Christine Valentin
World Ocean Council

WORLD OCEAN COUNCIL

The International Business Alliance
for Corporate Ocean Responsibility

Maritime transportation: overview of industry and ocean information needs

Christine Valentin, WOC COO
Christine.valentin@oceancouncil.org

World Ocean Council : the home of the Responsible Ocean Business Community

International, Cross-Sectoral Business Leadership Alliance

- **Bringing ocean industries together**, e.g. shipping, oil/gas, fisheries, aquaculture, tourism, offshore renewables, etc.
- **Catalyzing private sector leadership and collaboration in**
  - Advancing “Corporate Ocean Responsibility”
  - Communicating responsible ocean industry/economy
- 70+ members worldwide; 34,000+ in global network

Goal: Healthy, productive global ocean and its sustainable use and stewardship by responsible ocean business community

Creating business value for responsible companies

- Synergies and economies of scale in addressing issues
- Stability and predictability in ocean operations

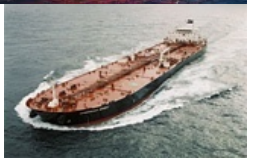
The Shipping Sector: industry overview

Shipping Business Community Diverse and Complex

1. Direct Ocean Users
   - Merchant fleet, many routes, diversity of ships, regional networks
   - Personnel transport fleet with the development of the cruise industry
2. Ocean User Support Industries
   - Industries that depend on direct users for their existence (e.g. shipbuilders) or drive ocean industry growth (e.g. extractors, manufacturers, retailers that transport materials or products by sea)
3. Essential Ocean Use “Infrastructure”
   - Insurance, finance, legal and other essential services that enable ocean industries to operate, ship registries, classification companies

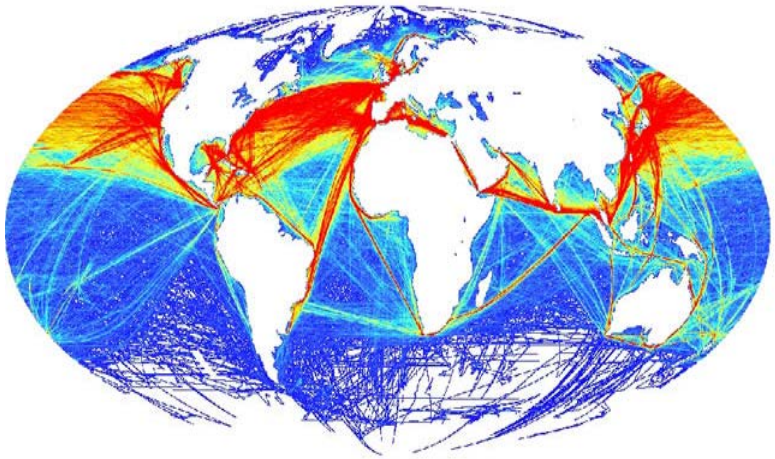
SHIPPING: Still Growing….



- 90% of global trade
- Container shipping increase by 10% / year since 1985
- 50,054 ships (2010)
- Slow down of growth since 2012 and some over capacity..

