COMPLETE

Completing management options in the Baltic Sea Region to reduce risk of invasive species introduction by shipping

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

# Completing management options in the Baltic Sea Region to reduce risk of invasive species introduction by shipping

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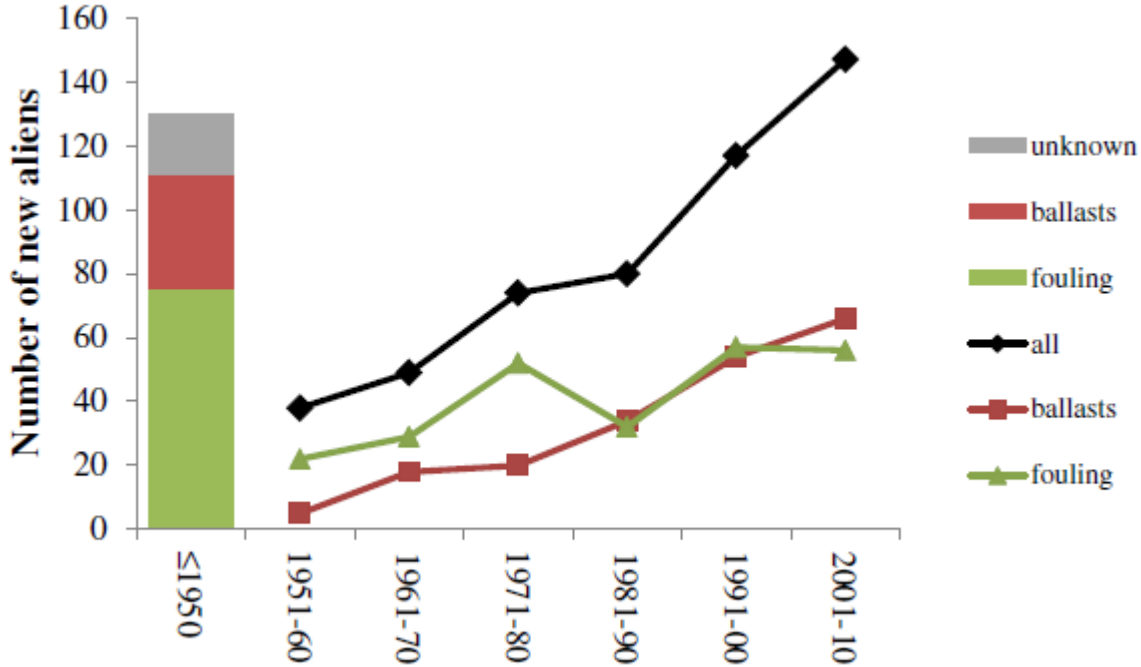
UNIWERSYTET GDAŃSKI

# SHIPPING – the main pathway of introduction of IAS

**IAS** – Invasive Alien Species




Marine alien species introduced in European seas through shipping (Katsanevakis et al. (2013), Ocean & Coastal Management 76, 64-74).

