



Underwater Radiated Noise (URN)
IMO Work on URN
Ricardo Batista, Marine Technology, MSD, IMO



Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

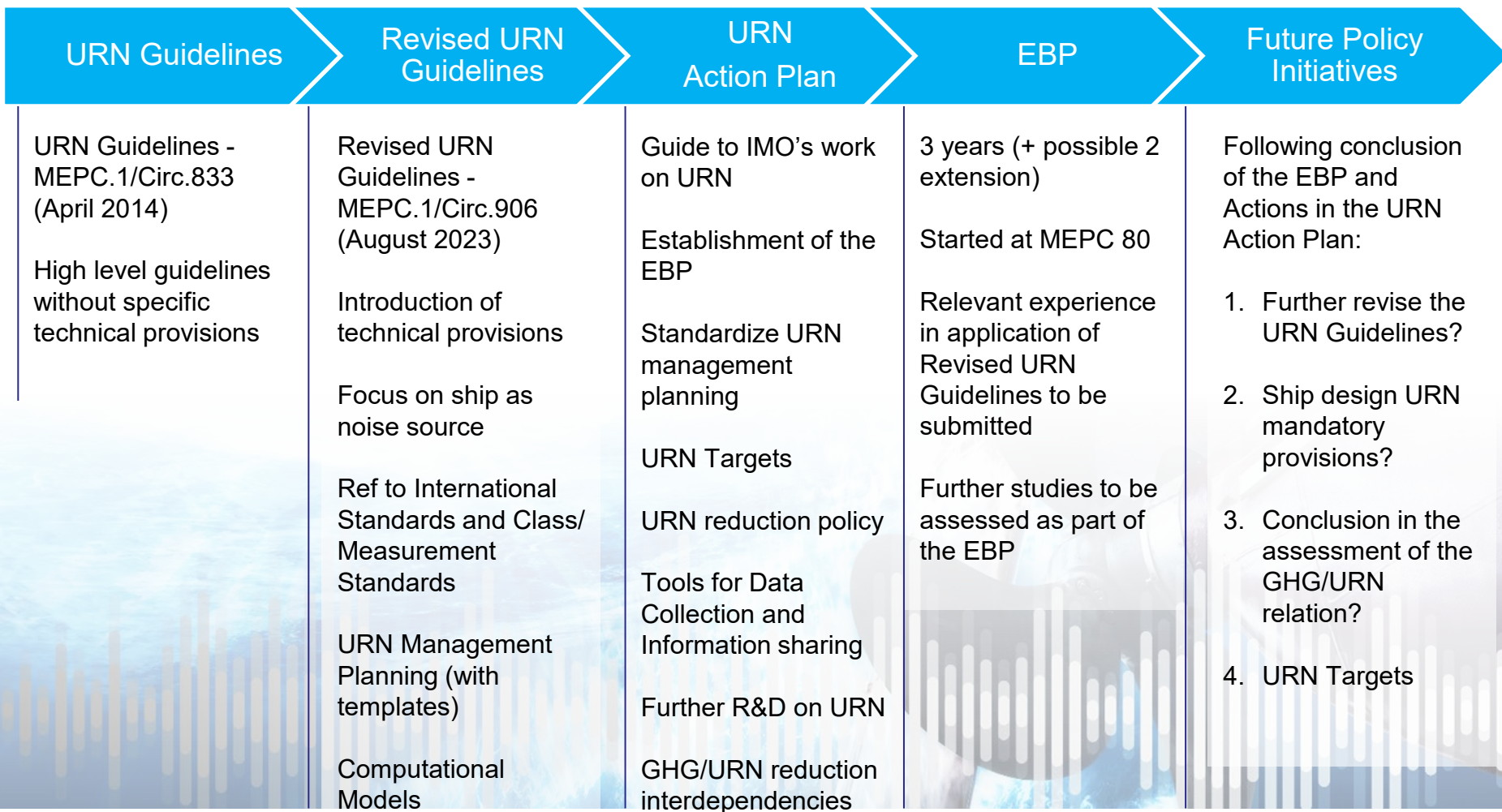
Overview

URN Guidelines

URN Action Plan

Looking Ahead

Big blocks of IMO URN work



Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview URN Guidelines URN Action Plan Looking Ahead

