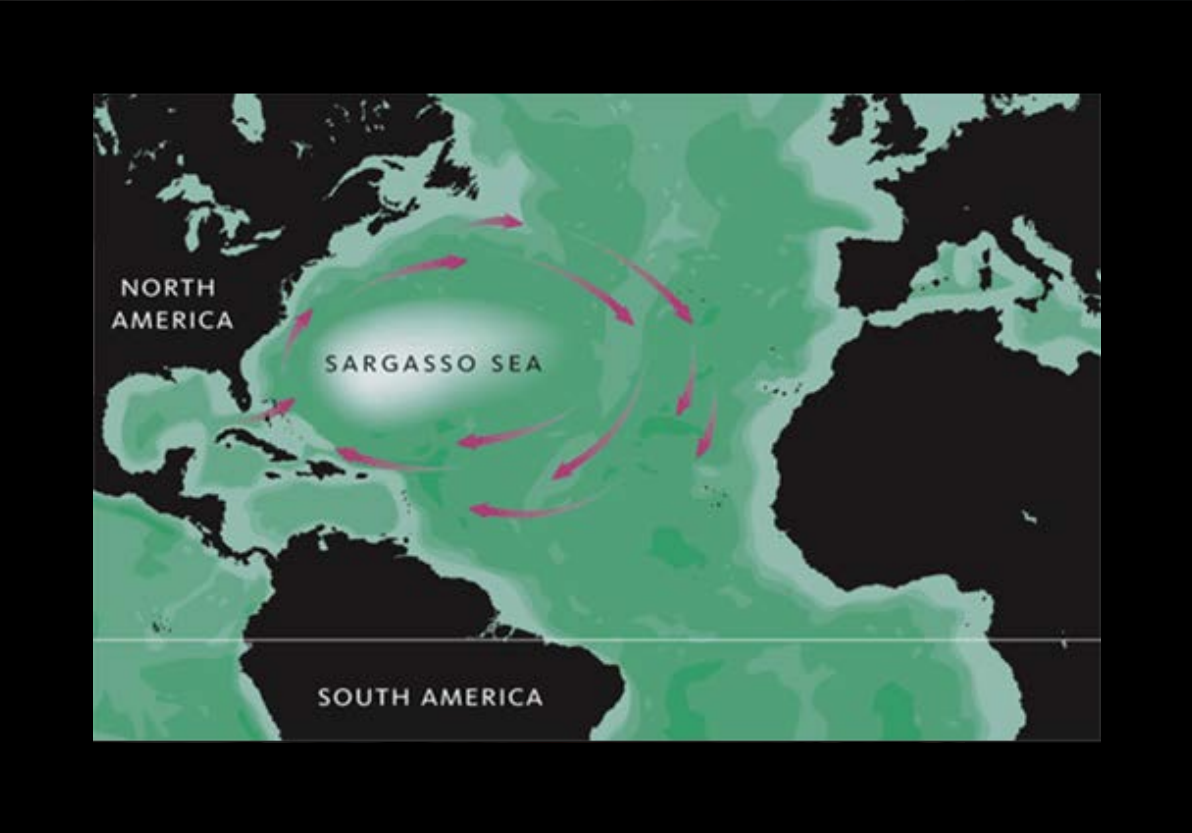


Public domain image from NOAA

The patch is created in the gyre of the North Pacific Subtropical Convergence Zone.

- The most significant amount of plastic debris discovered to date is located in the North Atlantic region, including the Sargasso Sea.





20%

Only 20 percent of the plastic garbage littering the oceans is caused by either the shipping industry or the off-shore oil industry.



# TRASH



9.26.2019

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The New Threat (Sea Pollution poster)  
by Stamatis Kardaris licensed under  
CC BY-NC 4.0

## Why is Plastic such a problem?

- It degrades very slowly—1 piece of plastic may not decompose for more than 600 years—although scientists admit this is only speculation.
- Fish and shellfish ingest microplastics, potentially threatening the environment and food safety.



Plastic debris leaches known carcinogens, including polychlorinated biphenyls (PCB) and polycyclic aromatic hydrocarbons (PAH) into the marine environment.





Plastic nets often trap, strangle and drown marine mammals and litter the seabed.