Photo: Great Lakes NOBOB team

Photo: http://www.harsonic.net

# BIOFOULING – rise in fuel consumption and gasses emission

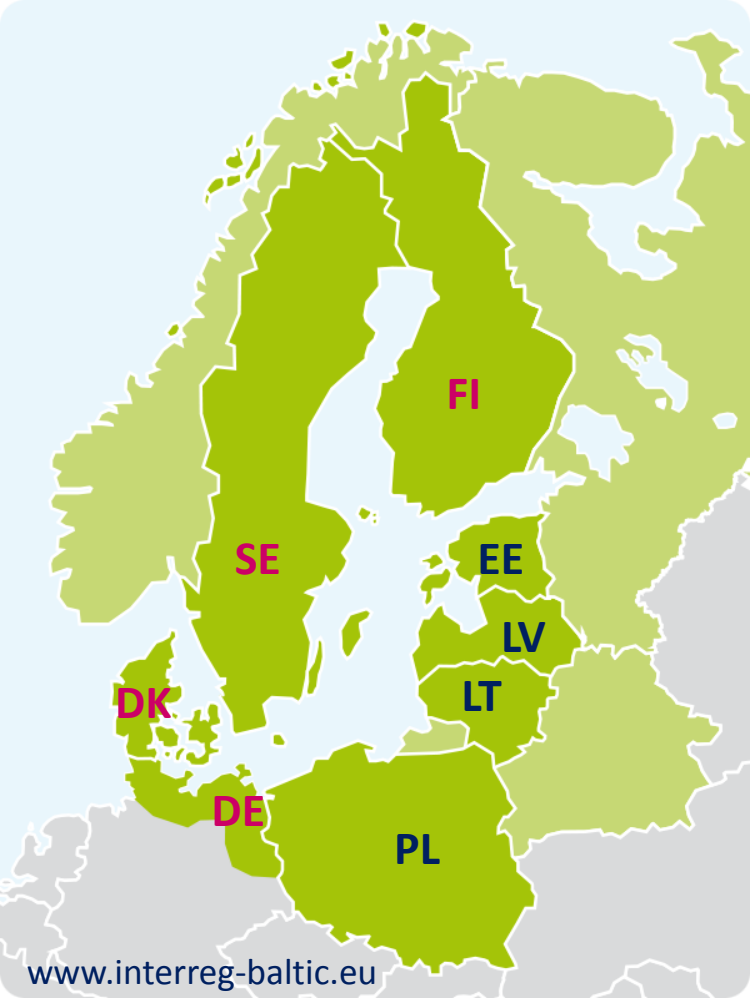
- ✓ threat to environment;
- ✓ high economic cost;
- ✓ use of antifouling paints containing toxic substances;

Bit Viking - first LNG converted vessel. Credit: Tarbit Shipping

„By limiting the adhesion of marine organisms, it is estimated that marine antifouling (AF) coatings provide the shipping industry with **annual fuel savings of $60 billion** and reduced emissions **of 384 million and 3.6 million tons**, respectively, for carbon dioxide and sulfur dioxide per annum" (Bressy and Lejars (2014), J. Ocean Tech. 9 (4), 19-28).

# POLICY DOCUMENTS

- ✓ IMO International Convention for the Control and Management of Ship's Ballast Water and Sediment (BWMC, 2004);
- ✓ IMO Biofouling Guidelines (RESOLUTION MEPC.207(62), 2011);
- ✓ IMO Guidance for Minimizing the Transfer of Invasive Aquatic Species as Biofouling (Hull Fouling) for Recreational Craft (MEPC.1/Circ.792, 2012)
- ✓ IMO International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention, 2001)
- ✓ EU Marine Strategy Framework Directive (MSFD, 2008);
- ✓ HELCOM Baltic Sea Action Plan (2007) - 'No introductions of alien species from ships';




Red – countries which ratified BWMC

# COMPLETE Objective

Developing **consistent and adaptive** management tools and recommendations for the Baltic Sea Region

by

addressing **both** major vectors of harmful aquatic organisms and pathogens: ballast water and biofouling.

## Challenges concerning the implementation of BWMC and MSFD

- non-indigenous species monitoring and surveillance for MSFD and BWMC
- database and information exchange/ synergies
- risk assessment (HELCOM/OSPAR Joint Harmonized Procedure, JHP)
- enforcement (BWMC)
- regional cooperation and information exchange
- early warning system

## Gaps concerning biofouling

- legal aspects
- limited knowledge on antifouling practices and procedures
- lack of information on common cleaning procedures and facilities
- lack of cost-efficiency analysis
- quantities of biofouling waste and its handling procedures
- the role of leisure boats and their trailers in primary introductions and secondary spread of HAOPs

