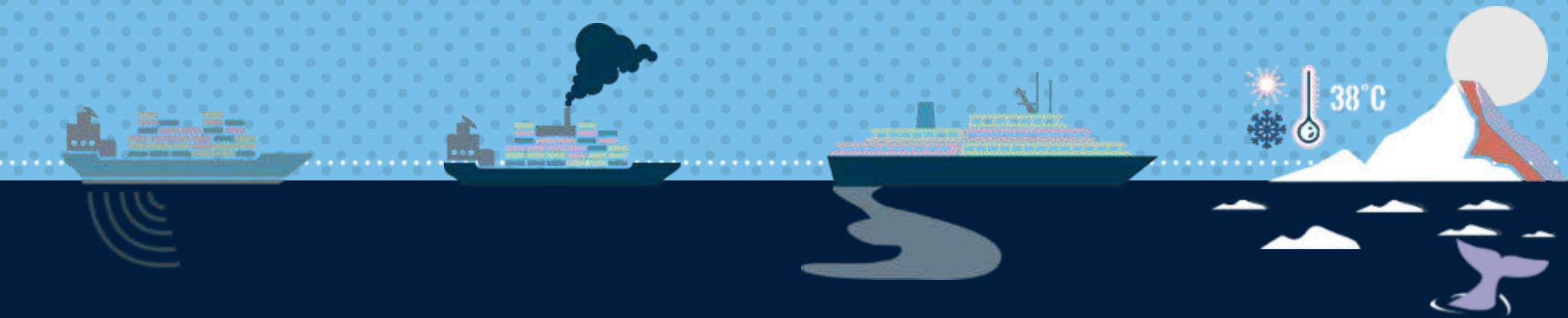
CLEAN ARCTIC ALLIANCE

Everything You Need To Know on Black Carbon, GHGs, GHGs, Scrubbers, Noise, Plastics and Other Shipping Shipping Impacts.



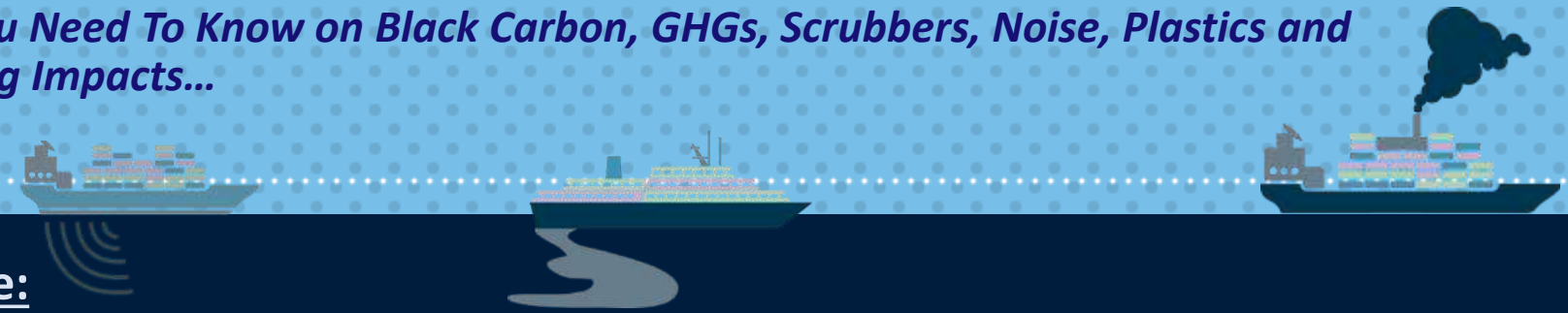
A Clean Arctic Alliance event ahead of IMO MEPC 82

Thursday 19 September 11.30 EDT / 15.30 GMT / 16:30 BST / 17.30 CEST

CLEAN ARCTIC ALLIANCE

Welcome & introduction

A Clean Arctic Alliance event ahead of IMO - MEPC 82:
Everything You Need To Know on Black Carbon, GHGs, Scrubbers, Noise, Plastics and Other Shipping Impacts…



Please note:

- This webinar is recorded, and the recording will be made available post event.

Please submit your questions via the Q&A section at any time.

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Reducing Arctic ship BC and climate change

Bill Hemmings – Adviser to the Clean Arctic Alliance

- IMO agreed in 2011 to regulate Arctic ship black carbon
- 21 MEPCs later, no regulatory action, just voluntary handwringing
- Better engine technology/maintenance is important to control BC
- And switching to ‘cleaner’ marine fuels brings large immediate benefits
- In 2012 a mandatory ‘clean’ fuel switch to marine distillates is proposed
- In 2021; MEPC Res 342(77) called only for a voluntary fuel switch
- followed by a work program on voluntary ship by ship BC measuring and reporting
- Marine fuel experts say distillate ‘polar fuels’ DMA/DMZ far better for BC than residual fuels. They’re available in abundance, widely used, …but cost more.
- Biggest problem in the Arctic: international commercial tankers, bulkers, cargo, service vessels
- Whose owners claim to support the IMO GHG reduction plan
- How much longer to wait for mandatory IMO Arctic action?

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Reducing Arctic ship BC and climate change

Bill Hemmings – Adviser to the Clean Arctic Alliance

What should MEPC 82 do on Arctic ship BC?

- Focus on/agree needed steps for PPR 12 to agree mandatory Arctic BC regulation
- Recognise that DMA/DMZ “polar fuels” can replace residuals overnight
- To deliver significant across-the-board BC reductions
- Task PPR12 with developing MARPOL VI Amendment to do this
- By ruling out use of residual marine fuels in the Arctic
- And promoting use of DMA/DMZ or other ‘cleaner fuels’
- Discuss fuel quality testing of future fuels for BC reduction propensity

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Emission Control Areas

Kåre Press-Kristensen – Green Global Future

CLEAN ARCTIC ALLIANCE

GREEN GLOBAL FUTURE

Emission Control Areas (MEPC 82)

Kaare Press-Kristensen
M.Sc. in engineering, Ph.D.
Senior advisor, climate & air quality
Green Global Future
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Co-funded by
the European Union

Air pollution: Health effects and costs

- Air pollution from ships - both in ports and at sea - contributes significantly to air pollution leading to nature destruction and health damages on land.
- Air pollution is the number one global risk factor in relation to mortality. Even in the EU, it causes around 8% of all deaths according to the EEA, and health costs being same magnitude as 5% of GNP according to the World Bank.
- Emission Control Areas (ECAs) limiting the emission of Sulphur Oxides (SOx), Nitrogen Oxides (NOx), fine particulate matter ($PM_{2.5}$) and black carbon (BC) have been the main IMO-tool to reduce air pollution in sensitive regions.