TIMEPLAN

Finalized Revised URN Guidelines
(MEPC.1/Circ.906)
revokes MEPC.1/Circ.833

Approved Revised URN Guidelines
(MEPC.1/Circ.906)

Finalized URN Action Plan

Approved Guidance on the EBP
(MEPC 82/17, annex 9)

Approved MEPC.1/Circ. 906/Rev.1

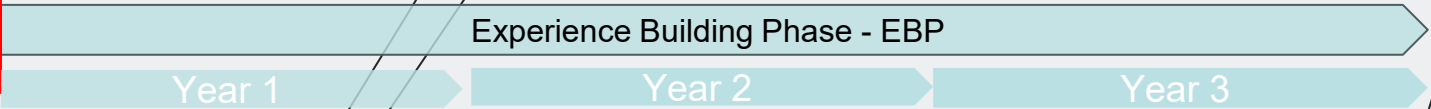
EBP Monitoring Framework + Further Studies

URN in:
MSC 83, 84, 85 (high level + Policy direction)
SDC 11, 12 (technical)



In kind support US/CAN

Guidelines for URN reduction in Inuit Nunaat and the Arctic
MEPC.1/Circ.907



Invited MS to submit lessons learned/best practices in implementation of Rev URN Guidelines (submit by MEPC 85)

Endorsed (MEPC81) Approved (MEPC 82) URN Action Plan

- ▶ Establishment of EBP
- ▶ Enhancing Public Awareness
- ▶ Developing targets and policies
- ▶ Energy efficiency and URN reduction
- ▶ Tools to collect data and share information
- ▶ Encouraging more research
- ▶ URN measurement

Decision on EBP extension (?)

Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

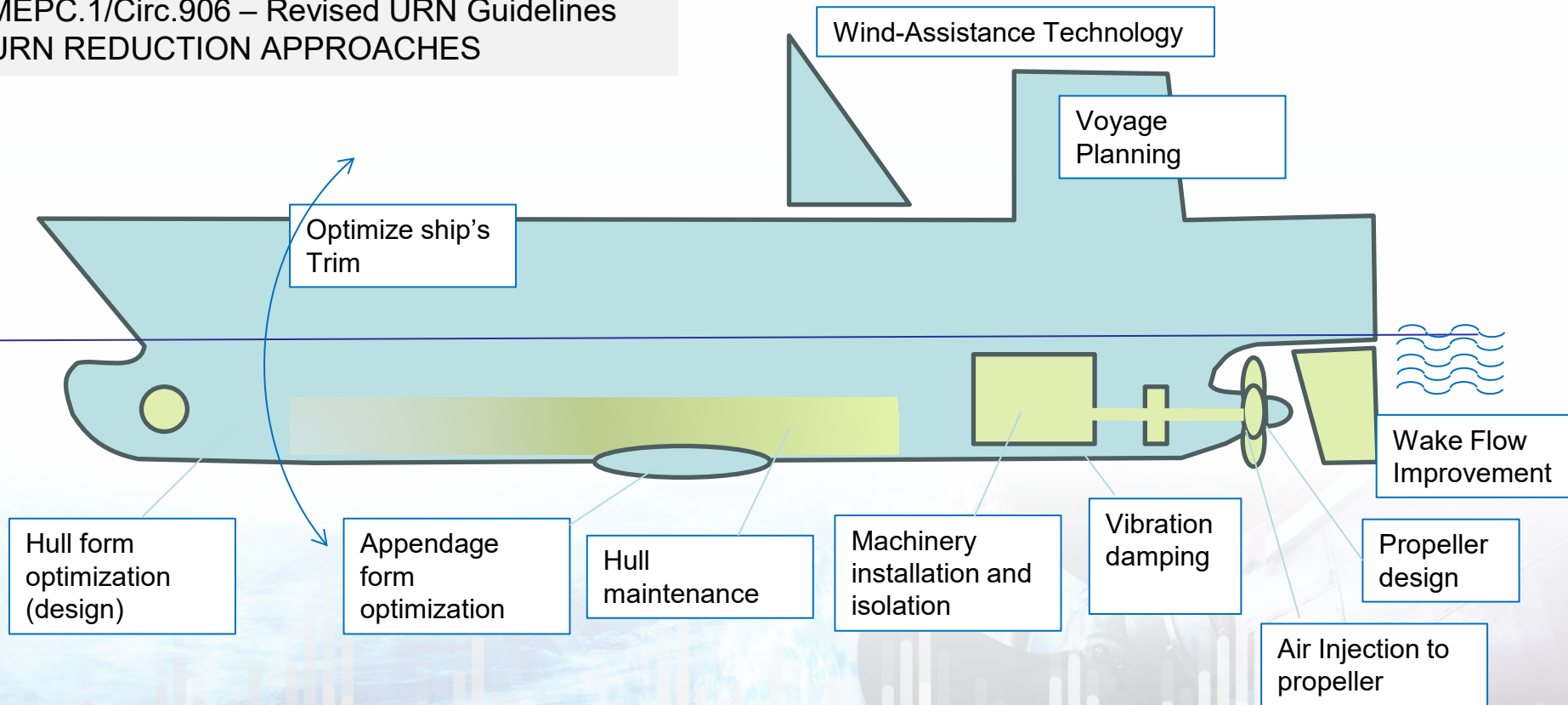
Overview

URN Guidelines

URN Action Plan

Looking Ahead

MEPC.1/Circ.906 – Revised URN Guidelines
URN REDUCTION APPROACHES



Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview

URN Guidelines

URN Action Plan

Looking Ahead

MEPC.1/Circ.906 – Revised URN Guidelines

UNDERWATER RADIATED NOISE (URN) MANAGEMENT PLANNING

Shipowners

develop and implement URN Management Plan, include URN requirements in ship design specs and maintain ships to those specifications

Designers

design ships as defined by shipowners' operational plan to meet URN requirements.

Shipbuilders

build ship to meet URN specifications.

Ship operators:

operate ship to meet URN targets and any additional regional requirements they are operating in.

URN Management Plan

(model templates in Appendix 3 of the Revised URN Guidelines)

Suppliers and manufacturers:

provide equipment to shipbuilders and shipowners, which will assist the ship to meet URN specifications.

Maritime authorities:

Support URN Management Planning, for example, supporting deployment of tools to measure ship noise levels, support innovation and adoption of noise reduction technologies, communicate URN information.

Classification societies:

assist shipowners/builders through predictions, trials, relevant URN notations, certification, etc., as reasonable and practicable.

Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview

URN Guidelines

URN Action Plan

Looking Ahead

		IMO Body	Timeline	Priority
A. EBP Establishment	1. 3-year Experience Building Phase for the Rev URN Guidelines	MEPC	Short	High
	2. Database with EBP results	MEPC	Short	Med
B. Public Awareness, education and Seafarer Training	1. Information, briefs/training to increase awareness on URN Guidelines	SDC	Short	High
	2. Workshop on relation between URN and Energy Efficiency	MEPC	Short	High
	3. Learning tools/ Technical Cooperation / Interaction with GloNoise	MEPC	Short	Med
	4. Add ref in the Polar Code Part II B to Rev URN Guidelines + Circ.907	MEPC	Med	Med-High
	5. Training Guidance for Seafarers	SDC/HTW	Short	High
C. Standardize Underwater Radiated Noise Management Planning process	1. Establish and monitor baseline URN level , based on ship designs/op	SDC	Short	High
	2. Harmonization of URN measurement standards	SDC	Short	High
	3. Predictive methods of URN during design and construction	SDC	Short	High
	4. Standardize measurement methodology and metrics	SDC	Short	High
	5. R&D, demonstration and standardization of onboard noise monitoring	SDC	Long	Med-High
D. Develop Underwater Radiated Noise Targets	1. Studies to estimate URN emissions from the maritime sector	MEPC	Short	Med
	2. Collection of information (regional) URN targets (biological relevant)	MEPC	Med	High
	3. Ship-specific URN targets	MEPC	Med	Med-High
E. Further develop policy for URN reduction	1. Roadmap for the reduction of URN from ships	MEPC	Med	High

Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview

URN Guidelines

URN Action Plan

Looking Ahead

		IMO Body	Timeline	Priority
F. Share information and consider other IMO regulatory goal	1. Share URN experience with Gov, Orgs and Convention on Biodiversity	IMO	Cont	High
	2. Update Rev URN Guidelines with URN regional monitoring, possibly setting biologically driven URN targets, defining noise sensitive areas.	SDC/PPR	Short-Med	Med
	3. Promote measures increasing energy efficiency/GHG and URN red	MEPC	Short	High
G. Develop tools to collect data and share information	1. Information on the location of URN sensitive areas	-	Short	Med-High
	2. Exp on incentive programs on Rev URN Guidelines + Circ.907	-	Short	Med
	3. URN Reduction Best Practice Forum	-	Short	High
	4. Guidance on Circ.907 (<i>URN in Inuit Nunaat and the Arctic</i>)	-	Short	High
	5. Underwater ambient noise or ambient sound monitoring programmes	-	Short	High
H. Encourage research on URN and GHG/URN and Biofouling	1. Assessing implication of URN measures on ship safety	-	Short-Med	High
	2. Impact of URN measures on stakeholders and international shipping	-	Short	High
	3. Environmental effects of local “slow-steaming”	-	Short	Med-High
	4. Effects of different types of anti-fouling systems on URN	-	Short-Long	High
	5. Effects of propeller/hull cleaning on URN	-	Short-Med	High
I. Encourage research on impacts of URN on species and habitats	1. Noise sensitive areas/species and harmonization of methodologies	-	Short-Long	High
	2. Impacts of URN on ecosystems, and marine and coastal biodiversity	-	Cont	High
	3. Standardizing biological monitoring to inform URN management.	-	Long	Med-High
	4. Real-time info for species monitoring to inform URN voyage plan	-	Short-Long	High

Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview

URN Guidelines

URN Action Plan

Looking Ahead

Experience Building Phase

Key areas for the EBP (not in order of priority):

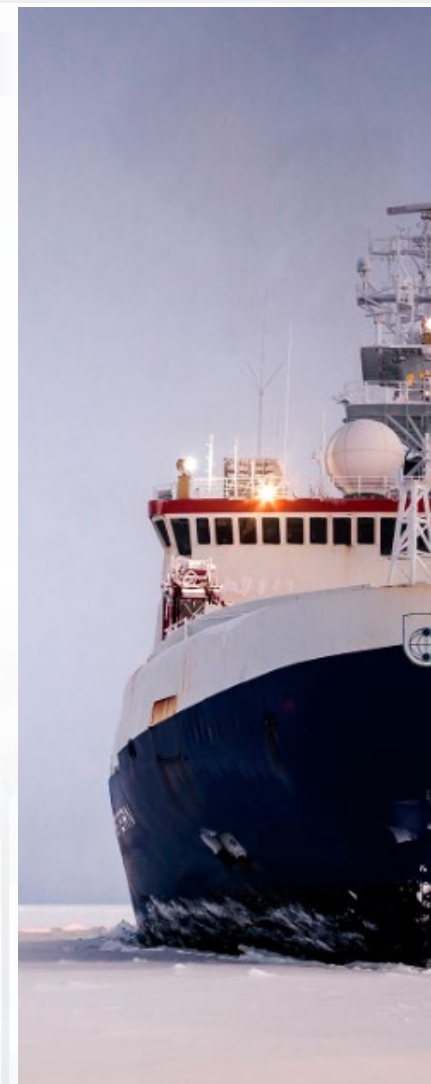
- URN Management Planning, including URN baselining, management plan development, and target setting;
- design and technical noise reduction approaches;
- maintenance and operational approaches;
- energy efficiency and URN reduction;
- evaluation and monitoring;
- incentivization;
- training and raising awareness

Track lessons learned/best practices and uptake during the first three years of the Revised Guidelines being in effect.