SHIPPING: Many routes…

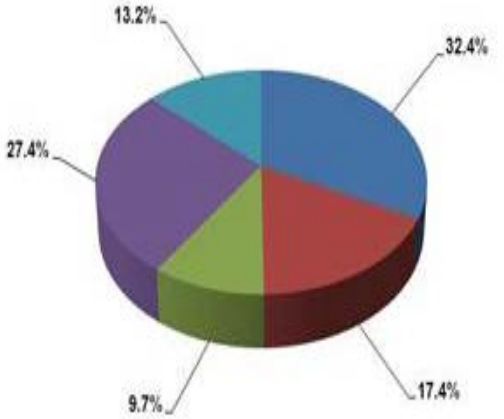


http://www.vox.com/2016/4/25/11503152/shipping-routes-map

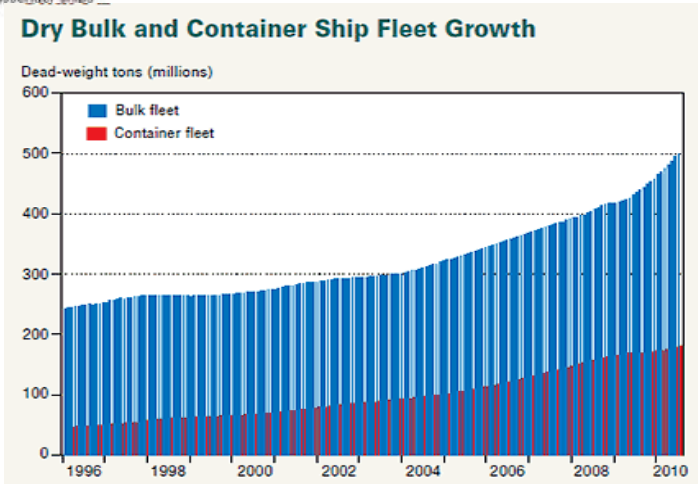
SHIPPING : Many sectors….

50,054 ships (Oct 2010)

- Tankers: 13,175
- Bulk Carriers: 8,687
- Container ships: 4,831
- Passenger ships: 6,597

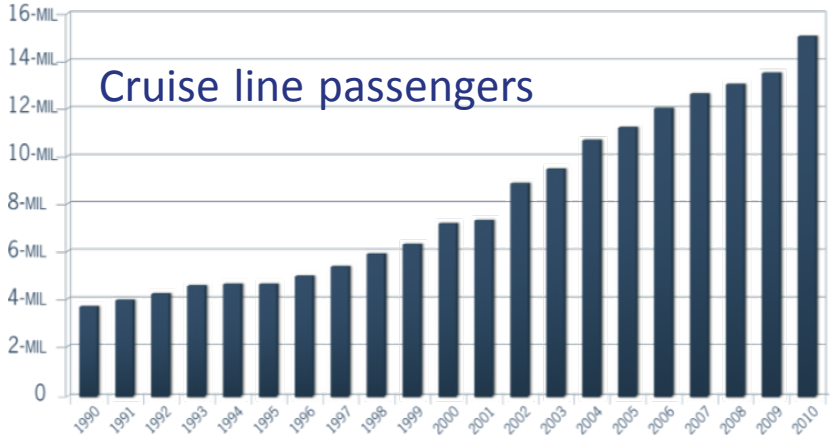


Figures in brackets are numbers of ships, by sector.
Source: IHS Fairplay October 2010



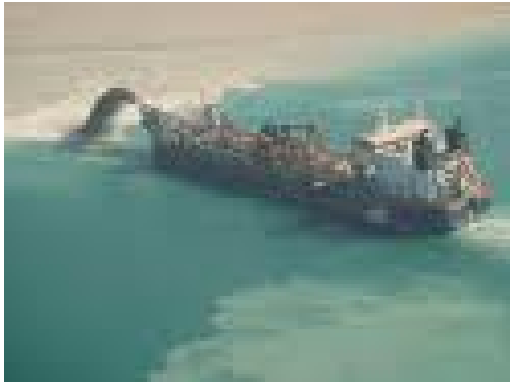
SHIPPING : not just freight…. Focus on cruise tourism

- **14 million passengers in 2010**
- **Growing at 8.5% per year over the next decade**
- Global fleet: 341 ships (92 megaships, > 2000 berths)
- 53 ships built in last 5 years (40 megaships)
- Europe: up 12% from 2009, now 33% of global market
- Asia: up 10-40% from 2009 in various countries
- New destinations: Africa, Australia, Indonesia, Arctic