MEPC 82: Emission Control Areas

- Adoption concerning designation of the Canadian Arctic and the Norwegian Sea as Emission Control Areas as approved by MEPC 81 to enter into force on 1st March 2026.
- First official IMO lunch presentation (Monday) concerning the designation of a North Atlantic Emission Control Area, which could potentially be first proposed/approved at MEPC 83 in the spring 2025.
- If approved, the North Atlantic Emission Control Area will be the largest geographically, closing the gap between Canadian, Norwegian, Northern European and Mediterranean Emission Control Areas.

MEPC 82: The expected outcome

- Adopting the designation of the Canadian Arctic and the Norwegian Sea as Emission Control Areas to enter into force on 1st March 2026 to protect human health and biodiversity.
- A clear commitment from Atlantic coastal states concerning the designation of a North Atlantic Emission Control Area, possibly to be proposed and approved first time at MEPC 83 in the spring 2025.

Note on ECAs

Emission Control Areas (ECAs) reduce Sulphur Oxides (SOx) by 80 % and Nitrogen Oxides (NOx) by 75 % compared to traditional shipping. Furthermore, the co-emission of fine particulate matter ($PM_{2.5}$) and black carbon (BC) is reduced significantly. Thereby nature destruction as well as health damages and costs are reduced significantly. ECAs have been successes everywhere they have been established.

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Legal aspects of the use of scrubbers

Sam Davin – WWF Canada

What will happen at MEPC 82

- Agenda item 5 – Air pollution prevention
  - MEPC will consider PPR 11 outcomes
  - Remaining work under Output 1.23 (*Evaluation and harmonization of rules and guidance on the discharge of discharge water from EGCS into the aquatic environment*) includes "regulatory matters"
- 8 submissions (4 new documents + 4 deferred by MEPC 81)
  - <u>Legal aspects:</u>
    - **MEPC 81/5/4** "*Regulation 4.1 of MARPOL Annex VI must not be interpreted in isolation of other regulations, resolutions and obligations*"
    - **MEPC 82/5** "*Legal analysis on exhaust gas cleaning systems as an alternative compliance mechanism under MARPOL Annex VI from an air quality impact perspective*"

What do we want to see happen

- **The Committee should…**
  - *Consider whether the use of EGCS as an equivalent to low sulphur fuels is aligned with the duties outlined in regulation 4.4 of MARPOL Annex VI.*
  - *Amend the Annex VI to eliminate the EGCS loophole.*
  - *Develop and adopt a resolution calling on operators to cease discharging EGCS waste in coastal and marine protected areas, critical habitat, IMO designed Special Areas, and PSSAs.*
- **States should…**
  - *Prohibit EGCS discharges in their jurisdictional waters.*
  - *No longer approve EGCS for ships registered to their flags.*

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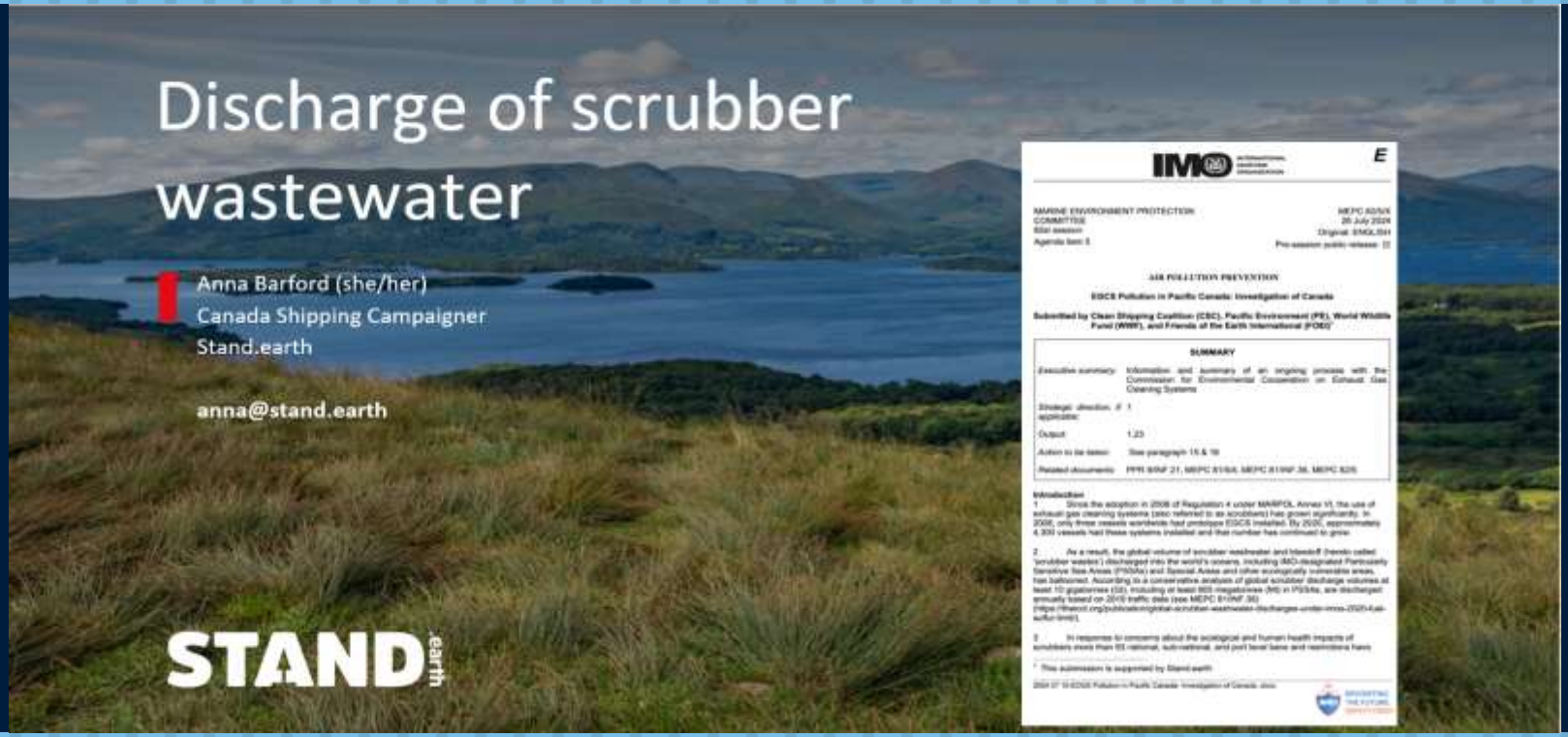
Discharge of scrubber wastewater

Anna Barford – Stand.Earth



EGCS Pollution in Pacific Canada: Investigation of Canada

Information and summary of an ongoing process with the Commission for Environmental Cooperation on Exhaust Gas Cleaning Systems, **STAND.earth is alleging that Canada is in violation of their own species and ecosystem protection laws by allowing the discharge of scrubber wastewater following IMO rules**

01 Sensitive Areas Species at Risk

Scrubber washwater contains persistent and bioaccumulative contaminants, is strongly acidic, and a source of thermal pollution. These various pollutants can worsen water quality and bioaccumulate throughout food webs, and have been identified as problem contaminants for endangered species recovery. Further, scrubber wastes are often not discharged into pristine environments, but rather ecosystems already bearing some contamination. Inputs of contaminants from scrubber wastes may push ecosystems beyond thresholds.