EBP Monitoring – to assess status/ knowledge gaps/ further needs/ at the end of the EBP

Relation between Energy Efficiency/GHG red and URN

- 2nd Workshop exploring relation between EE/GHG October 2025 - exact day to be confirmed by Secretariat.
- Gather further data, new build and retrofit applications (prediction, demonstration, field assessment, technology readiness, feasibility, cost, and scaling to achieve regional/global targets



Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview

URN Guidelines

URN Action Plan

Looking Ahead

Correspondence Group on URN

URN Correspondence Group established at SDC 11 to:

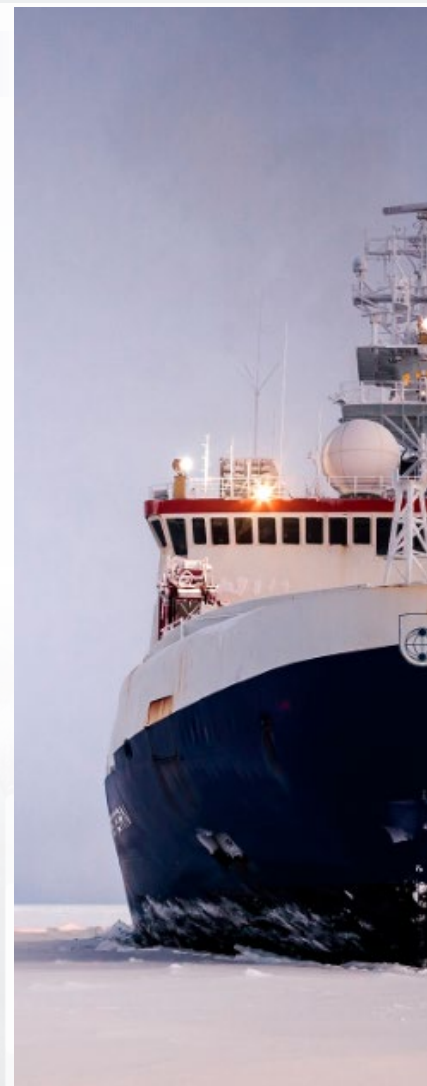
- review the technical objectives of the URN Action Plan
- develop a framework for EBP monitoring
- make a selection and evaluation of studies on URN emissions from the maritime sector
- draft terms of reference for a study, as appropriate, addressing the areas where knowledge gaps have been identified
- Report to SDC 12

Polar Code

- Possible future reference to revised URN Guidelines and the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic* (MEPC.1/Circ.907) .
- Future recommendation for polar operators to take into consideration these Guidelines and implement them, as appropriate

Availability and Dissemination of Information

- GloNoise “toolkit”*
- Access to Experience Building Phase results
- Best practices/guidance/standards for noise management planning
- IMO energy efficiency and URN workshop proceedings
- IMO commissioned study reports



Underwater Radiated Noise (URN) from Vessels:

