

# Sustainability as an Element of Prosperity

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# Aim

Highlight the need to incorporate **sustainability** into all activities related to marine shipping in order to bolster long term prosperity and resilience.



# Marine Transportation

- Vital strategic capability
- Linked directly to prosperity
- \$205B of trade (2015)
- \$3B direct contribution to GDP, almost 100,000 jobs
- Modelled true contribution about \$30B
- Expectations that the sector will continue to grow
- Most Canadians recognize this importance

# Complex ecosystems, agricultural, industrial and urban areas

- World's longest coastline
- Varying geography and climate
- Shipping routes overlap:
  - Critical habitat
  - Migration routes
  - Other sensitive areas
- Overlap engenders risk

# Risks – Potential Impacts

- Everything involves risk – shipping is no different
- Impacts on **humans**:
  - Cultural
  - Fisheries
  - Tourism
  - Efficiencies and profitability
  - Remediation costs
  - Health
  - Traffic congestion
- Impacts on **environment** and **wildlife**:
  - Interference with or disruption of normal patterns
  - Loss of critical habitat
  - Contamination and toxins

# Sources of Risk

- Cargo, fuel and lubricants
- Greenhouse gas emissions
- Fine particulate matter emissions
- Invasive species
- Underwater sound
- Anti-fouling
- Ambient noise
- Light pollution
- Physical damage
  - Wakes
  - Anchors and cables
  - Collisions
- Infrastructure
- Cumulative effects
- Changes in the environment
- Navigation errors
- Human factors associated with shipping

# Stakeholders, Governments and Regulators

- Shipping industry
- Ports
- Pilots
- Natural resource sector
- Academia
- NGOs
- ENGOs
- Response Organizations
- Federal government
- Indigenous peoples
- Provincial governments
- Coastal communities



# The Challenges

- Achieve a balance between providing Canadians with the benefits of marine shipping while protecting the waterways they treasure
- Perception as reality
- Public environment
- Influence on decision-makers
- Absence of agreed ground-truth
- Value judgement of acceptable levels of risk
- How to characterize risk and return

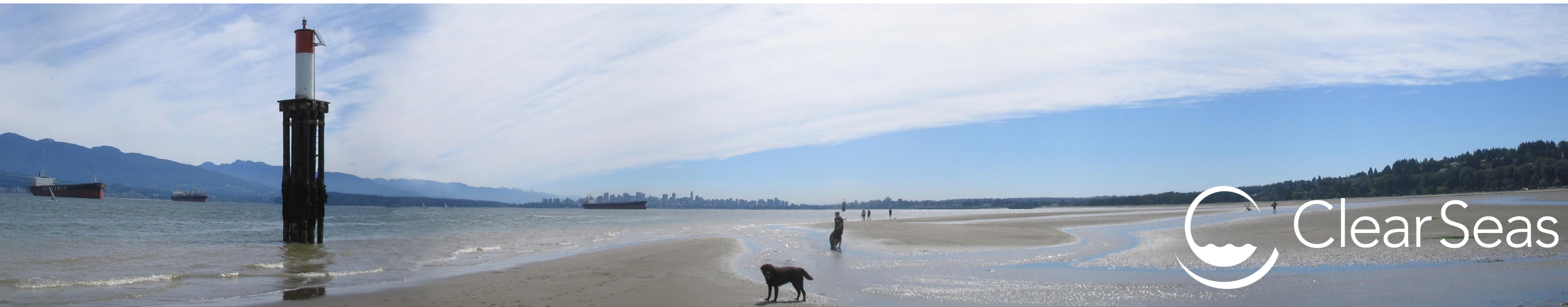


# The Challenges

- Complex issue requires a systems approach
- Many elements
- Risks not clearly understood – what problem are we trying to fix?
- Acceptable level of risk must be determined
- Continuous improvement
- Needs to be based on understanding
- Research and Traditional Knowledge are key
- Agility and resilience

# Sustainability

- Oceans Protection Plan aims to address many of the issues
- Industry initiatives well underway
- Cooperation and consultation are necessary
- Achieving workable balance is key
- Evidence-based
- Forward-looking





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