Predators at or near the top of the food chain, such as salmon and orcas, often bear greater pollution burdens and may suffer greater adverse impacts as a result. **There are only 74 Southern Resident killer whales remaining in the wild with critical habitat for both populations found in British Columbia coastal and internal waters**.

02 Discharge volumes

According to the Government of Canada: The volume of scrubber waste discharges on Canada's Pacific Coast **doubled between 2019 and 2022 from 44 million tonnes to 88 million tonnes.**

03 IMO Rules contradict Domestic laws and Multilateral Agreements

Many countries have domestic laws that are similar to those of Canada which act to protect fish habitats and endangered species. Further, other international agreements contain provisions for the enforcement of domestic laws. **As such, there are likely other countries that are potentially in violation of multilateral agreements by allowing the continued discharge of scrubber wastes.**

Ideal MEPC outcome

In MEPC 81/5/4 and MEPC 82/5, the Committee has been urged to consider whether the use of scrubbers as an equivalent to low sulphur fuels is aligned with requirements outlined in regulation 4 of MARPOL Annex VI:

1. MEPC should adopt a resolution calling on shipping operators to **immediately stop the release of scrubber discharge wastes in areas identified for their sensitivity, vulnerability, or conservation value**.

2. IMO should encourage national maritime administrations to ban the discharge of scrubber waste within their jurisdictional waters and to stop approving scrubbers as an alternative compliance method for ships registered under their flags until a global ban is introduced.

3. MEPC should explicitly prohibit the use of scrubbers as a means of alternative compliance, thereby removing practices under MARPOL which are inconsistent with the obligations of IMO Member States under international treaty law, including human rights law.

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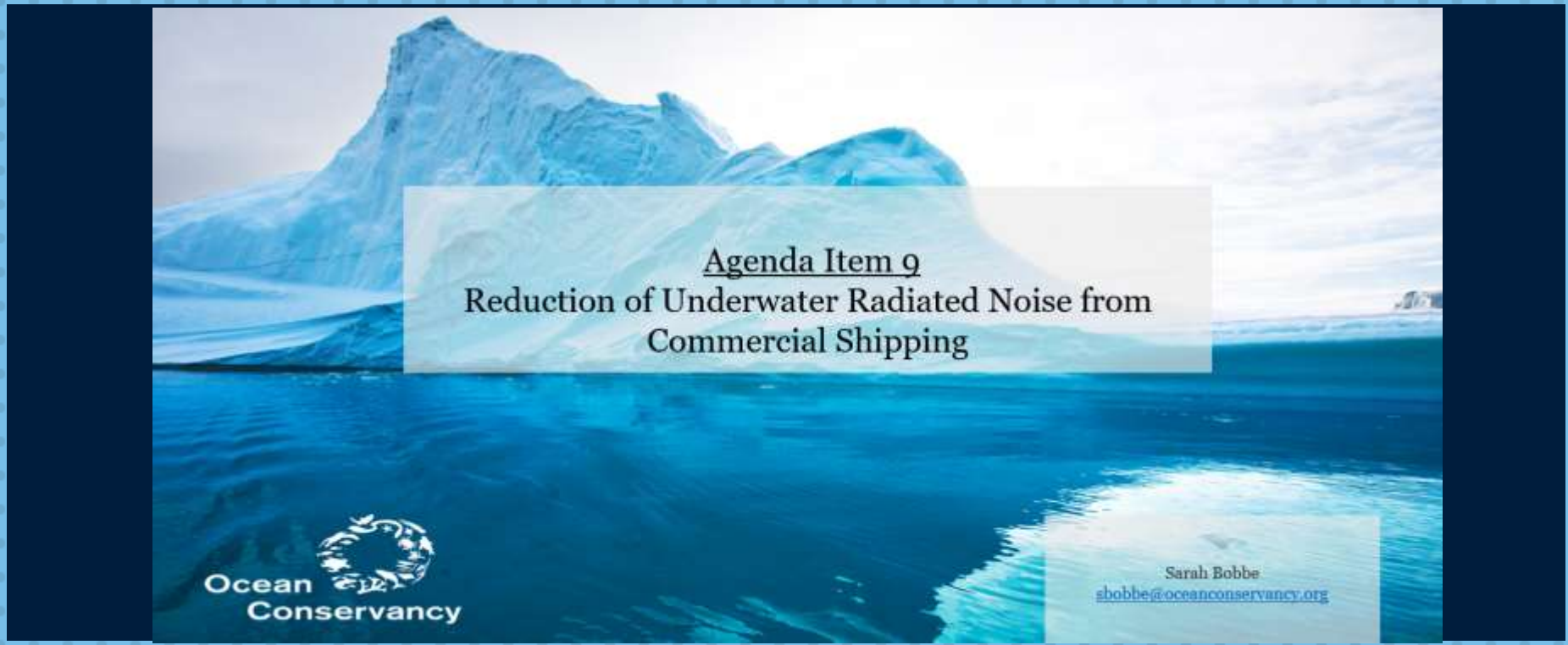
Underwater radiated noise