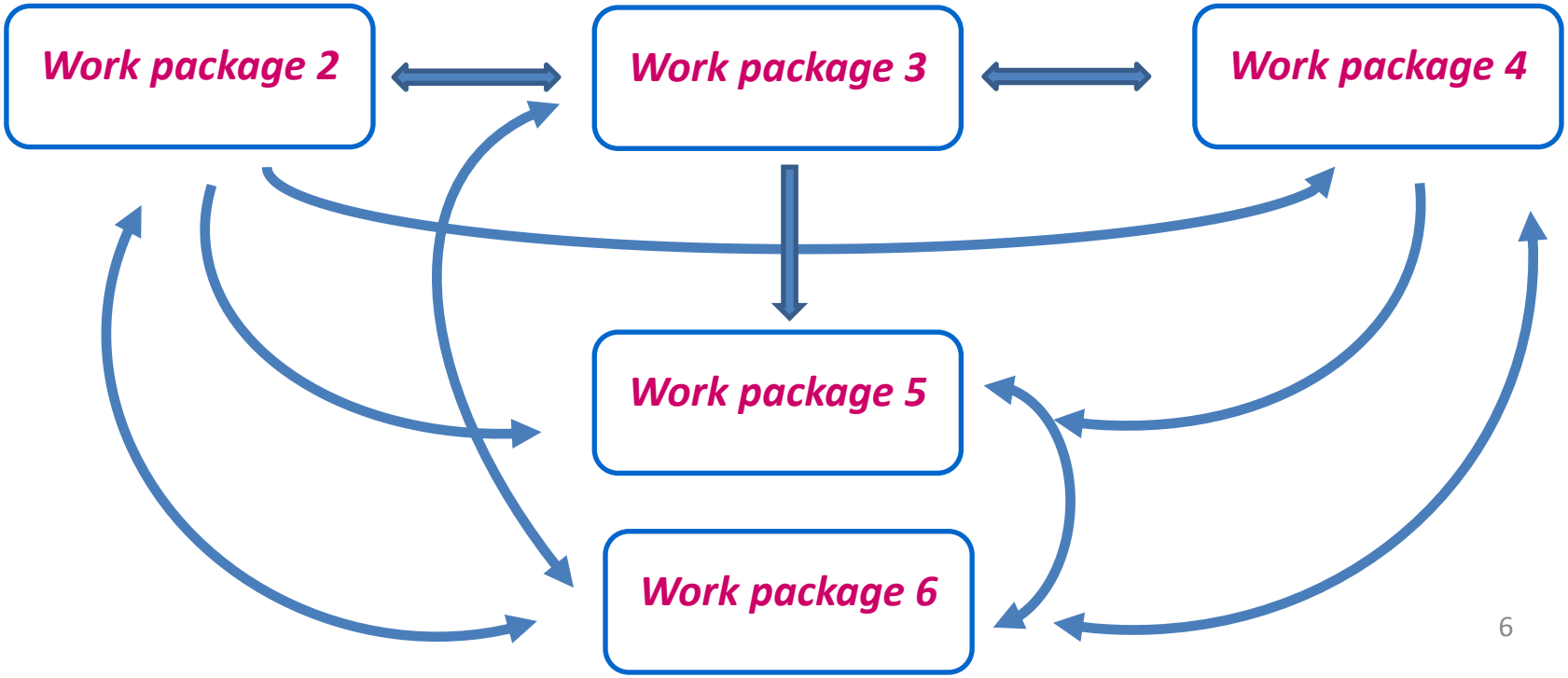
# COMPLETE WPs

***Work package 1***

Project management and administration

Kotka Maritime Research Association, Finland

**Lead partner representative:** Dr. Miina Karjalainen



# COMPLETE WPs

***Work package 2***

Guidelines for surveillance and monitoring program of non-indigenous species

Finnish Environment Institute

***Tasks***

- Selecting innovative tools for detection of target harmful aquatic organisms and pathogens
- Biofouling assessment protocol for leisure boats
- Assessment of overall biofouling potential and areas of risk
- Integrated monitoring system of non-indigenous species introductions by shipping and other vectors

# COMPLETE WPs

***Work package 3***

Ballast water risk assessment and management systems

Kotka Maritime Research Association
and
University of Tartu

***Tasks***

- Target species selection criteria and risk assessments
- Advanced risk assessment tool under the HELCOM-OSPAR Joint Harmonised Procedure
- Delivering the regionally harmonized fully operational early warning system
- Decision support system for the Baltic Sea ballast water management
- Training local authorities for the Ballast Water Management Convention

# COMPLETE WPs

***Work package 4***

Evidence-based options for biofouling management in the Baltic Sea Region

Federal Maritime and Hydrographic Agency

***Tasks***

- National biofouling regulations, cleaning procedures and facilities
- Catalogue of best practices for biofouling management from within and outside the Baltic Sea Region
- Guidance on antifouling systems cost-efficiency evaluation
- Benefits of biofouling management on ship speed, fuel consumption and emissions