9/26/2019

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Credit: D-Keine via Getty

# Annex V MARPOL

- IMO Action Plan—Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL) was entered into force in 1988 and prohibits discharge of plastics into the sea.
- Existing IMO Guidelines implementing Annex V attempt to implement change and eliminate plastic marine litter.

# IMO Action Plan

- In March 2019 the IMO Action Plan designed by the IMO Marine Environmental Protection Committee (MPEC) was a highlighted topic at the United Nations Environmental Assembly held in Nairobi, Kenya.
- It is universally recognized that marine plastic litter is a crisis.



# IMO Action Plan

IMO Action Plan charts the following course to eliminate harmful disposal of plastics:

- Reducing marine plastic litter by shipping trade;
- Enhancing public awareness, education and training of seafarers;



# IMO Action Plan

- Improving the effectiveness of port receptacles and facilities to reduce marine plastic litter disposal in the ocean;
- Reducing plastic litter generated from and retrieved by fishing vessels;

# IMO Action Plan

- Improving the global understanding of the contribution of the shipping industry to the marine plastic litter; and
- Improving the understanding of the regulatory framework associated with marine plastic litter from ships.

- IMO's MPEC Committee will complete the agreed actions by 2025
- The IMO Action Plan preventing ocean dumping will apply to all ships, including fishing vessels.

- The IMO's continuing Action Plan is intended to meeting the targets set in the United Nations 2030 Sustainable Development Goal 14 on the Oceans.



## Additional Concrete Measures Under Consideration to Implement Goals Are:

- Study of the adequacy of port refuse facilities
- Consideration whether marking fishing gear should be mandatory
- Mandatory reporting of loss of fishing gear
- Review of provision relating to training of fishing vessel personnel regarding the impact of plastic litter.



# MARPOL – Reducing Sulfur Oxide in Ship's Emissions by 2020



- Ship's bunker oil is heavy fuel oil which contains Sulphur that is contained in ship emissions
- Sulphur oxides cause respiratory distress in humans
- Sulphur oxides cause damage to the environment, including acid rain that destroys the marine environment

- IMO regulations to reduce Sulphur oxide emissions from ships implementing ANNEX VI to the MARPOL Convention came into force in 2005
- Since that time, permissible Sulphur oxide emission standards have been drastically reduced.



- In 2019, the Guidelines for reduction of Sulphur emissions under MARPOL Annex VI were adopted by MEPC Committee
- In 2020—Sulfur oxide emissions will be cut to 0.50% mass by mass from 3.5% mass by mass
- New standards apply to all ships.

- How are the New Standards for Emissions Implemented?
- Fuel with less Sulfur content
- Improved emissions equipment on ships—Some newer ships are equipped with scrubbing systems known as exhaust gas cleaning systems that extract the Sulphur from the emissions
- IMO has guidelines also for fuel suppliers



# Shipping is Moving into the Digital Age



# IMO Convention on Facilitation of International Maritime Traffic (FAL Convention)

- Adopted in 1965 to implement streamlined logistics for transport of passengers, ships and cargo in international trade
- Stated purpose—avoid marine traffic delays, stimulate inter-governmental cooperation and increase uniformity in marine industry.



# June 2019

Sunday	Monday	Tuesday
26	27	

# May 2019

Sunday	Monday	Tuesday
28	29	30

# April 2019

Sunday	Monday	Tuesday
31	1	2
		9

- Effective April 8, 2019, all Contracting Governments must Comply
- There is a minimum 12 month period to implement start up

Amendments require three additional categories of documents shore authorities may require of arriving vessels—including

- Security-related information pursuant to SOLAS regulation XI-2/9.2.2
- Advance cargo information for customs' review; and
- Advanced notification forms for waste delivery to port reception facilities.

- IMO Encourages *Single Window* system—or portal for data exchange between vessels and ports
- Primary purpose is to funnel all critical information to a port, including the arrival, berthing and departures of ships as well as the data for cargo and arriving and departing passengers.





# Digital Age of Shipping

- The *Single Window* requirement to provide electronic information is an important international step toward simplifying international voyages for the maritime trade.
- IMO has standard forms for cargo declarations, ship's stores; crew effects; crew lists and passenger manifests; and dangerous goods.



# QUESTIONS? |