Sarah Bobbe – Ocean Conservancy



Underwater noise from ships: impacts

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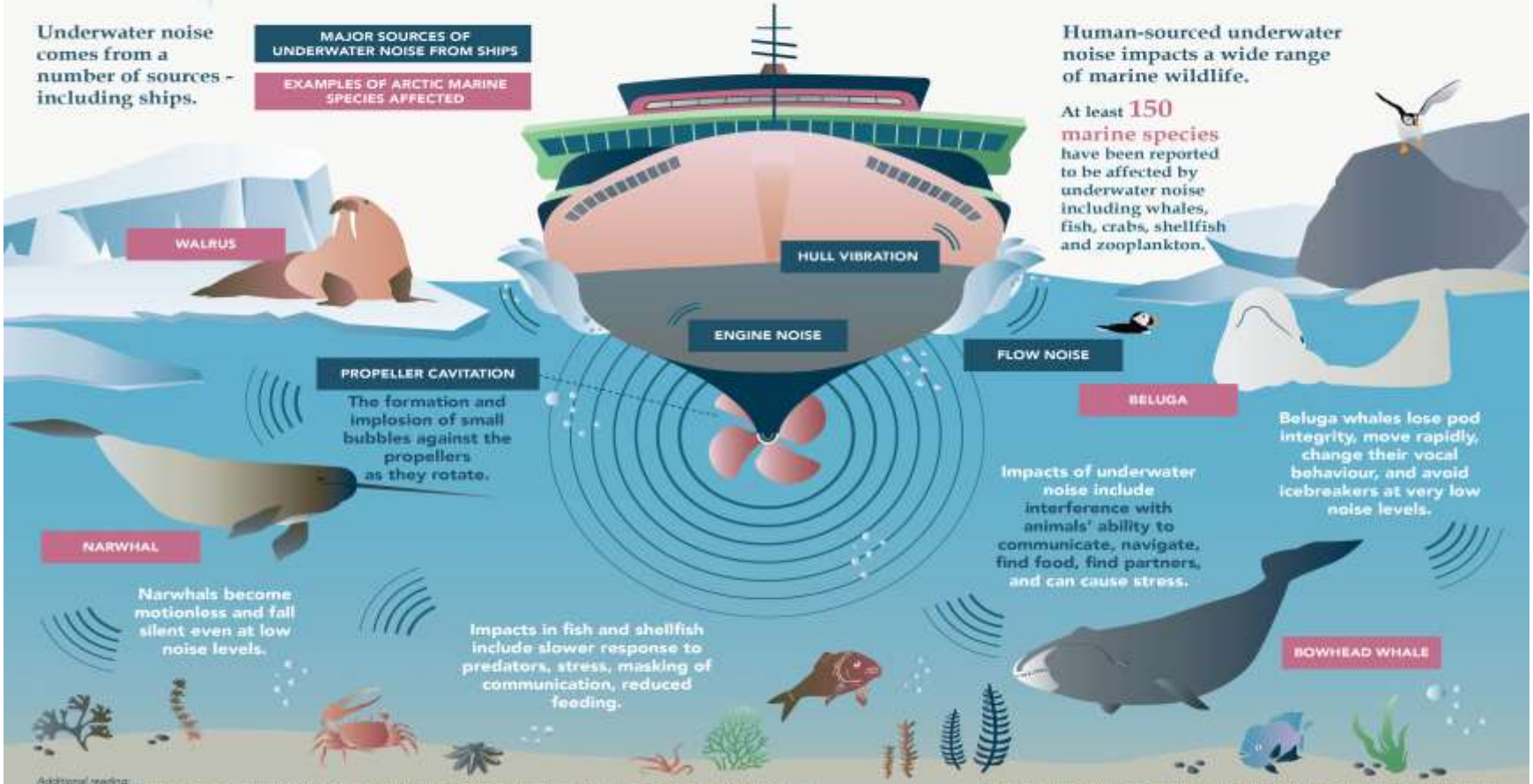
Underwater noise comes from a number of sources - including ships.

MAJOR SOURCES OF UNDERWATER NOISE FROM SHIPS

EXAMPLES OF ARCTIC MARINE SPECIES AFFECTED



Human-sourced underwater noise impacts a wide range of marine wildlife.

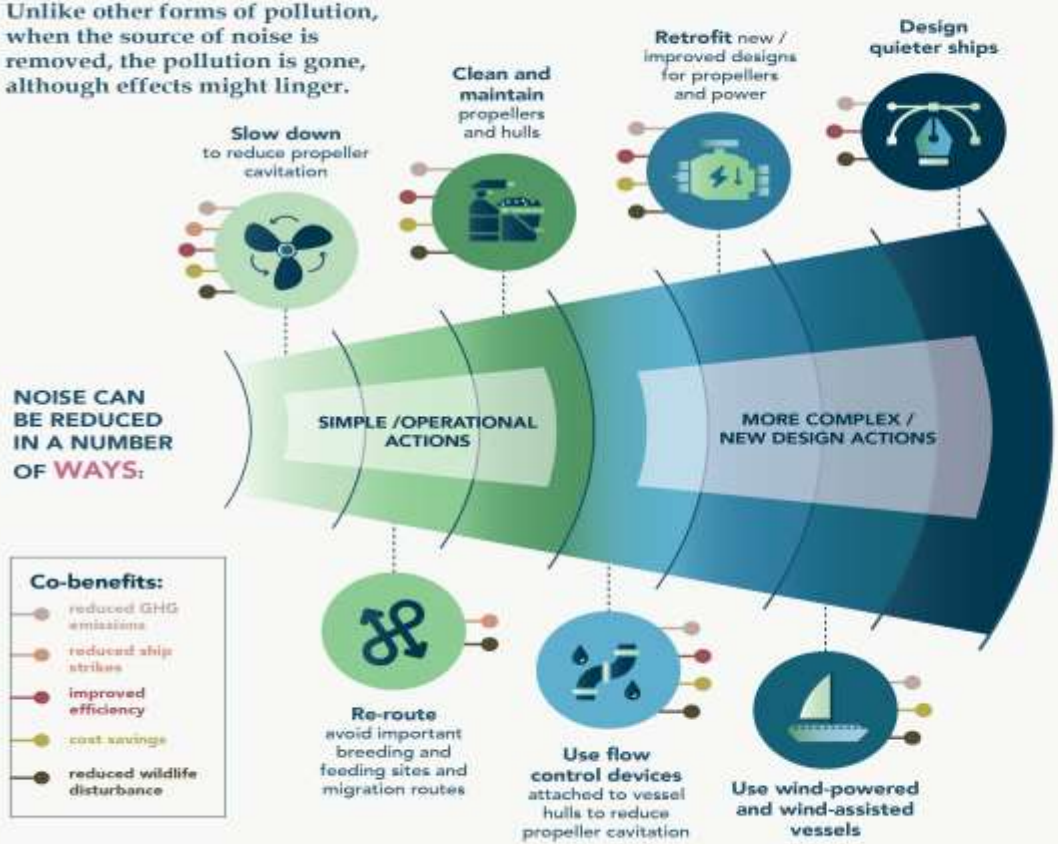
At least 150 marine species have been reported to be affected by underwater noise including whales, fish, crabs, shellfish and zooplankton.

Additional reading:
https://www.oceancare.org/wp-content/uploads/2022/05/Underwater-Noise-Pollution_Impact-on-fish-and-invertebrates_Report_OceanCare_EN_36p_2018.pdf

Produced by Clean Arctic Alliance – cleanarctic.org – Designed by Margherita Gagliardi – September 2023

Underwater noise from ships: solutions

Unlike other forms of pollution, when the source of noise is removed, the pollution is gone, although effects might linger.