IMO Work on URN

Overview

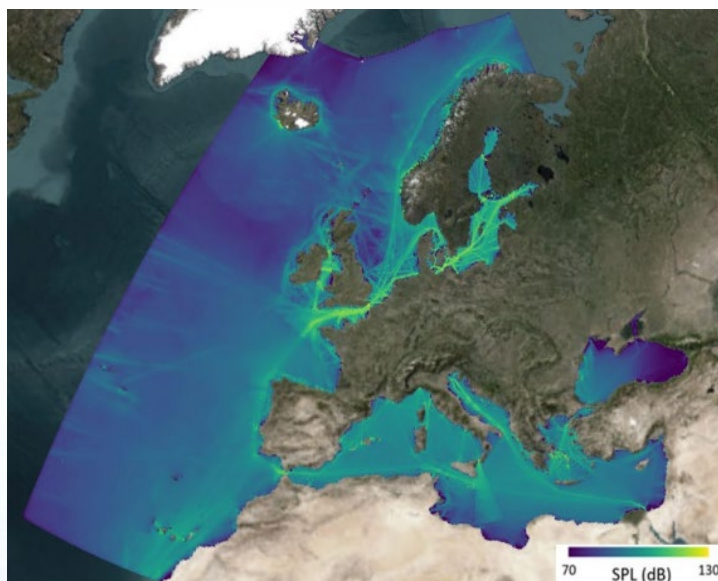
URN Guidelines

URN Action Plan

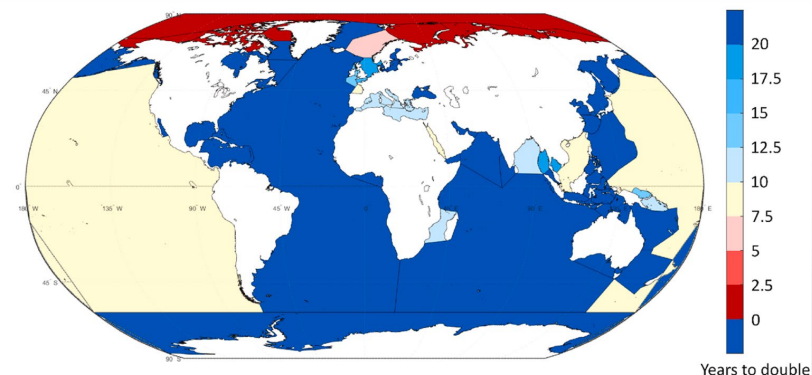
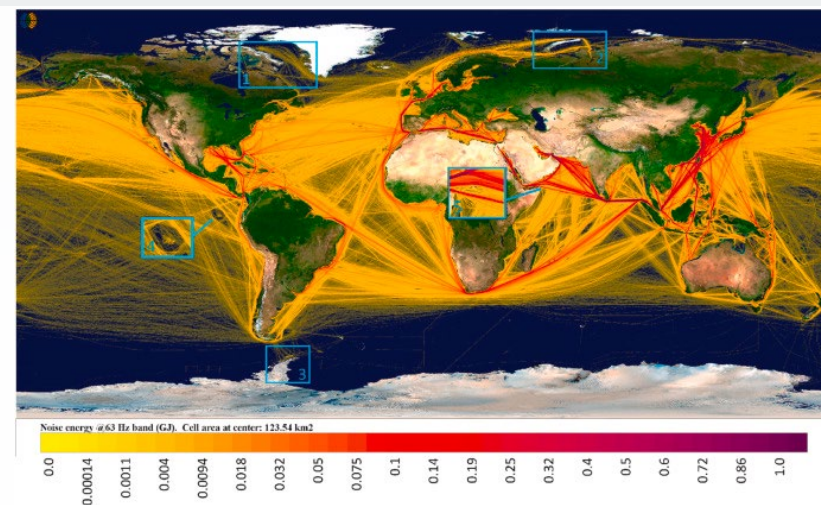
Looking Ahead

EBP is tracking ongoing regional and global URN prediction capacity and can be used to further consider IMO priorities*

* SDC 11/J/7



European Maritime Safety Agency (2024), NAVISON Final Report: Calculation and analysis of shipping sound maps for all European seas from 2016 to 2050, EMSA, Lisbon, <https://www.emsa.europa.eu/navison.html>



Jalkanen et. al 2022, Underwater noise emissions from ships during 2014–2020, Environmental Pollution, Volume 311. ISSN 0269-7491, <https://doi.org/10.1016/j.envpol.2022.119766>



[Imo_hq](#)



twitter.com/imohq



facebook.com/imohq



youtube.com/imohq



flickr.com/photos/imo-un/



[Linkedin](#)

www.imo.org