INDUSTRIAL COASTAL INFRASTRUCTURES: developments follow global trade growth

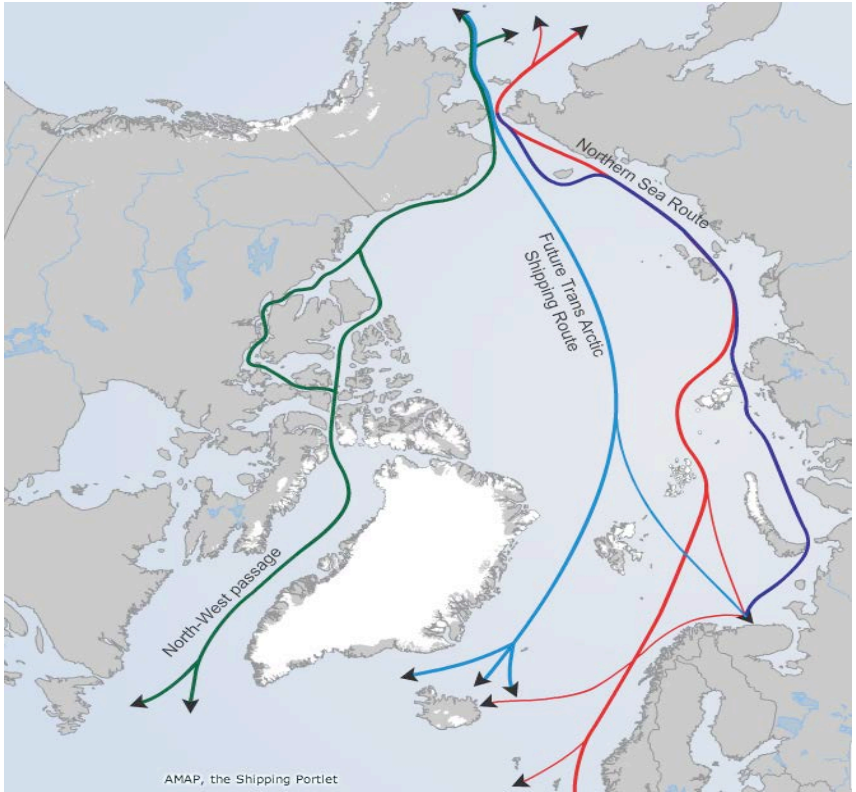
Ports: new, expansion, improvement, deepwater, offshore
Coastal: Piers/jetties, shoreline protection
Dredging: extraction, maintenance, landfill, reclamation



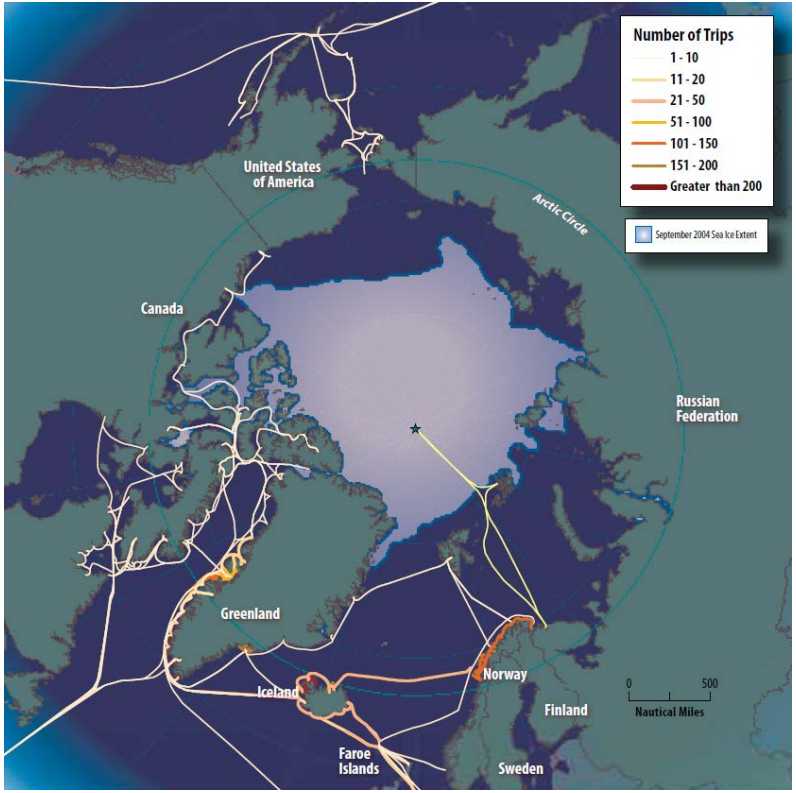
Opening of new Regions: Growing Multiple-use of the Arctic

- Shipping
- Oil and gas
- Fisheries
- Aquaculture
- Tourism
- Mining
- Dredging
- Port development
- Submarine cables
- Etc.