MEASURES THAT CAN BE VALUABLE TO REDUCE NOISE LEVELS

THE IMO AND ITS MEMBER STATES SHOULD:

- Regulate noise emissions from international shipping:
  - Require ships to prepare noise management plans
  - Set explicit targets for underwater ship noise reduction

SHIPOWNERS AND OPERATORS SHOULD:

- Develop and implement ship-based noise management plans that aim to reduce ship noise levels
- Recognise the importance of Indigenous Knowledge on noise impacts on marine wildlife and develop voyage plans and operations to minimise impacts
- Slow down, especially in and near important marine habitats
- Design and develop quieter ships

ADMINISTRATIONS AND OTHER STAKEHOLDERS SHOULD:

- Provide financial incentives for ship quieting measures
- Support research and monitoring of impacts and solutions
- Provide educational tools, e.g. information on important wildlife areas and migration routes

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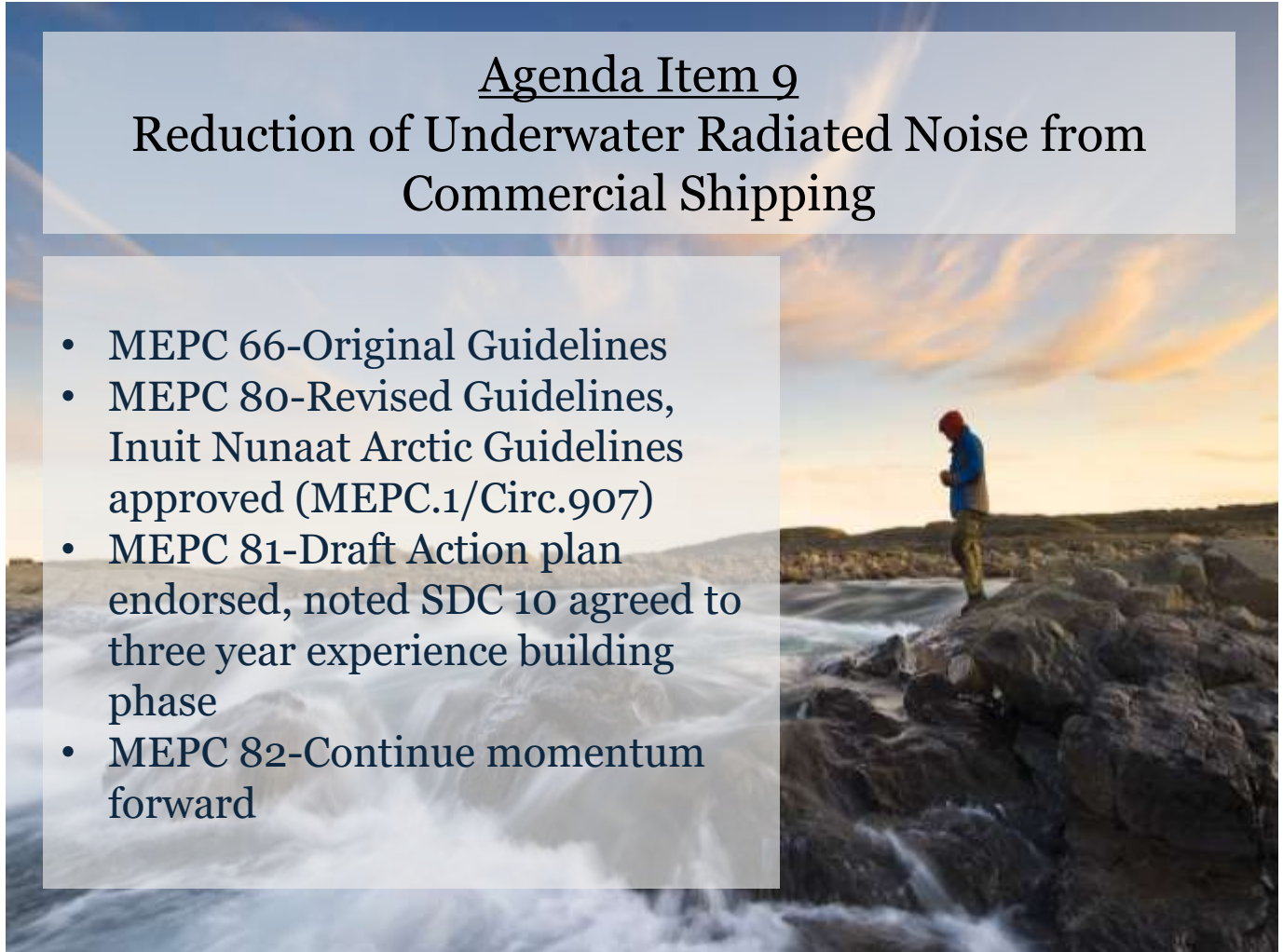


Agenda Item 9
Reduction of Underwater Radiated Noise from Commercial Shipping

- MEPC 66-Original Guidelines
- MEPC 80-Revised Guidelines, Inuit Nunaat Arctic Guidelines approved (MEPC.1/Circ.907)
- MEPC 81-Draft Action plan endorsed, noted SDC 10 agreed to three year experience building phase
- MEPC 82-Continue momentum forward


WWF noise side event
Thursday 10/3 at 1:30pm

CLEAN ARCTIC ALLIANCE

Marine Plastic pollution

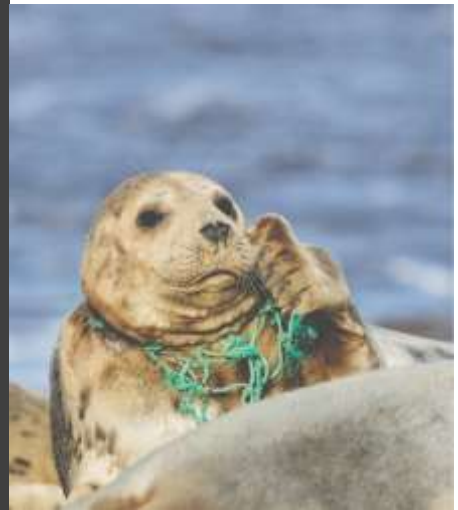
Amy Youngman - Environmental Investigation Agency

Agenda item 8 : Follow-up work emanating from the Action Plan to address marine plastic litter from ships

CLEAN SHIPPING COALITION

environmental investigation agency

1. MEPC 81-1-4 Review of Action Plan and other sources of microplastics from ships
2. MEPC 81-8 Increasing momentum to tackle plastic pollution in the marine environment
3. MEPC 82-8-2 Improving understanding of the contribution of ships to marine plastic litter
4. MEPC 82-8-3 IMO's Action Plan: illegal discharge of marine plastic litter from ships
5. MEPC 82-8-4 Comments on plastic pellet pollution



Agenda item 8:

Call for more decisive actions to address various sources of marine plastic litter, including microplastics from ship operations, plastic pellets and fishing gear.

We stress the need for stronger enforcement of existing regulations, the development of new standards, and greater collaboration with global governance efforts to tackle plastic pollution comprehensively.

Amy Youngman
amyyoungman@eia-international.org

CLEAN ARCTIC ALLIANCE

GHG Basket of measures: GFS / Levy

Anaïs Rios – Seas at Risk

1 What is the Basket of Measures?

The basket of candidate measures, is comprised of both:

- A technical element, namely a goal-based marine fuel standard regulating the phased reduction of the marine fuel's GHG intensity; and
- An economic element, based on a maritime GHG emissions pricing mechanism.

2

What is the best combination?


To transition the shipping industry successfully to zero carbon, we need:
Stronger and enforceable **CII requirements**
A global **GHG fuel standard** transitioning away from polluting fuels to carbon neutrality
An **ambitious carbon levy** for a low-cost transition
Carbon Intensity Indicator (CII)
Maximising ship efficiency to minimise fuel consumption;
Overcoming barriers to adopt new tech and practices;
Reducing ships' speed to provide important ocean health co-benefits.
Global Fuel Standard (GFS)
Ensuring the uptake of readily-available wind technologies;
Making sure zero-emission fuels are available when needed.
Levy
Incentivising clean shipping;
Reducing the cost gap between old polluting fuels and zero-emission fuels;
Distributing the revenue gained towards a just & equitable transition.

