

ICES/IOC/IMO Working Group on Ballast and Other Ship Vectors (WGBOSV)

2018/MA2/HAPISG02 The ICES/IOC/IMO Working Group on Ballast and Other Ship Vectors (WGBSOV), chaired by Lisa Drake, USA, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2019	6-8 March	Weymouth, UK	Interim report by 20 April	
Year 2020	DATE March	TBD	Interim report by DATE	
Year 2021	DATE March	TBD	Final report by DATE	

ToR descriptors

TO R	DESCRIPTION	BACKGROUND	<u>SCIENCE PLAN CODES</u>	DURATION	EXPECTED DELIVERABLES
a	Conduct strategic planning (identify and develop collaborative activities, between the advance and standardize methods, etc.) to advance research and knowledge gaps by reviewing activities and responding to new requests for advice.	ICES strategic plan Goal 2: understand the relationship of human impact on marine ecosystems to estimate pressures and impacts and develop science-based sustainable national pathways.	2.1; 2.5; 4.4	3 years	Report to ICES. Respond to advice requests, as applicable.
b	Evaluate test conditions and methods for collection of ballast water, or analysis of and samples to inform national aims and/or international harmful aquatic organisms with the procedures for type ballast water from ships. It is approval and compliance imperative that the testing of ballast water implemented in management systems.	The Convention for the Control and Management of Ships' Ballast Water and Sediments, (2004) (BWMC) aims to minimize the transfer of international harmful aquatic organisms with the procedures for type ballast water from ships. It is approval and compliance imperative that the testing of ballast water implemented in a scientifically valid and standardized way globally. There are science and advisory requirements related to validated methods and procedures.	2.7; 4.1	3 years	Input on the general applicability or otherwise of such conditions or methods to IMO or national regulators through meeting participation, correspondence group and/or technical paper or peer-reviewed manuscript.
c	Investigate and evaluate climate change impacts on the establishment and spread of ship-mediated nonindigenous species, particularly with respect to the Arctic.	This work will be carried out jointly with WGITMO. Contributes to the establishment and ICES high-priority action area 'Arctic research'.	2.1; 2.5; 4.4	3 years	Contribution to a peer-reviewed manuscript (with WGITMO as the lead).
d	Investigate and evaluate methods/technologies to assess risks of, to minimize extent of, and to respond to vessel biofouling to inform of national and/or effective way to reduce risks of new	This work will be carried out jointly with WGITMO. Ships' biofouling is, to minimize with ballast water, a primary extent of, and to respond to bioinvasion vector. As management vessel biofouling to inform of invasion vectors is the only national and/or effective way to reduce risks of new	2.7; 6.1; 6.4	3 years	Strengthen ties to the IMO GloFouling partnerships through meeting participation and increased discussion of research aims; report to

	international policies or invasions, addressing biofouling guidelines. issues is of high priority in bioinvasions management.			ICES.
e	Evaluate the development of DNA- and RNA-based molecular tools for surveillance and monitoring of ship-borne invasive species. Considering the complexity of the taxonomic groups to which invasive species belong, the decline in taxonomic expertise, the need for robust monitoring efforts, and the need for reliable and accurate methods to assess compliance to regulations (e.g. BWMC), RNA- and DNA-based molecular tools have been proposed as complementary approaches to traditional methods. Although some challenges remain, these methods warrant close scrutiny.	1.6; 4.4	3 years	Input on the general applicability or otherwise of such methods to IMO or national regulators through meeting participation, correspondence group and/or technical paper or peer-reviewed manuscript.

Summary of the Work Plan

Year 1	Working on all ToRs, but with special focus on ToRs a, e, and d.
Year 2	Working on all ToRs, but with special focus on ToRs a, b, and c.
Year 3	Report on all ToRs.

Supporting information

Priority	The work of the Group forms the scientific basis for essential advice related to the movement of invasive aquatic organisms and pathogens via ballast water and other shipping vectors. As a joint working group, it also follows and supports related work within the IMO and IOC.
Resource requirements	The research programmes which provide the main input to this group are already underway, with resources provided by national governments and scientific funding agencies. The additional resources required to undertake activities in the framework of this group are negligible.
Participants	The Group is normally attended by some 25-35 members and guests, but has more than 65 members in total.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	The group will serve as primary respondent to incoming advice requests on various issues related to ship-mediated introductions.
Linkages to other committees or groups	There is a very close working relationship with WGITMO. Potential or occasional linkage with WGBIODIV, WGABD, WGIMT, WGPME and WGZE.
Linkages to other organizations	International Oceanographic Commission (IOC), International Maritime Organization (IMO), North Pacific Marine Science Organization (PICES). In addition, the outcomes are relevant to other national and international organizations involved in the development of regulatory policies.