Arctic Ocean Use: Shipping

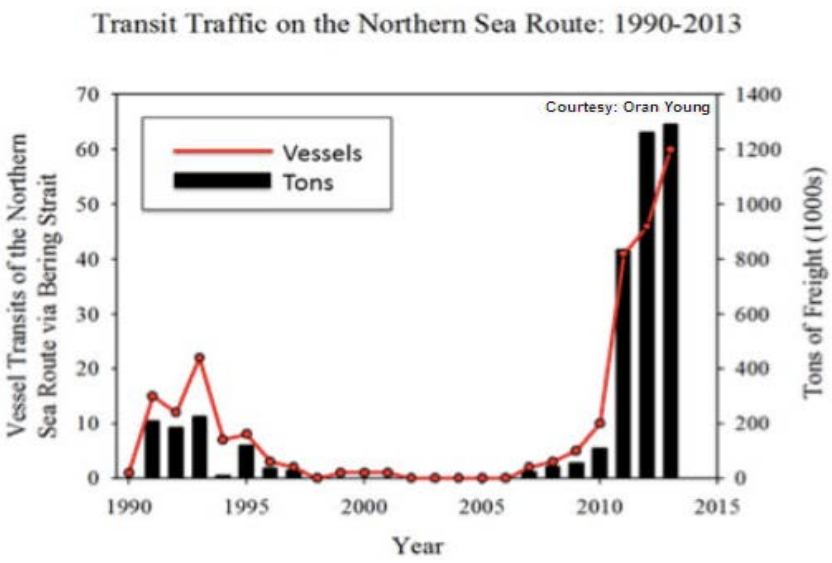


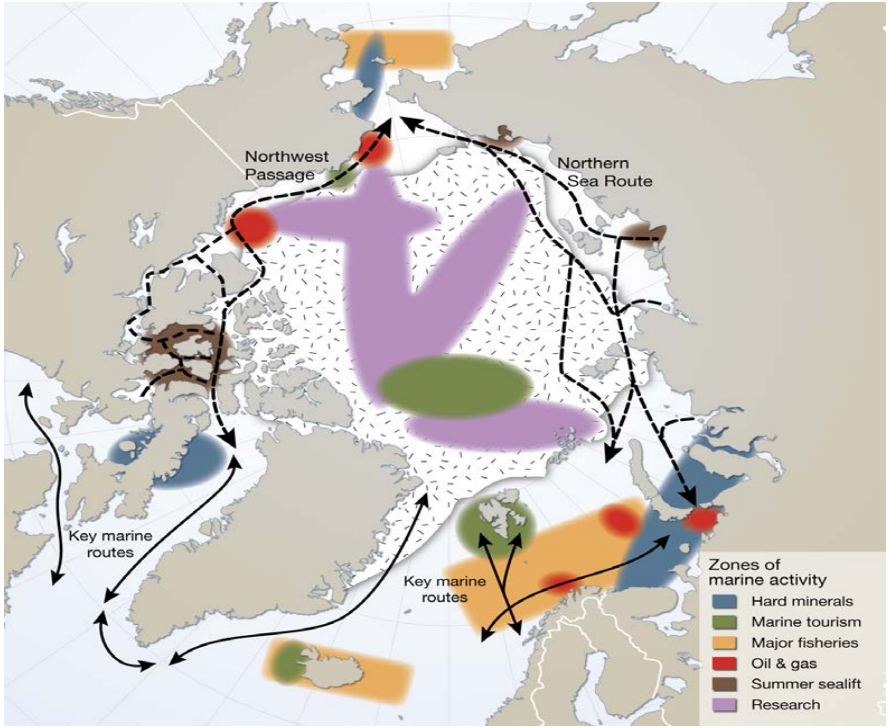
Arctic Ocean Use: Tourism



Arctic Ocean Use: Ports

Arctic Ocean Multiple Use and Issues





New Challenges for Shipping

Precautionary Approach

+ Marine Protected Areas

+ Ecosystem Based Management

+ Marine Spatial Planning/Ocean Zoning

+ Marine Biodiversity/ Marine Mammals

+ High Seas/Deep Seabed Concerns

+ Ocean Governance Changes

+ Sustainable Development Goals

= an increasingly complex and challenging business environment for ocean industries like shipping

Collaboration on Ocean Knowledge where the shipping industry has an active role to play