Thank you

seas-at-risk.org

@SeasAtRisk
@seasatrisk_ngo
Seas At Risk
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SEAS AT RISK

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Carbon Intensity Indicator

John Maggs - Ocean Conservancy/Clean Shipping Coalition

Why CII is important

- Impossible to meet the IMO's recently enhanced climate ambition without the CII driving improved energy efficiency.
- Could deliver half of the necessary emissions reductions out to 2050.
- CII tackles barriers that are stopping the uptake of available and cost-effective existing technologies & practices like wind and slower speeds.
- CII reduces fuel burn, ensuring a least-cost decarbonisation of shipping and helps avoid the unnecessary use of valuable scarce renewable electricity to create ship e-fuels.

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Carbon Intensity Indicator

John Maggs - Ocean Conservancy/Clean Shipping Coalition

What's happening at IMO

- The current requirements of the CII are weak and lack proper enforcement.
- The revision of the CII starts at MEPC 82 and must conclude before the start of 2026.
- Industry and States are manoeuvring with arguments for why the CII can't be properly revised now or at all.
- CII can be fixed now if we separate real issues from special pleading.
- Without a strong CII, the GFS and Levy will only fix half of shipping's climate problem.

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Climate, biodiversity and pollution nexus

Andrew Dumbrille – Advisor to the Clean Arctic Alliance

Equal Routes

Shipping at the nexus of climate, biodiversity, and pollution

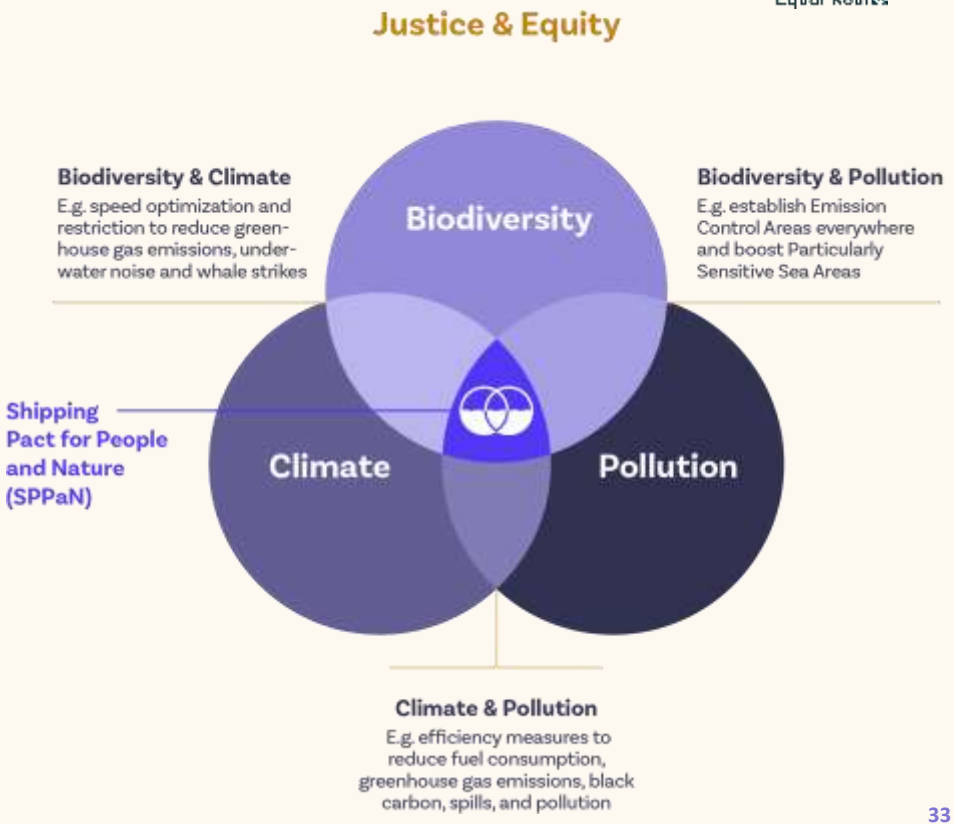
Photos (from top to bottom): Fisherman in Fort Kochi, India; Cargo ship; Reef in Okinawa sea

Equal Routes

Shipping at the Intersection of the Triple Planetary Crisis

It's in the interest of urgent climate action to make equal progress on biodiversity loss and pollution impact.

Urgent need for alignment of decarbonization ambitions with biodiversity conservation and strategies to address the multiple, interconnected, adverse effects.



Equal Routes

MEPC/82/7/10 - Shipping Nexus

- The co-sponsors of MEPC82/7/10 call for a new framework – one that elevates biodiversity and pollution concerns to the same level of urgency as climate actions.
- A central recommendation is the creation of a **high-level task force,** modeled after the IMO's Maritime Just Transition Task Force, to explore these critical issues and propose actionable steps forward.

IMO INTERNATIONAL MARITIME ORGANIZATION

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MARINE ENVIRONMENT PROTECTION COMMITTEE
82nd session
Agenda item 7

MEPC 82/7/10
26 July 2024
Original: ENGLISH
Pre-session public release: ☒

REDUCTION OF GHG EMISSIONS FROM SHIPS

Shipping at the intersection of climate, biodiversity and pollution

FOEI, Pacific Environment and CSC

SUMMARY

Executive summary:	This document situates the shipping sector within the triple planetary crisis of climate, biodiversity, and pollution, and prioritizes solutions with co-benefits to address these crises. By focusing on these solutions, action on reversing biodiversity loss and reducing pollution can support climate action and vice versa. The co-sponsors recommend an IMO framework be developed, similar to the 2023 *IMO Strategy on Reduction of GHG Emissions from Ships*, and a task force struck to consider these issues.
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 22
Related documents:	Resolution A.982(24); C 132/16 and MEPC 82/INF.35

Introduction

1 A healthy ocean is crucial for the wellbeing of humans and the planet. With the interconnectedness of marine ecosystems, biodiversity, and climate change mitigation, it is imperative that comprehensive shipping practices are prioritized to minimize multiple and cumulative negative impacts. Shipping is a broadly impactful sector that both contributes to and has the potential to positively tackle the planetary challenges we face today – climate, pollution, and biodiversity. Each of these issues has its own roots and effects in the sector, and all of them must be resolved if we are to ensure a viable future on this planet.[1]

Equal Routes

MEPC 82/INF.35 - Convention on Biological Diversity

- This submission calls for greater alignment between intergovernmental organizations, including the IMO, and the Biodiversity Framework, with the shared goal of preserving global biodiversity.