# COMPLETE WPs

***Work package 5***

Databases and user-friendly information support

Klaipeda University

***Tasks***

- Information system on non-indigenous species and harmful aquatic organisms and pathogens
- Decision support tool for selection of optimal antifouling system and cleaning options
- Interactive user-friendly map on hull cleaning services

# COMPLETE WPs

***Work package 6***

Stakeholder involvement and strategy development processes

Environment Development Association

***Tasks***

- Establishing network of main stakeholders
- Engaging stakeholders into development and use of project products
- Roadmap proposal for harmonized biofouling management in the Baltic Sea Region

**Target groups:** national ministries and agencies of transport and environment, ship owners and their associations, Baltic Sea ports and coastal municipalities, shipyards, marinas and boating associations, HELCOM and its contracting parties;

# COMPLETE – expected outcome

- ✓ Development of operational **frameworks** and provision of user-oriented **tools** to make shipping in BSR more environmentally friendly

- Recommendations of improvement of HELCOM monitoring manual of HAOPs to cover the needs for BWMC and MSFD
- Improvement of the risk assessment tool under the HELCOM-OSPAR Joint Harmonised Procedure
- Proposal for a regional biofouling management strategy (ROADMAP)

# PARTNERSHIP

1. Kotka Maritime Research Association KMRA, **Finland** – project coordination
2. Klaipeda University, **Lithuania**
3. Baltic Marine Environment Protection Commission HELCOM, **Finland**
4. Finnish Environment Institute SYKE, **Finland**
5. University of Gdansk, **Poland**
6. University of Helsinki, **Finland**
7. Chalmers University of Technology, **Sweden**
8. Environment Development Association, **Latvia**
9. Federal Maritime and Hydrographic Agency, **Germany**
10. Kymenlaakso University of Applied Sciences, **Finland**
11. University of Tartu, **Estonia**
12. Keep the Archipelago Tidy Association (KAT), **Finland**

## Associated organizations

**Denmark:** (1) Ministry of Environment and Food of Denmark, (2) International Council for the Exploration of the Sea; **Estonia:** (3) Estonian Ministry of the Environment, (4) AS Tallink Grupp, (5) Baltic Ports Organization; **Finland:** (6) Finnish Ministry of the Environment, (7) Finnish Ministry of Agriculture and Forestry, (8) Finnish Transport Safety Agency, (9) Finnish Safety and Chemical Agency, (10) Finnish Energy, (11) Finnish Sailing and Boating Federation, (12) Finnlines PLC, (13) Navidom Oy, (14) Viking Line Abp; **Germany:** (15) Port of Hamburg Marketing, (16) German Federal Environment Agency; **Lithuania:** (17) Lithuanian Maritime Safety Administration, (18) SE Klaipeda State Seaport Authority; **Poland:** (19) Polish Ministry of Maritime Economy and Inland Navigation, (20) Polish Register of Shipping S.A., (21) Port of Gdynia Authority S.A.; **Russia:** (22) Makarov Training Centre of Admiral Makarov State, (23) University of Maritime and Inland Shipping; **Sweden:** Swedish Transport Agency;

# How COMPLETE supports Action Plan for EUSBSR?

- objective **'Save the Sea'**, sub-objectives **'Rich and healthy wildlife'** and **'Clear water in the sea'**

- ✓ protection of marine environment through reduction of harmful aquatic organisms and pathogens introduced via shipping;
- ✓ improvement of indicators developed in HELCOM and under the Marine Strategy Framework Directive reaching Good Environmental Status by 2021;
- ✓ minimize the threat posed by hazardous substances used as antifouling systems;

- sub-objective **'Clean and safe shipping'**

- ✓ reduction of introduction of harmful aquatic organisms and pathogens via ships' ballast and hull fouling;
- ✓ reduction the impact of ship air emissions by supporting safe and cost-efficient management of hull fouling;

- policy area **'PA Ship - Becoming a model region in clean shipping'**

- ✓ successful application by marine sector already adopted and upcoming environmental regulations;

- action **'2. To support measures reducing emissions from ships'**

- ✓ enforcement of environmental regulation for ships and improving capacities and competencies to address clean shipping among maritime stakeholders in the Baltic Sea region;