A **wide range of industry vessels** can:

- **Provide routine, sustained, standardized information** on ocean and atmosphere
- Contribute to describing the **status, trends and variability** of oceanographic and atmospheric conditions
- **Improve the understanding, modeling and forecasting** of oceanic ecosystems, resources, weather, climate variability and climate change

The World Ocean Council SO-SI program works to :

- **Foster, facilitate and broker interaction between scientists needing data and companies with vessels and platforms** that could collect data
- **Expand the number of vessels** that collect standardized ocean, weather and climate data
- **Improve the coordination and efficiency of data sharing** and input to national/international systems and existing programs

Example of collaboration on Tsunami Detection with the shipping industry

Accurate, rapid detection and assessment of tsunamis in **open ocean** is critical.

Recent earthquakes/tsunamis highlighted:

- Weakness in understanding of events generating tsunamis
- Gaps in knowledge, coverage and capabilities of detection

Need: Robust detection system with much more densely-spaced observing capabilities

BLUE PLANET Oceans and Society a GEO Initiative

Copernicus Marine Service

SATELLITE EVENT TOULOUSE EUROPEAN CITY OF SCIENCE ESOF 2018

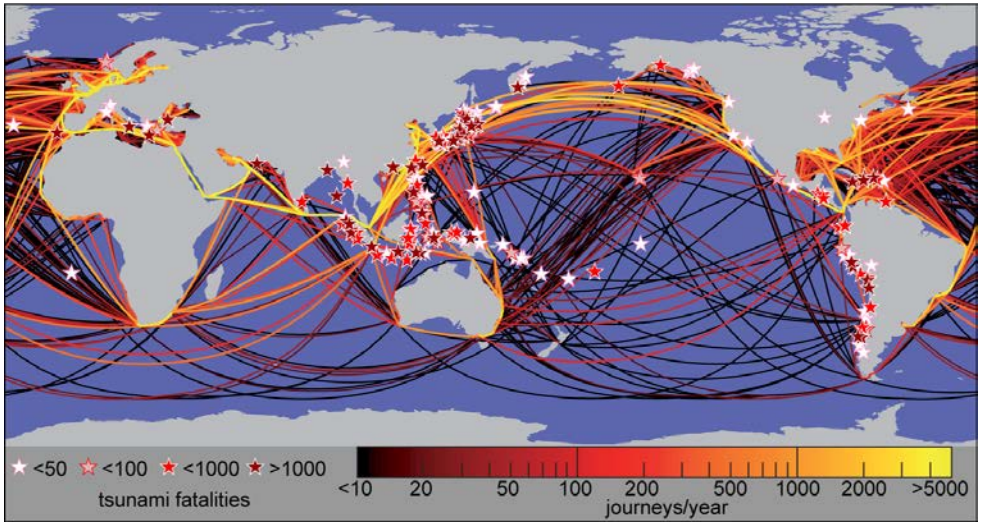
Tsunami Detection
Opportunity and Solution

Opportunity:

Use merchant vessels traversing tsunami-prone areas

Solution:

Use geodetic GPS on ships to transform them into floating tide-gauges that can detect tsunamis in open ocean (demonstrated by University Hawaii research vessel in 2010)