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MARINE ENVIRONMENT PROTECTION COMMITTEE
82nd session
Agenda item 16

MEPC 82/INF.35
26 July 2024
ENGLISH ONLY
Pre-session public release: ☒

ANY OTHER BUSINESS

Kunming-Montreal Global Biodiversity Framework

Submitted by the Secretariat of the Convention on Biological Diversity

SUMMARY

Executive summary:	This document introduces the Kunming-Montreal Global Biodiversity Framework, adopted by the Conference of the Parties to the Convention on Biological Diversity in December 2022, and its relevance to international shipping and the work of the Marine Environment Protection Committee.
Strategic direction, if applicable:	Not applicable
Output:	Not applicable
Action to be taken:	Paragraph 17
Related documents:	None

Introduction

1 This document, prepared by the Secretariat of the Convention on Biological Diversity, provides an overview of the Kunming-Montreal Global Biodiversity Framework and its linked decisions, which were adopted by the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) at its 15th meeting, held in December 2022.

Background on the Kunming-Montreal Global Biodiversity Framework

2 In 2018, the CBD COP established a Party-driven preparatory process for the development of a post-2020 global biodiversity framework. The outcome of this process were submitted to the CBD COP, which further developed and adopted this framework the "Kunming-Montreal Global Biodiversity Framework" at its 15th meeting, held in December 2022 (decision 15/4).

3 The Framework sets out a pathway to achieve its 2030 Mission to halt and reverse biodiversity loss to put nature on the path of recovery, while ensuring the fair and equitable sharing of benefits from the use of genetic resources, and providing means of implementation, in order to achieve the 2050 Vision whereby people live in harmony with nature. It includes four outcome-oriented goals to be achieved by 2050, 23 action-oriented targets to be achieved by 2030 and several sections providing guidance on its implementation and monitoring (e.g.,

MEPC 82-INF.35.docx

MEPC 82/7/17 - tipping points

- The effects of tipping points will be transmitted and amplified throughout the globalized world – causing multiple crises and escalating to threaten the breakdown of economic, social and political systems.
- Positive tipping points can create a powerful counter-effect to the risk of earth system tipping points cascading out of control
- Prioritizing shipping measures which have cascading impacts across biodiversity, climate and pollution is a positive tipping point

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MARINE ENVIRONMENT PROTECTION COMMITTEE
82nd session
Agenda item 7

MEPC 82/7/17
9 August 2024
Original: ENGLISH
Pre-session public release: ☒

REDUCTION OF GHG EMISSIONS FROM SHIPS

Global tipping points

Submitted by WWF, Pacific Environment and CSC

SUMMARY

Executive summary:	This document provides new information on planetary tipping points and introduces the concept of positive tipping points or sources of hope, in support of proposals contained in document MEPC 82/7/10 (FOEI et al.).
Strategic direction, if applicable:	3
Output:	3.2
Action to be taken:	Paragraph 14
Related documents:	MEPC 82/7/10; MEPC 80/7/11; MEPC 79/7/20 and MEPC 78/7/18

Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.5) and provides comments on document MEPC 82/7/10 (FOEI et al.).

Global tipping points

2 Paragraph 6 of document MEPC 82/7/10 refers to global tipping points, identifying that tipping points and planetary thresholds are within reach and in some cases have already been crossed. It explains that tipping points occur when changes become self-sustaining, and even if the triggers are halted or reversed beyond a certain threshold significant and irreversible changes to planetary systems can still occur.

3 The Committee has been introduced to the concept of tipping points before. Documents MEPC 78/7/18 (WWF et al.), MEPC 79/7/20 (Greenpeace International et al.) and MEPC 80/7/11 (CSC et al.) have outlined recent scientific evidence on the risks of triggering cascading climate tipping points from climate heating and referred to the conclusions of the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment cycle (AR6) during

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Underwater Radiated Noise

10% reduction in global fleet speed could yield a substantial 13% decrease in GHG emissions and increase the likelihood of meeting GHG targets by up to 23%; this reduction could result in a 40% decrease in underwater noise and a potential 50% reduction in the risk of ship strikes.

creating a ‘co-benefits solutions space’

The 2030 Shipping Pact for People and Nature (SPPaN 2030)

WHAT	*Slow down*	*Emission Control Areas (plus) everywhere*	*Marine protection focus, reboot, and expansion*	*Efficiency revamped*	*Eradicating pollution*
WHY	A 10% reduction in global fleet speed could yield a substantial 13% decrease in GHG emissions, a 40% decrease in URN, and a potential 50% reduction in the risk of ship strikes.	Air pollution reduction from shipping can improve human health, increase life expectancy and quality, and potentially decrease global warming.	Acknowledging the existence of one ocean and its interconnectedness, an increase in marine protected areas and a focus on reducing shipping impacts are necessary to support a healthy ocean and people.	Improving ship efficiency through technology and maintenance can reduce URN, vessel strikes, fuel consumption, air pollution, GHG emissions, and effluent discharges while increasing safety.	Marine pollution eradication will improve biodiversity and human health while preventing economic loss and tackling the climate crisis.
HOW	PLAN: Global speed restrictions, resulting in reductions in URN, whale strikes, and GHG emissions. 2030 GOALS: • 25% fleet average speed reduction • 50% URN reduction by 2030 • Whale strike mortalities decrease by 80% by 2030 • 40-50% GHG emissions reduction	PLAN: Designating the global ocean as an ECA, including in ocean areas beyond national jurisdiction and including black carbon in the regime. 2030 GOALS: • 50% reduction in air pollutants • 50% global reduction of black carbon emissions, and 99% near ice sheets and glaciers	PLAN: Expand PSSA designations and reform how they are implemented to ensure significant and lasting protections. Focus on existing and new protected areas. 2030 GOALS: • 4 times more PSSAs compared to 2020 baseline • Global protected area network covering at least 30% of our ocean by 2030, in alignment with the CBD target.	PLAN: Improve the energy efficiency of ships, which swiftly brings down fuel consumption and GHG emissions while reducing spill risks, black carbon, and URN. 2030 GOALS: CII reform in 2026 includes an 8% per year target.	PLAN: MARPOL amendments to regulate, create, and strengthen various aspects of marine pollution regulations. 2030 GOALS: • Include URN and light pollution in MARPOL; • HFO ban worldwide; • Effective ballast water treatment; • mandatory hull fouling; • all effluent treated to the highest standard; • reduced threshold for oil content in bilge water; • regulations on grey water • mandatory testing of all treatment systems; • phase out scrubber discharges worldwide; • 100% reduction in plastic waste, improved waste management facilities, and container loss response and mitigation measures