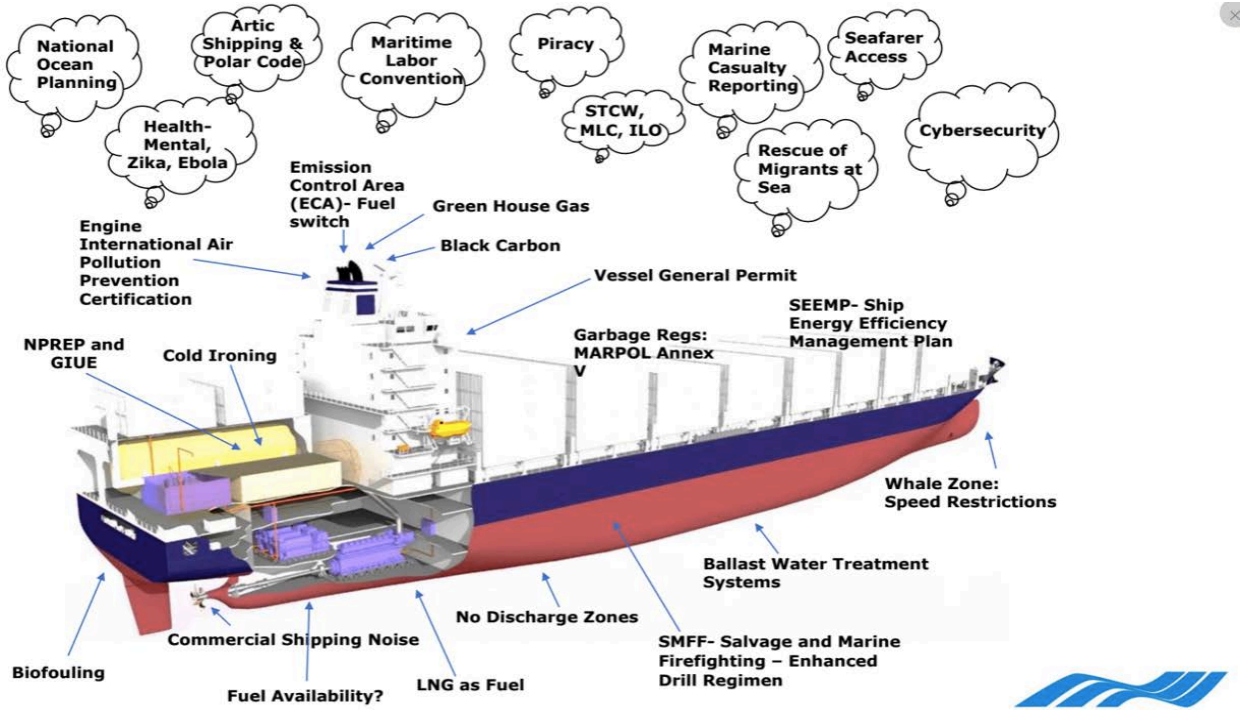


BLUE PLANET Oceans and Society a GEO Initiative
Copernicus Marine Service
SATELLITE EVENT TOULOUSE EUROPEAN CITY OF SCIENCE ESOF 2018

Concerns of the Shipping Sector: ocean information needs are increasing

Christine Valentin, WOC COO

Priorities for the shipping sector; what keeps a shipowner awake at night?



CHAMBER OF SHIPPING OF AMERICA

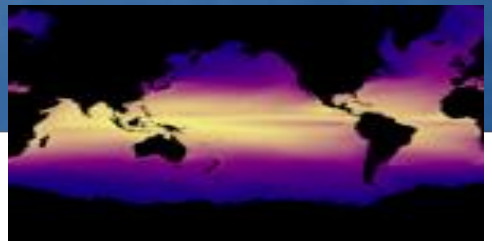
Our mission is to represent members' interests regarding U.S. and International legislative, regulatory, and administrative entities.

Sustainability Agenda and Climate Change are driving new needs for shipping in terms of data

- Seafarer safety and support: with extreme weather events both on the bridge and at fleet management level, there is a need for finer, better and real time dataso as to reduce the margins of error
- Sustainability: need to reduce operational environmental impacts to lower changes in current gyres and in weather routine can have an impact of up to 5% on fuel costs
- Climate change: finer modelling, better metric and warning of extreme weather events for ships can save lives
- Sea level rise: need to mitigate and adapt to this new challenge by obtaining better bathymetric and tide modeling for ports and mapping the seabed (GEBCO Seabed 2030 project)

Cyber security is a new challenge

- Global increase in levels of shipping and ship traffic drive the need for data
- Autonomous ships will disrupt the market and the practices ,in between, phases of crew reduction will be balanced by increases in data flow needs
- The “Internet of Things” will scale up progressively in three directions:
  - Internal workings of the ship
  - Interface hull /waves
  - External oceanography
- Increasing importance of satellite communication with the development of real time observations and communications pipelines



WOC Sustainable Ocean Summit (SOS)
Hong Kong, 14-16 Nov 2018

www.Oceancouncil.org

BLUE PLANET Oceans and Society a GEO Initiative

Copernicus Marine Service

SATELLITE EVENT TOULOUSE EUROPEAN CITY OF SCIENCE ESOF 2018