Resources

- ER Blog on Shipping Nexus (new) - https://blog.equalroutes.ca/posts/an-imo-debut-shipping-nexus-solutions-for-climate-biodiversity-and-pollution
- Navigating the Future Report (2023) - https://www.equalroutes.ca/documents/SPPAN_report_DIGITAL.pdf
- CAA statement on climate nexus (2023) - https://cleanarctic.org/2023/12/13/clean-arctic-alliance-reacts-to-new-report-linking-co-benefits-of-action-to-reverse-biodiversity-loss-and-address-climate-crisis-in-shipping-sector/
- Climate Champions Q&A (2023) - https://climatechampions.unfccc.int/heres-how-shipping-can-tackle-climate-change-biodiversity-loss-and-pollution-head-on/
- Op/ed - Efficiency may be the one-size-fits-all solution for marine shipping - https://www.nationalobserver.com/2024/07/08/opinion/efficiency-one-size-fits-all-solution-marine-shipping

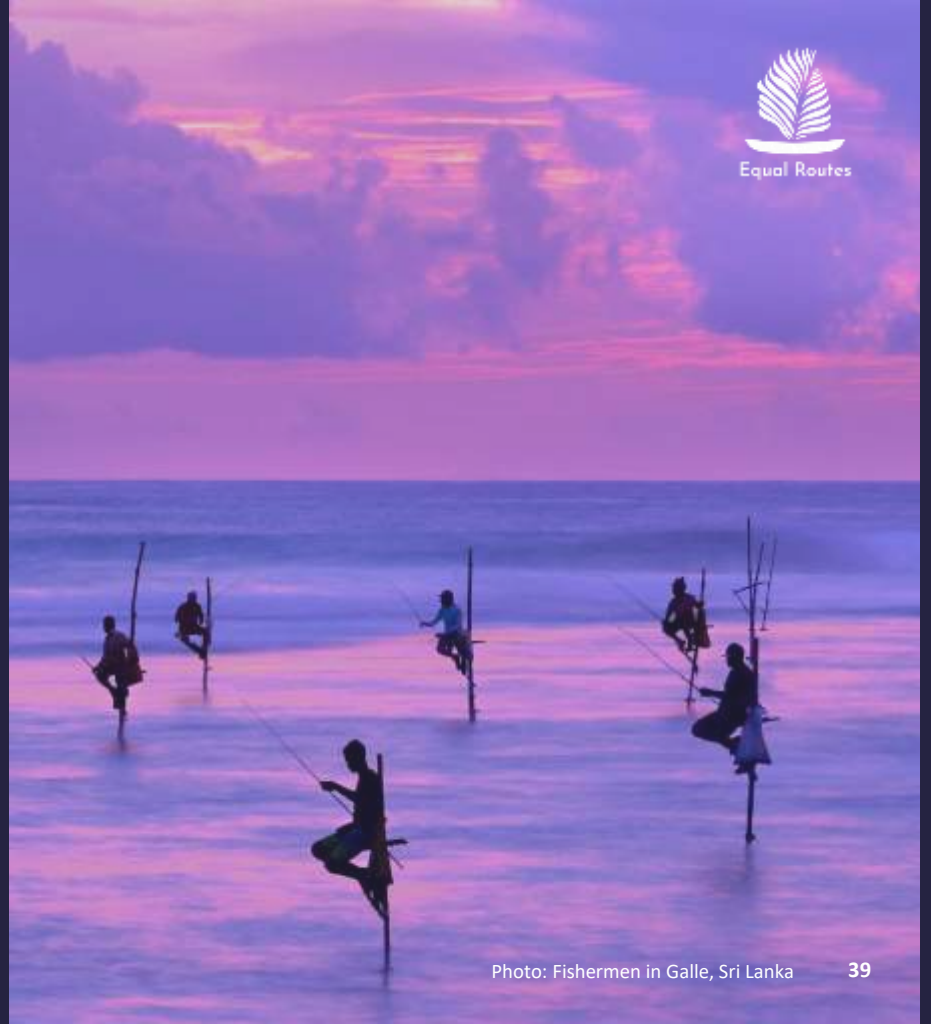

Photo: Fishermen in Galle, Sri Lanka

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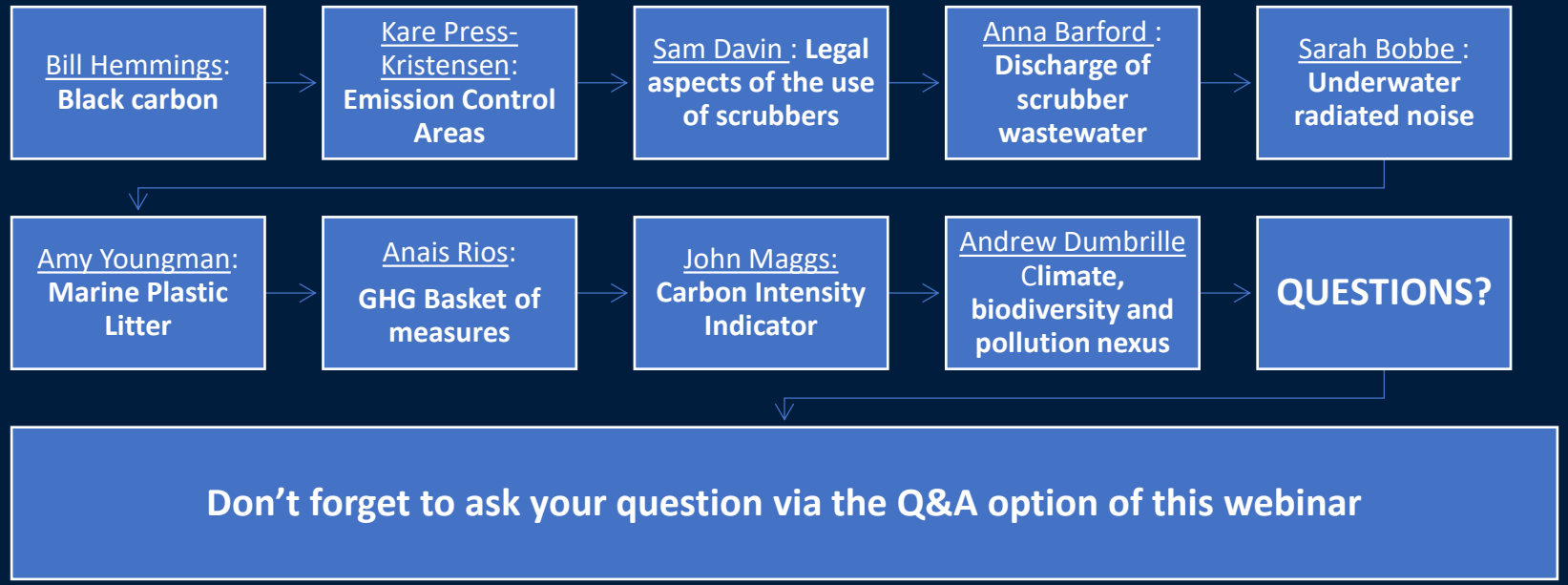
Q&A Session



Moderated by Sian Prior (CAA Lead Advisor) & Eelco Leemans (CAA Technical Advisor)

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Thank you

For more information visit: ***cleanarctic.org***

Email us: ***info@cleanarctic.org***

Continue the conversation: ***@CleanArctic***